

EARLY ADOLESCENTS' KNOWLEDGE, BELIEFS AND BEHAVIOURS REGARDING GENDER AND SEXUALITY IN RWANDA: IMPLICATIONS FOR THEIR SEXUAL EXPERIENCES AND HEALTH OUTCOMES

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DECLARATION

I, Valens Mbarushimana, declare that this thesis is my unaided work. It is being submitted for the Degree of Doctor of Philosophy (Public Health) at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other University.



(Signature of candidate)

22nd day of October 2024

DEDICATION

To my parents, late Wenceslas Mbyaliyehe (Dad), and, Xaverine Nyiransabimana (Mum), for their invaluable care and education. I owe them all.

To my wife, Vestine Karekezi, for her love and care for our children during this PhD journey.

To our daughters, Nikita, Nadege, Anaïse, and son, Liam, for their patience and taking respective responsibilities with their mum.

To you, our son, the late Maxence Nolan Ishimwe, who passed on during this journey. You left so early without enjoying this achievement with us. We always cover you with parental warmth, and you will remain with us forever.

To my brothers and sisters for their childhood support and encouragement.

To my family-in-law members for their understanding and prayers to achieve this important milestone.

I love you All!

PRESENTATIONS ARISING FROM THIS STUDY

Three presentations arose from this research:

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AWARD

An award was issued as the best e-poster abstract to the presentation entitled: Does access to sexual and reproductive health and rights information affect very young adolescents' knowledge in Rwanda? During the international conference held in Kigali, Rwanda, by the Centre for International Reproductive Health Training (CIRHT) at the University of Michigan between 5-7 October 2022 under the theme of Sexual and Reproductive Health: Informing Policy and Practice through Research and Preservice Training (Appendices 27-28).

ABSTRACT

Background: Access to sexual and reproductive health and rights (SRHR) information during adolescence is a fundamental human right and helps adolescents fully develop their potential. Due to developmental changes, early adolescence (10-14 years) offers an opportunity to shape early adolescents' sexual behaviours through various opportunities for education about their sexual and reproductive health before their behaviours become well-established in late adolescence and adulthood. Their sexual and reproductive health and rights knowledge, beliefs and behaviours play a significant role and may affect their sexual experiences and health outcomes. Rwanda has established several policies to promote adolescents' sexual and reproductive health and introduced comprehensive sexuality education (CSE) in schools in 2016 to enhance young people's knowledge, skills, and values to allow them to decide responsibly about their sexual and social relationships, and to promote and sustain risk-reducing behaviours. There has been a significant focus on older adolescents' sexual and reproductive health and rights and limited focus on early adolescents. Limited evidence on the sexual knowledge, beliefs, and behaviours of young adolescents resulted in framing this research, and there are no similar studies for this age group. This research explores the extent to which early adolescents aged 12-14 years are knowledgeable about their SRHR and assesses whether this knowledge and attitudes have implications for their sexual experiences and health outcomes. This study aimed to assess how SRHR policies in Rwanda address the specific information needs of early adolescents in general and explore the extent to which SRHR knowledge influences sexual behaviours, sexual experiences and health outcomes among this age group (12-14 years).

Methods: This research was conducted in three phases, including the desk review, the survey with early adolescents aged 12-14 years (phase 2), and focus group discussions to complement findings from phases one and two and the integration of findings (phase 3). The study used a social-ecological framework adapted for adolescent sexual and reproductive health, whereby multiple factors at the individual, relationships, community and societal levels interact to influence early adolescents' SRHR knowledge, beliefs, behaviours, sexual experiences and health outcomes. The research started with the policy review using the policy triangle framework. This framework identifies four key elements of a policy: context, content, process and actors. The policy review process facilitated engagement with gender and sexuality education stakeholders. This allowed them to share their perspectives on best enabling access to gender and sexuality information for

early adolescents. Findings from these stakeholders also allowed us to explore the content of SRHR messages conveyed to early adolescents in Rwanda through a review of the CSE as embedded in the competence-based curriculum. The International Technical Guidance on Sexuality Education guided this review. Finally, a survey with 811 early adolescents and 13 focus group discussions with 108 early adolescents allowed us to explore the extent to which this age group were knowledgeable about SRHR, their sexual experiences and health outcomes. Quantitative data were analysed using descriptive and inferential statistics, while qualitative data were analysed thematically.

This research obtained ethical and other necessary approvals from research institutions controlling research in Rwanda and from the Human Research Ethics Committee (HREC - Medical) of the University of the Witwatersrand. Furthermore, signed informed consent from SRHR stakeholders and participants' parents or legal guardians and written informed assent from early adolescents were obtained from those who had received parental consent.

Findings: SRHR policies generally focus on adolescent health and have little focus on gender and sexuality information and knowledge for early adolescents. SRHR stakeholders indicated that access to gender and sexuality information was determined by factors at the individual level, such as curiosity and age; the relationship level, such as parent-child interaction; the community level, such as the sources of information available, the scope of SRHR programmes, and the general SRHR stakeholders' misunderstanding about gender, norms; and the societal level such as limited resources, policy-making pathways, unfriendly laws.

The CSE review showed that, of the eight areas recommended by UNESCO, CSE for early adolescents in Rwanda focuses mainly on four areas: sexual and reproductive health; human body and development; values, rights, culture and sexuality; and understanding gender, respectively. There was little or no emphasis on the topics of the four other recommended areas of sexuality education, which were violence and staying safe, skills for health and well-being, sexuality and sexual behaviour, and relationships. Findings from stakeholder interviews support these results and suggest other topics to be included in the CSE curriculum because of controversies surrounding these topics in Rwanda.

Of the 811 participants involved in the quantitative survey, the majority were females (51%) and 49% males. Their age range was 12-14 years (n=802), and most were 14 (55.4%). Early

adolescents showed that their knowledge of SRHR was generally low: scores about knowledge of sexuality were below 50% (mean score: 2.8 out of 6, 95% CI: 2.7-2.9), 42% (mean score: 4.9 out of 12, 95% CI: 4.8-5.1) about contraceptive methods, 65% (mean score: 8.4 out of 13, 95% CI: 8.2-8.5) about HIV/AIDS and sexually transmitted infections, and 54% (mean score: 7.1 out of 14, 95% CI: 6.9-7.3) about condoms. Concerning attitudes, 90% of participants exhibited favourable attitudes (>50% score) towards sexual norms, and 97% had a gender-equitable attitude (>50% score). In the survey, about 81% of early adolescents reported a lifetime involvement in any of the nonpenetrative sexual experiences (hugging, holding hands, caressing, kissing on the lips, touching or being touched on genitals, stroking or being stroked genitals to climax). In comparison, 7% of participants reported having experienced penetrative sexual experience involving oral sex, anal and/or vaginal intercourse. Attendance at parties where young people dance and fathers having a lower level of education were associated with higher odds of non-penetrative sexual experience. Factors associated with the experience of penetrative sexual intercourse were being male, drinking alcohol, watching pornographic films three or more times, being a double orphan, discussing sex matters often with one's father and being forced to have sexual intercourse. High scores on knowledge about condoms and positive attitudes towards sexual norms were associated with both non-penetrative and penetrative sexual experiences. Those with high scores on HIV/AIDS and STDs were less likely to report penetrative sex. Positive gender attitudes were associated with non-penetrative experiences.

Concerning participants' sexual behaviours, periodic abstinence and condoms were the commonly used methods of contraception by the participants, and a significant proportion of them reported having a boy/girlfriend/partner. None of the girls had been pregnant, but four of 311 boys (1.3%) reported impregnating girls or a woman. Nearly 70% of the participants have had an HIV test, and a few reported having had an STD. Knowledge about sexuality, contraceptive methods, and condoms, attitudes towards gender and sexual norms were associated with testing for HIV. Qualitative findings from the focus group discussion revealed that early adolescents benefited from the SRHR information and knowledge that shaped their sexual behaviours and improved their health outcomes.

Concerning the relationship between various sources of SRHR information and participants' knowledge, beliefs and behaviours, this research found that schoolteachers were the primary and

preferred sources of SRHR information on puberty and reproduction. Girls preferred their mothers, female schoolteachers, sisters and other extended family members, such as aunts, as sources of SRHR information. In contrast, boys preferred obtaining SRHR information from their fathers and brothers, as well as from films, the internet and television.

Conclusion: SRHR knowledge, attitudes, behaviours, experience and health outcomes of early adolescents should be put in their context for interpretation. SRHR policy does not adequately address their specific information needs, and most early adolescents access SRHR information but have a low level of SRHR knowledge. However, this knowledge is vital for their complete and safe sexual health development. Some early adolescents have started engaging in sexual experiences and face challenges related to poor sexual health outcomes. Recommendations include the use of a multi-sectoral approach to promote early adolescents' access to SRHR information and to address their specific needs by involving more stakeholders (e.g. early adolescents and community members) in SRHR policy-making processes, addressing the social-ecological factors hindering proper access to good quality of SRHR information, those associated with sexual experiences; and delivering comprehensive sexuality education as per recommended standards.

Future research should focus on integrating the specific needs of early adolescents in the SRHR policies, exploring the challenges related to implementing comprehensive sexuality education (CSE) in school settings and assessing the effects of CSE on the learners' behaviours and sexual experiences. Future research should also examine the role of faith-based organisations in imparting CSE and explore approaches to delivering high-quality SRHR information to early adolescents. Similar research should be conducted among out-of-school early adolescents aged 10-11 years and those attending schools using international curricula in Rwanda.

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LIST OF ACRONYMS AND ABBREVIATIONS

ADEPR	Association of Pentecostal Churches of Rwanda
APHRC	African Population and Health Research Centre
BSHG	Budget Support Harmonization Group
CAMERWA	Central agency for the purchasing of essential drugs in Rwanda
CARTA	Consortium for Advanced Research Training in Africa
CMHS	College of Medicine and Health Sciences
CSE	Comprehensive Sexuality Education
CSOs	Civil Society Organizations
DPCG	Development Partners Coordination Group
ICPD	International Conference on Population and Development
ITGSE	International Technical Guidance on Sexuality Education
FAO	Food and Agriculture Organization
FBOs	Faith-Based Organisations
FGD	Focus group discussion
FP	Family planning
HCC	Health Communication Centre
HREC	Human Research Ethics Committee
HSSP	Health Sector Strategic Plan
IRB	Institutional Review Board
m4RH	Mobile for Reproductive Health
MCH	Maternal and Child Health
MDGs	Millenium Development Goals
MINECOFIN	Ministry of Finance and Economic Planning, Rwanda
MINEDUC	Ministry of Education, Rwanda
MoH	Ministry of Health, Rwanda
MYICT	Ministry of Youth, Information and Communication Technology (Rwanda)
NCST	National Council for Science and Technology-Rwanda
NGOs	Non-governmental organisations
RBC	Rwanda Biomedical Centre

REB	Rwanda Basic Education Board
SDG	Sustainable Development Goals
SH	School Health
SH TWG	School Health Technical Working Group
SRGBV	School-related gender-based violence
SRH	Sexual and reproductive health
SRHR	Sexual and Reproductive Health and Rights
TWG	Technical Working Group
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
UNFPA	United Nations Population Fund
WHO	World Health Organization
WFP	World Food Programme

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OPERATIONAL DEFINITIONS

EARLY ADOLESCENCE

Adolescence is the period that covers 10-19 years and is divided into early (10-14 years) and late (15-19 years) adolescence [1]. Early adolescence is the period between 10-14 years, during which rapid and significant physical, cognitive, social, and emotional development occurs [2-4]. New gender roles and sexual identities also occur among early adolescents, depending on their social context [2]. Health behaviours established during this period may have a long-lasting impact during late adolescence and adulthood [4]. In this study, the structure of the curriculum locates early adolescents in primary and lower secondary levels, and we decided to recruit those in lower secondary with ages of 12-14 years.

HEALTH POLICY

A policy is a formal document written by a government authority that defines the strategies or priorities related to a specific area [5, 6]. As a formal statement, the policy targets a specific population and provides a framework for action [6]. The policy further defines specific procedures for the government, non-government and private sectors, as well as the responsibilities of each partner [6]. This document entails written codes, standards, and regulations that guide the choice [7]. The World Health Organisation, cited by O'Brien et al. [8], defines a health policy as decisions, plans, and actions to achieve specific health goals. In this study, a policy is any formal document from the Government of Rwanda that describes access to gender and sexuality information to early adolescents. A strategic plan refers to any document outlining the strategies to implement a specific policy related to gender and sexuality education in Rwanda.

GENDER

Gender encompasses “the different roles, rights, expectations, and obligations that culture and society attach to individuals based on sex.” [9]. Gender emphasises socially and culturally constructed differences between men and women, giving rise to masculine and feminine identities, roles, norms, and relationships [10, 11]. Gender differs from sex, which refers to biological distinctions between females and males, mainly concerning reproductive functions [10].

GENDER NORMS

The term norm means what most people do in a particular context [12]. Gender norms are “the widely accepted social rules about roles, traits, behaviours, status and power associated with

masculinity and femininity in a given culture” [11]. These rules relate specifically to gender differences [12]. Clayton and Tannenbaum [13] define gender norms as “unspoken rules in the family, workplace, institutional, or global culture that influence individual attitudes and behaviours”. In this study, gender norms refer to commonly accepted social rules that influence early adolescents’ (both girls and boys) behaviours. Gender norms are commonly reflected in adolescents’ gender attitudes [11].

GENDER ATTITUDES

Gender attitudes refer to personal perceptions, beliefs or endorsement of gender [11]. Personal gender attitudes intensify during early adolescence as puberty reshapes self-perceptions and social expectations [11].

SEXUAL ATTITUDES

Sexual attitudes are beliefs and feelings about sex [14].

SEXUAL HEALTH

The World Health Organization (WHO) defines sexual health as “a state of physical, emotional, mental and social well-being concerning sexuality; it is not merely the absence of disease, dysfunction or infirmity. Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences free of coercion, discrimination and violence. For sexual health to be attained and maintained, the sexual rights of all persons must be respected, protected and fulfilled” [15]. As a component of general health, sexual health is defined as the avoidance of adverse health outcomes such as unintended pregnancy, the transmission of sexually transmitted infections including HIV, sexual violence and harmful practices such as genital mutilations [16].

SEXUALITY EDUCATION

The European Expert Group on Sexuality Education [17] defines sexuality education as aiming “to develop and strengthen the ability of children and young people to make conscious, satisfying, healthy and respectful choices regarding relationships, sexuality and emotional and physical health. Sexuality education does not encourage children and young people to have sex.”

COMPREHENSIVE SEXUALITY EDUCATION

According to UNESCO [18], “comprehensive sexuality education is a curriculum-based process of teaching and learning about the cognitive, emotional, physical and social aspects of sexuality. It aims to equip children and young people with knowledge, skills, attitudes and values that will empower them to realise their health, well-being and dignity; develop respectful social and sexual relationships; consider how their choices affect their well-being and that of others; and understand and ensure the protection of their rights throughout their lives. CSE can be delivered in formal or non-formal settings.”

SEXUAL RIGHTS

The World Health Organization specifies that Sexual rights embrace certain human rights already recognised in international and regional human rights documents, other consensus documents, and national laws [19]. Applying these rights constitutes sexual rights [20].

SEXUAL SOCIALISATION

Sexual socialisation during adolescence is defined as the process by which adolescents acquire knowledge, attitudes and values related to sexuality [21]. There are different sources for sexual socialisation, including parents, peers, media, religion and school [21].

REPRODUCTIVE HEALTH

Chandra-Mouli et al. [22] and the United Nations [23] define reproductive health briefly as “a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and its functions and processes.” Reproductive health implies having satisfying and safe sex, the capability to reproduce and the freedom to decide if, when and how often to do so [23].

SEXUAL EXPERIENCE

The conceptualisation of sexual experience varies in literature [24]. Sexual experience consists of non-coital (non-penetrative) and coital (penetrative) sexual experiences [25, 26]. Studies on sexual experience indicate that non-coital experience refers to a lifetime (ever) rather than current (last 12 months) involvement in any of the following activities: kissing, fondling, hugging, foreplay or heavy petting, holding hand, hugging [24-26]. Coital sexual experience has been measured as the lifetime of any of the following sexual activities: oral sex (when a partner puts his/her mouth on the counterpart's sex organs), vaginal sex (when a man inserts his penis into a woman's vagina),

and anal intercourse (when a man inserts his penis into his partner's anus or butt hole) [24, 25, 27-29].

SEXUAL HEALTH OUTCOMES

In this study, sexual health outcomes related to pregnancy and sexually transmitted infections were measured. Questions related to pregnancy as sexual health outcomes included ever being pregnant for girls, ever impregnating a girl or woman for boys, and the outcome of the pregnancy (e.g. abortion, miscarriage, live birth). Questions related to sexually transmitted infections as a sexual health outcome encompass ever having concerns that early adolescents might catch a sexually transmitted infection, ever doing an HIV test, ever having a sexually transmitted infection, and ever needing to seek medical care for sexual and reproductive health matters.

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND INFORMATION

This thesis locates early adolescents, defined as those in the age group 10-14 years, in the global context and elaborates on what is known about their gender and sexuality knowledge, beliefs and behaviours in general, specifically in Rwanda. It provides a brief explanation of the access to sexuality and gender information by early adolescents, the sources of information, and the importance of gender as a determinant of early adolescents' behaviours and sexual experiences. Finally, an analysis and critique of the literature is provided.

1.2 INTRODUCTION

Globally, the population of early adolescents constitutes half of 1.3 billion adolescents aged 10–19 [30, 31]. Early adolescents face physical, psychosocial, emotional and economic changes [32, 33], of which sexual maturation is the most distinctive aspect [34, 35]. The literature categorises adolescence into early (at times called very young) adolescence (10-14 years) and late (15-19 years) adolescence [1, 36, 37]. Many adolescents explore their emerging sexuality through partnered sexual activity [38]. In addition, it is in early adolescence that most sexual behaviours are initiated [32, 36] and tend to last long into adulthood [39-41]. This period marks the beginning of an increase in the need for intimacy and love-making [42]. It also provides an opportunity to address sexual violence and gender discriminatory norms before they become solid by late adolescence and adulthood [43]. Before vaginal sex, adolescents may experience other forms of sexual activity, such as same-sex or heterosexual masturbation, oral or/and anal sex [38].

Early sexual debut has many negative consequences when done unsafely [44], especially for early adolescents [45, 46]. The consequences may include early pregnancy and associated complications, unsafe abortion, and sexually transmitted infections (STIs), including HIV, early marriage, coerced sex, physical and sexual violence, and unprotected sex [11]. Other consequences may include irregular and multiple sex partners [44, 47-49], stigma or rejection by parents, threats of violence, lower education attainment, fewer employment opportunities [50], as well as heavy smoking and alcohol abuse [11]. Providing early adolescents with context-related information about human sexuality can improve their sexual knowledge and help them mitigate risky sexual behaviours and their associated consequences [39].

1.2.1 Context of early adolescents' gender and sexuality knowledge, beliefs and behaviours

The International Conference on Population and Development (ICPD), held in Cairo in 1994, made a call to address adolescents' educational and service needs and foster a positive development of their sexuality [22]. The ICPD also placed adolescent sexual and reproductive health on the global agenda [51]. Promoting adolescents' sexual health requires addressing multi-level factors in their broad social context, as illustrated by Bronfenbrenner's socio-ecological model [52]. It considers the interplay of individual, interpersonal, community and societal factors that influence adolescent health [53] and has been used in early adolescent studies [11, 28, 36].

Policies and laws are instrumental in promoting adolescent sexual health and are part of the social context that affects early adolescents' health. For example, existing policies and laws may promote or hamper early marriage, access to sexual and reproductive health (SRH) services for early adolescents, compulsory schooling, tobacco and alcohol use and gender equity [36]. Community factors encompass those related to schools [11, 28], churches [54], exposure to media [11, 55] and gender norms [11]. Interpersonal factors include communication between early adolescents and parents, other family members and peers [11, 54]. Individual-level influences include factors such as an early adolescent's age, sex, gender attitudes [11] and religious affiliation [54].

Early adolescents' knowledge, beliefs, and behaviours about gender and sexuality in Rwanda should be dealt with in their social context, as illustrated by Bronfenbrenner's social-ecological model [52]. The Government of Rwanda has defined different policies for their health [56], gender [57], adolescent sexual and reproductive health and rights (SRHR) [58] and information and communication technology (ICT) [59]. Furthermore, Rwanda has enacted different laws, such as the law governing persons and families (Republic of Rwanda, 2016a) and the law on human reproductive health [60].

Rwanda has expanded rapidly in the media, internet and telecommunications sectors. In June 2018, Rwanda had 26 registered FM radio broadcasters, four media service providers and 13 licensed TV stations [61]. Internet subscriptions increased by 25% [61]. The mobile telephony penetration rate is 78.1% [61].

While Rwanda promotes gender equality [57], gender-based violence is widespread among Rwandan adolescents aged 15-19 years. Twenty-nine and twenty-five per cent of adolescent

girls and boys, respectively, had experienced either physical or sexual violence in 2019-2020 [62]. In addition, reporting violence and support seeking is not common among older adolescents (15-19 years), as only 31% of boys and 27% of girls seek support to stop experiencing violence [62]. It is important to note that early adolescents, by law, have the right to information access [60], and schools provide courses related to human reproductive health [60]. However, decision-making related to SRHR is granted to only those who have attained the age of majority (18 years) [60], excluding early adolescents, who are the focus of this study.

1.2.3 Access to sexuality and gender information

Adolescents' access to sexual health information is an international concern [63]. Early adolescents need to be aware of their emerging changes and the possible consequences of their behaviours [64]. They need to make informed decisions about contraception, pregnancy, sexually transmitted infections (STIs) [26], and other essential aspects of their sexual health to maintain SRH [65].

Access to information increases sexual knowledge [65, 66]. Limited access to SRHR information leads to limited use of preventive and curative services [67]. Moreover, the literature shows that exposure to sex education is positively associated with SRH outcomes among adolescents between 15-18 years [68]. Access to SRHR information and services face challenges such as unfriendly services and policies, poor parent-child communication, and conflicting messages from media [42, 69]. Generally, early adolescents have gaps in SRHR knowledge [22, 70]. In Rwanda, a study indicated that young people aged 14-24 in rural communities lack SRHR knowledge. At the same time, they experience transactional sex and believe that obtaining SRH services is socially prohibited [71]. Experimenting with sex is also a concern for adolescents [72]. Poor SRHR knowledge increases the risks of unprotected sex, which in turn increases the risks of unplanned pregnancy and STIs [73]. Despite theoretical literature, it is not known whether access to sexuality and gender information contributes to better knowledge and improves early adolescents' behaviours in Rwanda.

1.2.4 Sources of early adolescents' gender and sexuality knowledge

Research indicates that adolescents access multiple SRHR information sources. A scoping review of adolescent engagement in sexual and reproductive health research in Kenya, Rwanda, Tanzania, and Uganda indicated that radio, parents, peers, and health centres were familiar sources of information for adolescents [74]. In these settings, adolescents consider parents as

valued and desired sources, but parents consider sexual matters as immoral, which inhibits discussions with adolescents. For this reason, adolescents turn to peers to seek sexuality information. This study also reports issues of lack of confidentiality and adolescent-specific information, and low trust in care, which prevent adolescents from seeking information from health centres [74].

Early adolescents acquire information about gender and sexuality from various environmental sources. Kemigisha et al. indicated that sexual knowledge is delivered by various sources, including media (85%), fathers (10%), mothers (22%), and schools (31%). among early adolescents from South Western Uganda [75]. Furthermore, Kemigisha et al. found that HIV knowledge is widespread (95%) among early adolescents from South Western Uganda. However, only 47% knew at least one way in which HIV is spread. Only 37% knew about other sexually transmitted infections. Concerning the knowledge about contraception, Kemigisha et al. reported that 56% of early adolescents knew about one contraceptive method [75].

The quality of this information can be debatable. Professional sources, such as health professionals and teachers, tend to provide more accurate and comprehensive knowledge about contraceptive use and efficacy compared to non-professional sources. These non-professional sources include media (internet, television, and radio), peers, and romantic partners [76]. Sex education delivered by schools improves awareness and knowledge of risk reduction, contributes to higher self-effectiveness and intention of safer sex, and delays the onset of sexual activity [77].

In Rwanda, there needs to be more literature about what early adolescents prefer as sources of information. In the USA, female adolescents prefer professional sources, while male adolescents consult nonprofessional sources [76]. In Iran, mothers and same-sex friends are preferred to other sources [78]. Both informal and formal sources of sex education provide sexual information and gender role models in a process called sexual socialisation [79].

1.2.5 Gender, attitudes, behaviours and sexual experience of early adolescents

Gender is a determinant of the sexual behaviours of adolescents [77, 80-84]. Gender embodies social norms, attitudes, and activities society deems more appropriate for boys and girls [9]. Family, media and social institutions teach boys and girls appropriate behaviours at an early age [9, 85]. Sexual behaviour is shaped by cultural discourses and socially constructed attitudes and ideas that change over time [9, 86]. For example, heterosexual activity is considered a norm

among early adolescents from many different cultural settings [87]. Social norms may negatively affect girls more than boys [88]. In some parts of the world, masculinity is associated with sexual activity, having several sexual partners and experiences, virility and pleasure; conversely, femininity is equated with passivity, virginity, chastity, and fidelity [9]. For girls, gender inequalities and social norms limit their sexual decision-making power [82]. Cultural norms influence sexual practices [27].

A less egalitarian attitude towards gender norms has been associated with adverse SRH outcomes (pregnancy, STIs) among adolescent girls [84, 85]. Imbalances in gender norms encourage risk-taking [89] and violence and may result in adverse health outcomes, including sexually transmitted infections [85, 90], including HIV. Inequitable gender norms may lead to women's subordination and grant disproportionately to men the power in decision-making and negotiating sexual relationships [91]. To date, no study has, like this does, investigated gender and sexuality-related knowledge, beliefs and behaviours of the early adolescents and linked them to their experiences in general and in Rwanda in particular. Additionally, it is unknown how early adolescents' social context responds to their needs for information related to their evolving health.

1.2.6 Adolescent health as part of the global developmental agenda

In 2015, the United Nations General Assembly adopted a global set of 17 goals called Sustainable Development Goals (SDGs) to be attained by 2030 [92, 93]. The SDGS agenda was built on the Millenium Development Goals and aimed to complete what the MDGs did not achieve [93]The SDGs are integrated and indivisible throughout the three pillars of sustainable development: economic, social, and environmental.

Table 1. 1 Sustainable Development Goals

Goal 1. End poverty in all its forms everywhere
Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture
Goal 3. Ensure healthy lives and promote well-being for all at all ages
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
Goal 5. Achieve gender equality and empower all women and girls
Goal 6. Ensure availability and sustainable management of water and sanitation for all
Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all

Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
Goal 10. Reduce inequality within and among countries
Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable
Goal 12. Ensure sustainable consumption and production patterns
Goal 13. Take urgent action to combat climate change and its impacts*
Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development
Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
Goal 17. Strengthen the means of implementation and revitalise the Global Partnership for Sustainable Development

Source: United Nations General Assembly [93]

All SDGs directly relate to health or indirectly contribute [94]. Child and adolescent health are essential for achieving SDGs [95, 96]. Through the SDG 3, health has a central place in SDGs [94]. Target 3.7 of the SDGs is dedicated to sexual and reproductive health and aims to ensure universal access to sexual and reproductive healthcare services, including family planning, information and education, and the integration of reproductive health into national strategies and programmes [94]. Furthermore, SDG 5 focuses on achieving gender equality and empowering women and girls. Target 5.6 seeks to ensure universal access to sexual and reproductive health and reproductive Rights. This shows how SRHR is reflected in the international developmental agenda.

Rumble et al. point out that the progress in achieving SDGs is still far behind the anticipated targets, the lack of disaggregated data by sex or age and the absence of data self-reported by girls for 10-14 years [97]. Furthermore, a review of SDG indicators found that only 41% were related directly to adolescent health, with 13% of all SDG indicators with ages 10-19 years and only 6% present with age-disaggregated data [92, 98].

1.3 PROBLEM STATEMENT

Promoting adolescent sexual and reproductive health and rights is part of the global agenda, mainly as reflected in the Sustainable Development Goals (SDGs) [99, 100]. The achievement of SDGs on health, education and gender equality depends partially on recognising and

improving the health of early adolescents [26]. Countries are committed to achieving international protocols on SRH and SDGs related to adolescent health (Goals 3,4 and 5). Still, more remains to be known about how policies address early adolescents' specific needs, especially in Rwanda.

Early adolescents must make informed decisions about their evolving SRH [101]. Informed decision-making depends on the extent to which the decision-makers are knowledgeable about SRH issues, including contraception, pregnancy, STIs and HIV [26]. Evidence suggests that sexuality education can improve the SRHR knowledge of older adolescents [68]. Furthermore, knowledge is a precursor for safe sex practice [102]. While SRHR knowledge and information are essential in SRH outcomes, adolescents often have limited access to SRHR information, especially in Rwanda [103]. Inappropriate knowledge and information about adolescent sexual and reproductive health (ASRH) can lead to poor SRH [22, 73]. In particular, sexual activity in adolescents aged under 15 years is associated with high rates of unplanned pregnancy, multiple sexual partners, and other forms of risky sexual behaviours [104]. Furthermore, El Gelany and Moussa [67] note that limited access to sexual and reproductive health information is associated with insufficient access to services.

Early adolescence is the most neglected period of life in terms of research [36]. Substantial research focuses more on older adolescents and youths (15-24 years) [64], and more attention needs to be paid to early adolescents (10-14 years) [3, 40, 96, 97]. The age groups of recruited study participants often overlap, with studies grouping adolescents with other youths. This makes finding information specific to early adolescence difficult.

Compared to older adolescents, early female adolescents face increased morbidity and mortality related to pregnancy [1]. Unfortunately, studies on adolescents' sexual experiences [27-29, 105, 106] concern older adolescents, emphasise penetrative sexual experience and disregard non-penetrative sexual experiences among early adolescents, and fail to link these experiences to early adolescents' gender and sexuality knowledge, belief and behaviours in general, and in sub-Saharan Africa in particular. Conversely, it is not well known if gender norms affect early adolescents' sexual experiences [11, 87, 91, 107].

Finally, like in other settings, the diversification of new media has resulted in more access to information among adolescents in sub-Saharan Africa [101]. Adolescents in Rwanda access multiple sources of SRHR information, but more evidence is needed on current and preferred sources and their influences on SRHR knowledge, beliefs, and behaviours of early adolescents.

Early adolescents' access to information, knowledge, beliefs, and behaviours has not been studied from their social context perspectives.

1.4 SIGNIFICANCE OF THE STUDY

It has become imperative for countries to achieve sustainable development goals, especially those related to promoting adolescent sexual and reproductive health, specifically among early adolescents. The current research provides an overview of how gender and sexuality policies in Rwanda address the specific sexual and reproductive health and rights needs of early adolescents. Addressing these needs is critical to achieving the international agenda reflected in the SDGs, especially those related to health (goal 3), education (goal 4) and gender equality (goal 5) [108, 109]. In addition, the study contributes to identifying early adolescents' needs regarding access to SRHR information, SRHR knowledge, beliefs, behaviours, sexual experiences and health outcomes. Intervening timeously in early adolescence can help to address the root causes of unsafe behaviours and prevent their negative consequences [3]. Early adolescence provides an excellent opportunity to address gender norms and link them to early adolescents' behaviours before they manifest [91, 110] in adolescence or later. This study seeks to understand the context of early adolescents' sexual and reproductive health, rights and experiences in Rwanda. As such, this study provides an understanding of the extent to which gender and sexuality policies and other national programmes in Rwanda converge to promote adolescent sexual health during early adolescence and seeks to discern the nature of sexuality education given to early adolescents in Rwanda by uncovering the focus of sexuality education, and the young adolescents' different sources of SRHR information.

Additionally, the study describes early adolescents' gender and sexuality-related knowledge, beliefs and behaviours and their implications on sexual experience and health outcomes. This study contributes to an understanding of the sexual experiences (both non-penetrative and penetrative experiences) of early adolescents in Rwanda. It links these experiences to early adolescents' gender and sexuality knowledge, beliefs and behaviours. Furthermore, this study provides data on early adolescents' available and preferred sources of SRHR information and knowledge, the justifications for these preferences, and how these sources contribute to promoting safe adolescent sexual health during early adolescence. Finally, the findings from this study may inform adolescent SRHR policy and interventions aiming to improve early adolescents' sexual and reproductive health and rights, including access to gender and sexuality information, SRHR knowledge, attitudes, behaviours, experiences and health outcomes.

1.5 RESEARCH QUESTION

The research question for this study is the following:

How does early adolescents' SRHR environment in Rwanda address their specific information needs in general, and how does their SRHR knowledge influence sexual behaviours, sexual experiences and health outcomes among this age group (12-14 years)?

1.6 OVERALL AIM AND OBJECTIVES

1.6.1 Study aim

This study aimed to assess how early adolescents' SRHR environment in Rwanda addresses their specific information needs in general and to explore the extent to which their SRHR knowledge influences sexual behaviours, sexual experiences and health outcomes among this age group (12-14 years).

1.6.2 Specific objectives

This study has the following specific objectives:

1. To assess the extent to which gender and sexuality policies address the specific SRHR information needs of early adolescents in Rwanda
2. Describe the social context, including personal, relationships and community factors, influencing early adolescents' gender and sexuality knowledge, beliefs and behaviours in Rwanda.
3. To analyse Sexual and Reproductive Health and Rights (SRHR) messages conveyed to early adolescents by different sources of information in Rwanda.
4. To describe early adolescents' knowledge, beliefs and behaviours related to gender and sexuality in the selected districts of Rwanda.
5. To determine the relationship between the early adolescents' sexuality and gender knowledge, beliefs and behaviours and their sexual experiences.
6. To determine the relationship between early adolescents' gender and sexuality knowledge, beliefs and behaviours and specific health outcomes (STIs, pregnancy) in the selected districts of Rwanda.
7. To determine the relationship between exposure to different sources of information and early adolescents' gender and sexuality knowledge, beliefs and behaviours in selected districts of Rwanda.

1.7 ORGANIZATION OF THE THESIS

This thesis is organised into three sections and 12 chapters. The first section (section A) comprises the introduction (Chapter 1), literature review (Chapter 2) and research methodology (Chapter 3). The second section (Section B) comprises chapters 4-10 related to the study results. The third section (Section C) comprises the integrated discussion (Chapter 11) and conclusion and recommendations (Chapter 12).

The first chapter provides an overview of the study, including the background, the problem statement, the significance of the study, the research questions, and the aim and objectives of the study. The second chapter comprises the literature review. In addition to defining the key terms related to this research, the chapter describes the context of adolescents' sexual and reproductive health and rights (SRHR), SRHR knowledge and attitudes, sexual behaviours and sexual experiences, the sources of SRHR information for older and younger adolescents, comprehensive sexuality education, and theoretical and conceptual framework of this research. The third chapter is dedicated to research methods used in the current research.

The fourth chapter discusses the extent to which gender and sexuality policies address the specific needs of early adolescents in Rwanda, specifically in terms of access to gender and sexuality information, SRHR knowledge, attitudes and sexual behaviours. This policy review used the policy triangle framework, which suggests focusing on four constituents of the health policy: context, content, process and actors of the policy. We describe the findings of the review based on these components. The fifth chapter focuses on the sexuality education stakeholders' perceived determinants of early adolescents' access to sexual and reproductive health and rights information in Rwanda. The sixth chapter focuses on the significant topics of gender and sexuality messages conveyed to early adolescents in Rwanda, taking a comprehensive sexuality education programme as a case. This chapter brings together the internationally recommended topics and those reflected in the competence-based curriculum for early adolescents introduced in Rwandan schools in 2016, as well as their alignment with international standards. The chapter also provides qualitative findings that support these topics and suggest further essential topics that are overlooked in the CSE of early adolescents.

The seventh chapter focuses on sexual and reproductive health knowledge and attitudes of in-school early adolescents in Rwanda, obtained using a cross-sectional survey. The chapter describes early adolescents' knowledge about sexuality, contraceptive methods, condoms, HIV/AIDS and STDs. The chapter also provides the findings on early adolescents' attitudes towards sexual norms and gender. The eighth chapter includes findings on early adolescents'

non-penetrative and penetrative sexual experiences and the factors associated with such sexual experiences. The ninth chapter focuses on the sexual behaviours of early adolescents and their health outcomes. It provides both quantitative and qualitative results on the influence of SRHR knowledge and beliefs on early adolescents' sexual health. The tenth chapter discusses the relationship between the sources of SRHR information for early adolescents and their knowledge, beliefs and behaviours in Rwanda. The chapter describes the primary and preferred sources of SRHR information and their linkage with SRHR knowledge and beliefs. In addition, qualitative findings help to explore how some sources might affect the reproductive health outcomes of early adolescents.

The eleventh chapter integrated the findings and discussed the strengths and limitations of this research. The twelfth chapter focused on the conclusion, recommendations for policy and practice, and recommendations for future research.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter provides an overview of the literature related to the current research. First, it takes the reader to the meaning of various key concepts used in the research. Next, it describes the global, regional and local context of adolescent sexual and reproductive health and rights, as well as what has been achieved so far on sustainable development goals indicators related to adolescent health. In addition, the chapter discusses various means of accessing SRHR information, including various sources of information. It gives a particular place to CSE as one of the interventions to promote adolescents' SRHR knowledge, beliefs and behaviours and to improve their health outcomes. The chapter focuses mainly on the content of CSE programmes: the approach used, the effects of CSE on adolescent SRHR, challenges encountered and CSE in Rwanda. Furthermore, the chapter explores studies on adolescents (including early adolescents) SRHR knowledge, attitudes, behaviours, sexual experience and health outcomes, the factors associated with sexual experiences, and the influences of gender on adolescent sexual health. The chapter also focuses on this PhD research's theoretical and conceptual frameworks and describes research gaps from the reviewed literature.

2.2 CONTEXT OF ADOLESCENT SEXUAL AND REPRODUCTIVE HEALTH AND RIGHTS

Policy and laws play a significant role in adolescent health and development and may be a protective factor or barrier to adolescents' protection, health and education [111]. The literature recognises a relationship between health policy and health and that health policy is essential in addressing major health problems [8] and ensuring and improving adolescent health [112]. Therefore, policy has a role in promoting adolescent SRHR, especially among early adolescents.

The International Conference on Population and Development (ICPD) held in Cairo in 1994 was a kick-off for promoting adolescent sexual and reproductive health and rights [113]. The programme of action (PoA) resulting from the ICPD emphasised improving adolescents' SRHR and well-being [113]. Since then, international commitment has grown to improve adolescents' health (10-19 years), including their SRHR [113]. The ICPD PoA urges governments and non-governmental organisations “to meet the special needs of adolescents and to establish

appropriate programmes to respond to those needs,” including education and counselling about “gender relations and equality, violence against adolescents, responsible sexual behaviours, responsible family planning practice, family life, reproductive health, sexually transmitted diseases, HIV infection and AIDS prevention”[23]. Furthermore, gender was recognised as a structural determinant of health-related inequalities [114].

Consensus was reached to place adolescent sexual and reproductive health and rights (ASRHR) on global, regional and local developmental agendas, and there have been many changes in adolescent lives since the ICPD [115]. For example, sexual and reproductive health and rights are reflected in the Sustainable Development Goal Target 3.7 and Target 5.6 [116]. Target 3.7 aims to ensure universal access to sexual and reproductive healthcare services, including family planning, information and education, and the integration of reproductive health into national strategies and programmes. Furthermore, SDG target 5.6 aims to ensure universal access to sexual and reproductive health and reproductive rights as agreed by the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences. Furthermore, several countries have enabling laws, policies and programmes for ASRHR [115].

The government of Rwanda considers various international and regional declarations and commitments and implements them through various national policies. Several policies were established to promote ASRHR, and these policies were informed by other international and regional commitments, as outlined in Table 2.1. However, more information is needed about how policies in Rwanda address the ASRHR needs of early adolescents regarding education and services.

Table 2. 1: International and regional declarations and policies informing gender and sexuality education policies in Rwanda

Policy	International and regional declarations and commitments
Adolescent Sexual Reproductive Health and Rights Policy 2011-2015	- Millennium development goals, MDGs - Africa Health Strategy (2007–2015). - Abuja Declaration. - International Covenant on Civil and Political Rights (ICCPR), - International Covenant on Economic, Social and Cultural Rights (ICESR) - Universal Declaration of Human Rights (UDHR), - Convention on the Elimination of all Forms of Discrimination against Women (CEDAW) - 1994 International Conference on Population and Development (ICPD) (importance of reproductive rights, especially for adolescents)
Girls’ Education Policy	- Convention on the Rights of the Child (CRC): ensuring that the right of all children to education is realised

	- Education for All - Millennium Development Goals (MDG): universal completion of primary school (UPC) and gender equality (in opportunities and outcomes) by 2015
Health sector policy	- MDGs - Abuja Declaration, - African Health Strategy (2007–2015), - Paris Declaration (2005), - Accra Agenda for Action (2008) - The Rio Political Declaration on Social Determinants of Health (October 2011).
National Family Planning and Adolescent Sexual and Reproductive Health (FPASRH) Strategic Plan (2018-2024)	- 1994 International Conference for Population and Development (ICPD) - Millennium Development Goals (MDGs) - Sustainable Development Goals (SDGs)
National Gender Policy	- Fourth World Conference on Women held in Beijing (China) in 1995 - International Conference on Population and Development (ICPD) in 1994 - East African Community - Beijing Platform of Action - Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), ratified in 1981 - Millennium Development Goals (MDGs): the third goal of MDGs is to achieve gender equality and to empower women - United Nations Security Council Resolution 1325 - Universal Declaration of Human Rights of 10 December 1948 - New Partnership for Africa's Development (NEPAD) - Common Market for Eastern and Southern Africa (COMESA)
National Reproductive Maternal, Newborn, Child and Adolescent Health (RMNCAH) Policy	- 1979 Convention on the Elimination of All Forms of Discrimination against Women (CEDAW); - 1990 Convention of the Rights of the Child; - 1994 Cairo International Conference on Population and Development (ICPD); - 1995 Beijing Fourth World Conference on Women (FWCW) Declaration and Platform for Action; - 2000 UN Millennium Development Goals (MDGs); - 2011 UN Commission on Information and Accountability for Women's and Children's Health; - 2012 Family Planning 2020 (FP2020); - 2015 UN Sustainable Development Goals (SDGs) - 1990 African Charter on the Rights and Welfare of the Child; - 1998 African Charter on Human and People's Rights (Banjul Charter); - 2003 Protocol to the African Charter on Human and People's Rights on the Rights of Women; - 2004 Declaration on Employment and Poverty Alleviation in Africa; - 2005 Continental Policy Framework on Sexual and Reproductive Health and Rights (SRHR); - 2006 Maputo Plan of Action for the Operationalization of Continental Policy Framework for Sexual and Reproductive Health and Rights 2007-2010; - 2007 Declaration on Health Systems Strengthening in Africa for Equity and Development; - 2009 Campaign for Accelerated Reduction of Maternal Mortality in Africa (CARMMA); - 2012 Resolution adopted by the 126th Inter-Parliamentary Union Assembly on Access to Health as a Basic Right and the Role of Parliaments in Addressing Key Challenges to Securing the Health of Women and

	Children; - East African Regional RMNCAH Policy 2015-2030; and - Africa 2063: The Africa we want (2015).
National School Health Policy	- International Millennium Development Goals (MDGs) - Education for All (EFA) - World Education Forum held in Dakar in 2000 - The Convention on the Rights of the Child, CRC, (1989) - African Charter on the Rights and Welfare of the Child, 1999, - Convention on Elimination of All Forms of Discrimination Against Women (CEDAW), 1981, - Convention on the Rights of Persons with Disabilities, 2006, and its Optional Protocol, 2008.
Fourth Health Sector Strategic Plan 2018-2024	- Africa Agenda 2063 - EAC Vision 2050
Family planning policy	- 1994 International Conference on Population and Development in Cairo

Rwanda has established various policies and laws to promote child and adolescent sexual and reproductive health, as depicted in Figure 2.1. The latest policy is the National Reproductive Maternal, Newborn, Child and Adolescent Health Policy, published in 2018.

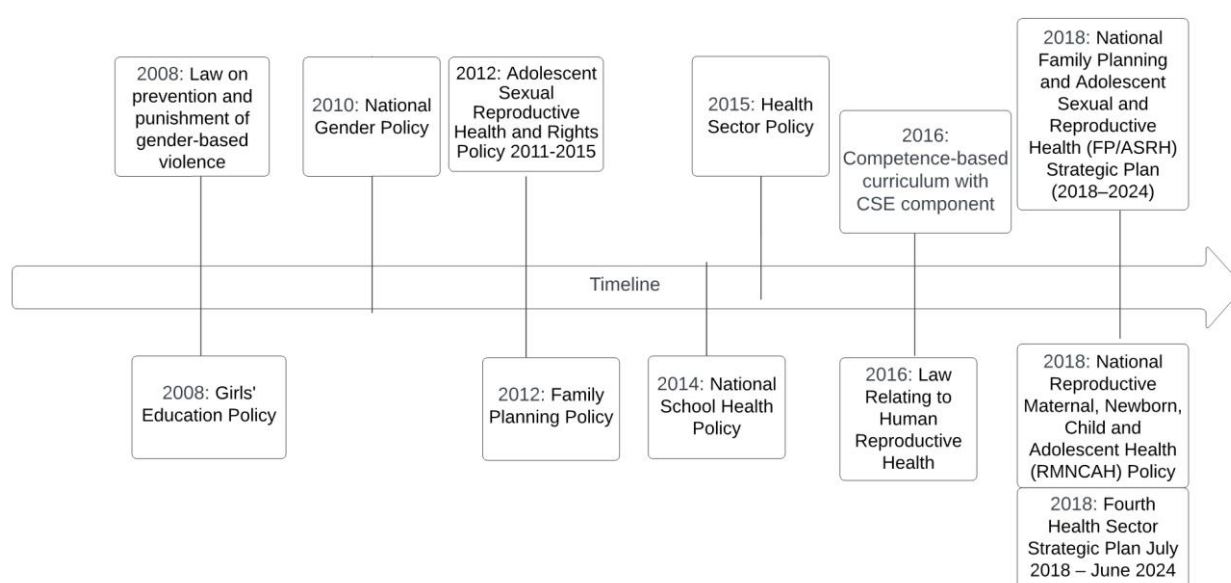


Figure 2. 1-Timeline for gender and sexuality policies for children and adolescents in Rwanda (2008-2024)

These policies enable early adolescents to access SRHR information through various sources.

2.3 PROGRESS MADE WITH SUSTAINABLE DEVELOPMENT GOALS ON ADOLESCENT HEALTH

Literature indicates that some progress has been made to promote adolescent health in line with sustainable development goals (SDGs). Guglielmi et al. indicate that there has been some progress for adolescents and youths with SDG indicators despite the lack of data for some countries and disaggregation by age and gender [117]. Furthermore, a systematic review found

that 35 of 248 SDGs indicators concern the period of adolescence (10-19 years) and 33 indicators (13%) call for data disaggregation for age [92]. Bhutta et al. note limited actions for countries to develop integrated strategies for reproductive, maternal, newborn and child health or inclusion of adolescent health within national plans [118].

The WHO's World Health Statistics Report 2024 indicates that there has been mixed progress in SDGs-related indicators. The report shows that none of the 53 indicators reviewed has been achieved, and none will be met if the current trend prevails. However, the report mentions that a good number of these indicators (42 out of 53) were heading towards the right direction globally and that the remaining indicators were moving in the wrong direction or could not be assessed due to limited data [119]. The report indicates that in 2023, there have been 12.7 million of births among adolescent girls aged 15-19 years and half a million births among those aged 10-14 years. Furthermore, the report highlights a slow or uneven decline in the adolescent birth rate per 1000 girls aged 15-19 years (SDG indicator 3.7.2) and those aged 10-14 years since 2000. In addition, the report indicates low progress in reducing lifetime intimate partner violence (IPV) among ever-partnered women aged 15 years and older (SDG indicator 5.2.1), and lifetime non-partner sexual violence (SDG indicator 5.2.2) among women aged 15 years and above [119].

A report focusing on 15 low- and middle-income countries in Asia, Middle East, North Africa and Sub-Saharan Africa [117] presents data on various selected SDGS indicators to illustrate the progress made. These indicators include the proportion of ever-partnered girls and women aged 15 years and older, intimate partner violence (IPV), child marriage rates, and female genital mutilation/cutting rates. The report indicates that intimate partner violence (IPV) trends are difficult to establish due to the lack of data. It shows that adolescent girls (15-19 years) were at higher risk of IPV than those aged 20-24 in Jordan, Ethiopia and Nepal. The report also points out that more than a third of women aged 20-24 years (35%) experienced IPV in the last year.

Concerning child marriage (marriage before 18 years), Bangladesh presents the highest rate of child marriage globally (59%) among women aged 20-24, of whom over one-third marry before the age of 15. This rate of child marriage is 40% in Nepal, where less than one in five get married by 15. This report also shows a correlation between child marriage prevalence and IPV, particularly in Ethiopia and Uganda. The report highlights that Rwanda presents a lower child marriage rate (7%) than neighbouring countries such as Uganda (34%) and Ethiopia (40%). Jordan (9.7%) and Palestine (15.3%) report high rates of child marriage. Data also indicate that

female genital mutilation/cutting is higher among Ethiopian girls aged 15-19 years (47%) than in Kenya (11%) and Tanzania (5%).

Regarding adolescent birth rates, Bangladesh reported a rate of 76/1000 among women aged 15-19 years in 2015-18, which is significantly higher than its neighbours, such as Sri Lanka, with 21/1000 in 2015 [117]. This rate has trended upward in sub-Saharan Africa, including Ethiopia (71/1000 in 2013 versus 80/1000 in 2014) and Tanzania (132/100 in 2014 and 139/1000 in 2016). Adolescent birth rates remain high in Uganda and Kenya, with 136/1000 in 2014 and 96/1000 in 2014, respectively [117]. The report indicates that these upward trends threaten girls' and young women's outcomes.

2.4 ACCESS TO SRHR INFORMATION FOR ADOLESCENTS

Literature highlights that adolescents have access to multiple sources of SRHR information, and the quality of this information may influence their knowledge, attitudes and behaviours [76]. In addition, Onyeonoro et al. [120] note that many young girls do not access reliable sources of information about sexuality and, therefore, cannot resist sex and have the skills to negotiate for safe sex.

2.4.1 Sources of SRHR information among early adolescents

The sources of SRHR information vary in different contexts. A qualitative review of parent-adolescent communication on adolescent sexual and reproductive health in sub-Saharan Africa indicates that adolescents access SRH information through various sources, including parents, schoolteachers and school sensitisation, peers, healthcare settings, relatives (grandmothers, uncles, and aunts), sisters, traditional ceremonies, radio and television [121]. Lagus et al. found that school-going adolescents (10-14 years) in Mpumalanga, South Africa, access SRHR information through sexuality education in schools and informal sources (household and sexual play) [122]. A qualitative study conducted by Kyilleh et al. in Ghana among in-school and out-of-school adolescents (10-19 years) found that peers, parents, teachers, nurses, radio and television were the primary sources of information on reproductive health [123]. The sources of SRH information among out-of-school adolescents aged 13-19 in Southwest Uganda included family, community and media [124]. This study found that trained community and media health educators should provide accurate information. In contrast, traditional sources such as paternal aunt should provide information on good relationships, negotiation of sex, and condom use. Furthermore, information about becoming a good adult should come from parents, grandparents, church and community leaders [124]. Furthermore, Nwagwu et al. found that, for

adolescents younger than 19 years in Nigeria, parents and teachers were the preferred sources of information for in-school adolescents. At the same time, friends and the internet were the most used sources for out-of-school adolescents [34]. This study also highlighted adolescents accessing SRH information at home [34]. On the other hand, Onyeonoro et al. found that among students aged 10-18 years in South East Nigeria, media and peers constituted the main sources of sexual information and that families and schools were not involved in delivering early sex education [120]. In contrast, mothers and same-sex friends were the leading and preferred sources of SRH information for Iranian adolescents aged 14-18, while other sources included books and the Internet. This study also showed that younger adolescents preferred receiving SRH information from their mothers, whereas older adolescents preferred their friends [78]. Lagus et al. found that parents, teachers, healthcare professionals, religious leaders, friends, and media were the perceived sources of SRH information of adolescents for parents of school-aged children (5-18 years) in Minnesota [125].

2.4.2 Sources of SRHR information among older adolescents

Among adolescents aged 16-19, Rajapaksa-Hewageegana et al. found that participants preferred health professionals as sources of SRHR information. Other sources in this study included doctors, parents, books/journals, teachers, friends, TV/radio, and siblings [126]. Research with participants aged 18 and above indicated the internet as the most accessed source of SRHR information in the United States of America [127]. Furthermore, Kennedy et al. found that the sources of SRHR information among adolescents aged 15-19 years in Vanuatu included those in the community (family, friends, peer educators, community awareness activities), health facilities (nurses), school setting (teachers), and media (printed materials, radio, television, movies, and internet) [128]. In this study, Kennedy et al. indicated that peer educators and health workers were the preferred sources of information for this age group [128]. Furthermore, a study of the sources of information on sexual and reproductive health in Kenyan adolescents aged 15-19 in Kibra found that healthcare settings, parents, non-governmental organisations, and the internet were the main sources of SRH information for this age group [129]. However, for adolescents with disabilities (15-19 years) in Ghana, school teachers and parents were the main sources of SRH information [130].

There is limited literature on the effects of various sources of SRHR information and SRHR knowledge, attitudes and behaviours. Bleakley et al. indicate that parental communication is associated with increased adolescent sexual behaviours because such communication often

takes place after adolescents have begun engaging in sexual activity [131]. In addition, Bleakley indicates that exposure to media might influence sexual activity, early sexual initiation and unplanned pregnancy [131]. AlQuaiz et al. found that parents, school, maids and media sources were significantly associated with poor sexual health knowledge among adolescents aged ≤ 15 years in school-girls of Riyadh-Saudi Arabia [132]. In addition, White et al. found that learning SRHR from television was associated with positive sex-related beliefs, perceptions and meanings, which, in return, were associated with more positive sexual communication [133]. Television viewing was also indicated as a risk factor for early sexual initiation among adolescents [134].

2.5 COMPREHENSIVE SEXUALITY EDUCATION TO IMPROVE ADOLESCENT SRHR

2.5.1 Introduction

Comprehensive sexuality education, or comprehensive sex education [135], is an intervention to address SRHR issues among young people [136]. The 1994 International Conference on Population and Development (ICPD) Programme of Action highlighted the role of Governments in promoting adolescent sexual and reproductive health and rights through delivering sexuality education [137, 138]. Comprehensive sexuality education (CSE) should be age-appropriate, culturally relevant, and scientifically accurate and enhance young people's decision-making and life skills in making informed choices about their sexuality [139]. Comprehensive Sexuality Education (CSE) is an important way to promote adolescent sexual and reproductive health and rights [109, 140, 141]. It becomes crucial during early adolescence (10-14 years), a stage of transition from childhood to older adolescence and adulthood, laying the ground for their future sexual and reproductive health (SRH), gendered attitudes, and behaviours [3, 142].

2.5.2 Content of CSE

There are variations in the content of CSE for young people. The content of CSE remains contested in many parts of the world due to variations in framing and notions of sexuality, fears related to disrupting identities and values of the communities and compromising children's innocence [140]. In addition, a literature review of CSE guidelines indicates no agreed-upon definition of the term "comprehensive" in the context of CSE [143]. Because of these varied understandings and fears about CSE, several sexuality education guidelines have been

developed [144-148]. These guidelines emanate from the Sexuality Information and Education Council of the United States (SIECUS) [147]; the World Health Organization Europe and Federal Centre for Health Education BZgA [146]; and UNESCO [145]. Of these guidelines, UNESCO's International Technical Guidance on Sexuality Education (ITGSE) offers many advantages because it has content for all learners' grades and provides an evidence-based framework for those interested in developing CSE programs [141, 149]. The ITGSE outlines eight key concepts as significant components of a CSE curriculum [141, 145]. These key concepts include (1) relationships; (2) values, rights, culture, and sexuality; (3) understanding gender; (4) violence and staying safe; (5) skills for health and wellbeing; (6) the human body and development; (7) sexuality and sexual behaviour; and (8) sexual and reproductive health [145]. Each of these key concepts highlights important topics of interest for sexuality education depending on the age of the learners (Table 2.2). The ITGSE organises CSE into four age groups: 5-8 years, 9-12 years, 12-15 years, and 15-18+ years [145].

Table 2. 2: UNESCO's overview of key concepts and topics on CSE

Key concepts	Topics	Key concepts	Topics
Key concept 1: Relationships	1.1 Families 1.2 Friendship, love and romantic relationships 1.3 Tolerance, inclusion and respect 1.4 Long-term commitments and parenting	Key concept 5: Skills for health and well-being	5.1 Norms and peer influence on sexual behaviours 5.2 Decision-making 5.3 Communication, refusal and negotiation skills 5.4 Media literacy and sexuality 5.5 Finding health and support
Key concept 2: Values, rights, culture and sexuality	2.1 Values and Sexuality 2.2 Human rights and sexuality 2.3 Culture, society and sexuality	Key concept 6: The human body and development	6.1 Sexual and reproductive anatomy and physiology 6.2 Reproduction 6.3 Puberty 6.4 Body image
Key concept 3: Understanding gender	3.1 The social construction of gender and gender norms 3.2 Gender equality, stereotypes and bias 3.3 Gender-based violence	Key concept 7: sexuality and sexual behaviour	7.1 Sex, sexuality, and sexual life cycle 7.2 Sexual behaviour and sexual response
Key concept 4: Violence and staying safe	4.1 Violence 4.2 Consent, violence and bodily integrity 4.3 Safe use of information and communication technologies (ICTs)	Key concept 8: Sexual and reproductive health	8.1 Pregnancy and Pregnancy Prevention 8.2 HIV and AIDS stigma, care, Treatment and support 8.3 Understanding, recognising and reducing the risk of STIs, including HIV

Typical content for the extant CSE guidelines are, but are not limited to, the human body and development; sexual and reproductive health and rights; values, culture, and sexuality; relationships; gender; and diversity [150, 151]. In sub-Saharan Africa, some topics conflict with

local gender norms and cultural and religious beliefs and thus are rarely discussed. These topics include gender inequality, power dynamics, abortion, homosexuality, and masturbation [150]

There are relatively few studies evaluating sexuality education programs [152], especially those about the content of CSE for early adolescents. A review of the curriculum in East and Southern Africa highlighted the gaps in the curriculum content, such as information about condoms, contraception, SRH topics, and gender [137, 138]. Haberland and Rogow [137] noted that effective CSE should consider a gender and rights perspective. While measuring the quality of sex education implementation in low- and middle-income countries, a study found that CSE focused more on contraception and unintended pregnancy than other topics and more on factual knowledge than skill-based topics [153].

2.5.3 Approaches to sexuality education

Sexuality education in Sub-Saharan Africa is delivered commonly in schools, youth-friendly health facilities and youth centres by teachers, healthcare providers, or trained peers [150]. The teaching of sexuality uses various approaches that are not mutually exclusive, including faith- and culture-based, public health and rights-based approaches [150]. Faith- and culture-based approaches focus on cultural and religious moral views about sexuality and aim to prevent adolescents and young people from engaging in premarital or extramarital sexual intercourse [150]. Driven by public health concerns, public health approaches aim to equip adolescents and young people with the knowledge and skills they need to make informed choices. These approaches focus on protecting them from unintended pregnancy and sexually transmitted diseases through contraceptive methods while also fostering the development of interpersonal and communication skills that will empower them to pursue their life goals [150]. The rights-based approach emphasises SRHR issues such as gender norms, diversity, sexual expression and pleasure, sexual relations and violence, relationships and power, identity formation, and broader social and cultural messages [150, 154]. This rights-based approach holds that all adolescents have the right to sexual and reproductive health information, self-determination and civil engagement [154]. Other approaches to sexuality education include abstinence-only or abstinence-only-until-marriage education and comprehensive sexuality education [138]. These approaches support complete refraining of sexual activity outside of wedlock. This approach emphasises the notions of virginity and chastity and faithful monogamous relationships in the context of marriage [138]. This approach is against contraception in sexuality education. It advocates that SRHR information compromises abstinence-only messages. Advocates of this

approach believe that sexuality education encourages immoral and safe sexual behaviours and increases the rate of sexually transmitted diseases and unwanted pregnancy [138]. Implementers of this approach instil fear, shame and guilt about sexual activity, and this approach is welcomed by religious and conservative groups [138].

In contrast to the abstinence-only approach, comprehensive sexuality education (CSE) includes a range of strategies for contraception and highlights the importance of safe sexual behaviours [138]. Research supports that CSE does not result in earlier sexual debut or risky sexual behaviours in contrast to traditional beliefs, and most CSE programmes yield positive effects such as increased condom use and reduced early pregnancies [138]. Furthermore, CSE leads to greater sexual and reproductive health knowledge and increases SRH risk perception and the intention to reduce sexual intercourse [155]. CSE programs have contributed to decreasing adolescent pregnancy and delaying initiation into sex [156].

2.5.4 Effects of CSE on adolescents' health

Comprehensive sexuality education (CSE) positively impacts sexual knowledge, attitudes, communication, and sexual behaviours among adolescents [139, 157]. CSE is a powerful tool to ensure adolescents access the SRH information they need to make healthy and informed SRHR choices [158]. In this rational perspective, sexuality education enables adolescents to discuss openly about sex, know about scientific facts, and have social skills to use this knowledge to resist peer pressure [158]. A study among early adolescents indicates that CSE programs improve SRH knowledge and increase their perceived SRH risks and intention to delay sexual intercourse [155]. Other CSE programs have demonstrated the ability to decrease teen pregnancy and delay initiation into sex [156].

Furthermore, a systematic review and meta-analysis of CSE programs in low- and middle-income countries found that CSE increases sexual health knowledge, sexual health practices such as condom use, refusing sex, reduced number of sexual partners, as well as a lower number of first sexual initiation [159]. For example, 90% of students in Guatemala report that they benefited from CSE [160]. In addition, Kemigisha et al. indicate that systematic reviews and randomised clinical trials show that CSE is associated with improved health outcomes such as delayed sexual debut, decreased frequency of sex, reduced number of sexual partners, reduced sexual risk-taking and increased use of condoms and contraceptives [161].

There is evidence that adolescents benefit from sexuality education programmes in many ways, primarily when such programmes are well implemented [162]. For example, a sample of students from three departments in Guatemala indicated that 90% of students reported benefiting personally from CSE in 2015 [160]. Evidence also suggests that sexuality education programmes improved young people's SRHR knowledge, attitude and behaviour in Nigeria [163, 164], Ethiopia [165] and Korea [166]. Similarly, a systematic review and meta-analysis conducted in low- and middle-income countries found that CSE was associated with safer sexual health practices. These practices increased condom use, refusal of unwanted sex, a decrease in the number of sexual partners and delayed sexual initiation [159]. While examining the effects of school sexuality education programmes on adolescents' sexual knowledge, Song et al. [167] concluded that sexuality education positively affects overall sexual knowledge. Specifically, CSE positively impacts sexual knowledge, attitudes, communication, and sexual behaviours among adolescents [139, 157]. CSE is an effective tool to ensure adolescents access the SRH information they need to make healthy and informed Sexual and Reproductive Health and Rights (SRHR) choices. It enables adolescents to discuss sex, know scientific facts, and have social skills to use this knowledge to resist peer pressure [158]. In addition, CSE improves the perception of SRH risks and knowledge of early adolescents [155], delays sex initiation and decreases adolescent pregnancy [156].

Conversely, certain research indicates that sexuality education can catalyse the initiation of sexual activity [168]. However, this is not a commonly held belief among CSE practitioners and researchers.

Other studies indicate that CSE programmes had limited or no effects on adolescents' sexual behaviours. Woo et al. recognise that some CSE programmes did not have benefits [169], and in some other studies, CSE programmes did not significantly affect adolescents' sexual knowledge, attitudes, and behaviours. For example, Kemigisha et al. found that CSE was not associated with significant changes in self-esteem, body image and gender equitable norms among young adolescents in rural Uganda [155]. In addition, sex education programmes focusing on abstinence did not have specific effects on sexual health behaviours and outcomes among young people aged 15-24 years [170].

Similarly, the majority of abstinence programmes did not significantly contribute to delaying sexual initiation in a study conducted by Kirby et al. [171]. CSE programmes did not positively affect delaying intercourse or using contraceptive methods (e.g. condoms) in Kenya and Thailand [157]. Furthermore, CSE did not affect the high prevalence of HIV in 10 Eastern and

Southern African countries [172]. Finally, delivering sexual health information to learners in Kwazulu-Natal did not alter their behaviour [173].

2.5.5 Challenges in the implementation of CSE programmes

Implementing comprehensive sex education in low- and middle-income countries faces many challenges, including the program-planning and curriculum-implementation ones [174]. Challenges related to the program's planning include insufficient and piecemeal funding, lack of coordination, and inadequate monitoring and evaluation systems [174]. Regarding implementation, CSE faces challenges such as inadequate weight when integrated into existing subjects, limited adaptation of the curricula to the local context, and limited involvement of stakeholders [174]. Other studies have indicated that the success of CSE programs depends on multiple factors related to implementation, culture, tradition, and funding [172, 174]. In addition, Woo et al. indicate that the factors associated with delivering a comprehensive curriculum include teaching in a public school, receiving formal training in sex education, and having contact with a student who became pregnant. The implementation of CSE in school is influenced by curricular characteristics, including priorities and constraints on time and resources; teacher-related variables such as qualifications, experience and comfort; and local community factors such as religious and political beliefs [175]

Studies suggest that implementing Comprehensive Sexuality Education (CSE) programs may not be universally optimal, with content varying significantly across different regions worldwide. For instance, in Sub-Saharan Africa, religious communities often exclude certain CSE topics, such as masturbation, abortion, and sexual orientation, due to conflicts with their core beliefs [150]. In addition, some communities resist teaching about gender equality, fearing the disruption of the patriarchal system [150]. A review of the CSE curriculum in East and Southern Africa revealed gaps in information about condoms, contraception and other SRH topics. Attention to gender content was weak or contradictory [137, 138]. Haberland and Rogow [137] noted that effective CSE should engage a gender and rights perspective. A study of the quality of sexuality education implementation in low- and middle-income countries found that CSE focused more on contraception and unintended pregnancy than other topics and emphasised more factual knowledge than skill-based topics [153].

2.5.6 CSE in Rwanda

The Government of Rwanda is a signatory of international and regional declarations on sexual and reproductive health and rights [176]. Rwanda is dedicated to tackling all matters concerning adolescents' sexual and reproductive health and rights, such as providing sexuality education for young adolescents. In addition, the National School Health Policy recognises sexuality, sexual and reproductive health, HIV and STIs, violence, and substance abuse as important issues among schoolchildren and adolescents. According to this policy, such issues must be addressed in the school curriculum [176, 177].

In 2016, the Rwanda Education Board (REB) introduced the competence-based curriculum integrating CSE at the basic education level [176, 178] to equip young people, including early adolescents, with knowledge, skills, and values that allow them to decide responsibly “about their sexual and social relationships, explain and clarify feelings, values, and attitudes, and promote and sustain risk-reducing behaviours” [178]. The CSE was introduced because only a tiny proportion of Rwandan learners received information about their transition from childhood to adolescence and adulthood and healthy sexual lives [179]. The Rwandan curriculum framework specifies that a competence-based curriculum aims to improve the learners’ experience by focusing more on their competence than their knowledge [178]. Competence is the ability to combine “knowledge, skills, attitudes, values and behaviour to accomplish a particular task” [179]. One thousand five hundred and eight teachers and other education stakeholders were trained on key features of this curriculum integrating CSE, and a teacher’s guide on CSE for secondary schools was published in 2018 [180].

The competence-based curriculum indicates that CSE is a cross-cutting issue taught across designated subjects [178]. Cross-cutting issues have connections with different subject areas and are essential to learn about. They are not confined to one subject and are integrated across years and cycles [178]. Rwanda also delivers CSE in extracurricular programs such as clubs to reinforce sex education delivered in classrooms [181].

Since the introduction of this curriculum into schools, research has yet to be conducted to assess the major areas addressed by the curriculum, mainly for early adolescents, to understand the focus of CSE and address potential gaps for this age group. In addition, there needs to be more evidence on how the Rwandan competence-based curriculum integrates the ITGSE recommendations.

2.5.7 Dissemination of SRHR in older adolescents (15-19 years) in Rwanda

According to the Rwanda curriculum framework, older adolescents (15-19 years) are expected to be in the education system's lower and upper secondary education levels [182]. The competence-based curriculum was introduced in 2016 with a component focusing on comprehensive sexuality education [182]. Therefore, older adolescents learn about SRHR mainly in their secondary school setting. Rwanda Education Board (REB) provided teachers with a reference book for teaching comprehensive sexuality education [180]. The content of this book is highly informed by the content suggested in the International Technical Guidance on Sexuality Education (ITGSE) [145, 180]. SRHR is also disseminated in health centres. The Government of Rwanda is committed to promoting adolescent sexual and reproductive health through youth corners and youth-friendly services [183, 184]. The core youth-friendly services include the provision of information and counselling on ASRHR, contraception and family planning; facilitating access to family planning methods, antenatal care, skilled attendance at delivery, and post-natal care (PNC); confidential HIV counselling and testing; information and counselling, and vaccination of human papillomavirus; prevention and management of gender-based violence; post-abortion care; pre-nuptial consultation; and life skills education. Rwanda has also established the Isange One-Stop Centres since 2010 to prevent sexual and gender-based violence [184].

A study of youth corners and youth-friendly services in seven districts of Rwanda indicated that between 64% and 95% of health centres surveyed had youth corners. This study also highlighted that 99% of health centres had an adolescent sexual and reproductive health focal person. However, 89% of youth corners have a specific consultation room, with only 25% having a separate waiting room. The study further indicated that only 23% of healthcare providers use guidelines for information and counselling, and 67% of these healthcare providers were not aware of the guidelines. Only 17% of healthcare providers reported training in data collection and analysis. The study also found that only 4% had visited the youth corner over the past 12 months, while 42% reported receiving information and counselling in schools, clubs or community meetings. According to this study, the main barriers to accessing youth corners and youth-friendly services included fear of being stigmatised, long waiting time, lack of convenient time to seek ASRHR services, lack of staff devoted to ASRHR services, lack of space for confidentiality, and poor parent involvement [183]. Additional individual barriers to SRHR services include lack of knowledge; culture, beliefs and religion, lack of money to buy contraceptives, and limited SRHR services accessibility [184].

The UN agencies such as the UNFPA provide an information booklet for young people (10-19 years), peer educators and youth counsellors [185]. UNESCO is also actively involved in training peer educators on essential SRHR knowledge, adolescent pregnancy, HIV prevention, consent and gender-based violence [186]. In addition, through the program called “Our rights, Our lives, Our future”, UNESCO supports countries in delivering comprehensive sexuality education for adolescents and young people in Sub-Saharan Africa [187].

Non-government organisations (NGOs), such as Haguruka and Health Development Initiative (HDI), also are involved in training adolescents about SRHR [188, 189]. For example, HDI provides training to empower adolescents and young people on topics such as adolescent sexual and reproductive health and rights (ASRHR), access to safe abortion, family planning and fertility awareness, HIV prevention and treatment, gender equality [189]. HDI also supports the training of in-service healthcare providers on SRHR, sensitisation on SRHR laws and policies, values clarification training, and training on the provision of stigma-free healthcare services [189].

Other sources providing ASRHR information include media, parents, relatives, peers, anti-HIV clubs, community health workers, radio, and religious leaders [184].

2.6 SEXUAL AND REPRODUCTIVE HEALTH AND RIGHTS KNOWLEDGE AND ATTITUDES

This section reviews how sexual and reproductive health and rights (SRHR) knowledge and attitudes have been measured in research. A review of the literature on adolescents' sexual and reproductive health and rights knowledge indicates that SRHR knowledge has been measured differently in different contexts. It also highlights that SRHR varies across various age groups of adolescents.

The lack of sexual and reproductive health information, knowledge and misinformation is common among young people, including this age group [70, 190]. Early adolescents are unaware of their developmental changes and lack adequate coping knowledge, skills, and cognitive readiness [42, 190, 191]. Maternal mortality is the leading cause of death among female adolescents, and HIV/AIDS is the fourth leading cause of death among adolescent boys in sub-Saharan Africa. Such poor health outcomes are preventable through improving adolescent sexual and reproductive health and rights (SRHR) knowledge [192].

SRHR knowledge plays a crucial role during early adolescence. Many early adolescents have not had sexual intercourse, and this knowledge will be needed to make informed and

responsible decisions when they initiate sexual activity [64]. Still, the majority of them lack adequate knowledge to foster such decisions [172]. SRHR knowledge has a vital role in people's sexual behaviour [193, 194] and allows women to make informed decisions [195]. In addition, knowledge is a precursor to behaviour change [196]. The knowledge of contraception is a determinant of contraceptive usage [197], and adverse sexual health outcomes and pregnancy may be associated with inaccurate health knowledge [194]. Furthermore, inadequate knowledge and information about protective behaviours are associated with risky sexual behaviours [198]. Basic SRHR knowledge reflects the level to which early adolescents can make informed decisions about contraception, pregnancy, and the prevention of HIV and other sexually transmitted infections [26]. Despite the role of SRHR knowledge in improving sexual health, there is little evidence of SRHR knowledge of early adolescents and their sexual experience.

Studies on SRHR knowledge and attitudes of early adolescents indicate low overall SRHR knowledge with discrepancies between boys and girls. On this note, in a study conducted by Kågesten et al. among early adolescents (10-14 years) in Kenya, the overall SRHR knowledge was low but higher among boys than girls [199]. Likewise, Magadi et al. found lower HIV/AIDS knowledge among adolescents aged 10-19 years in Western Kenya [102]. Woog and Kågesten indicate in their review of literature that, in four sub-Saharan countries (Burkina Faso, Ghana, Malawi and Uganda), early adolescents (10-14 years) have high awareness of HIV/AIDS but little in-depth knowledge about these topics [26]. This review also highlighted low levels of SRH knowledge among early adolescent girls (12-14 years) in Iran [26]. The study conducted by Finlay et al. among 10-19-year-old adolescents from eight sites in sub-Saharan Africa found that they lack knowledge about menstruation and sexually transmitted infections (STIs), specifically among early adolescents (10-14 years) [192]. This study indicated, however, that knowledge about HIV was high [192]. Bergstrom et al. conducted a study involving early adolescents (11-19 years) [193]. This study highlighted that general knowledge about SRH was moderate, but participants exhibited inadequate knowledge about HIV transmission and contraceptive methods [193]. A study conducted by Titiloye et al. in Nigeria concluded that adolescents (10-19 years) had good knowledge of SRHR, but practice and quality of communication were poor [200]. Kassa et al. found that among 426 young people (10-24 years) with disabilities, 64% were aware of SRH services, 77.9% had never had discussions about SRH topics, 96.7% had heard about HIV, and 88% had poor knowledge about HIV prevention [201]. In addition, this study found a low perception of getting infected, and a

small proportion of participants (21.6%) indicated being at risk of acquiring HIV. A systematic review conducted by Farih et al. for the Middle East and Northern Africa found a general lack of SRH knowledge and the highest knowledge reported on HIV [202]. Another study with early adolescents (12-14 years) in four countries (Burkina Faso, Ghana, Malawi, and Uganda) indicated little in-depth knowledge about pregnancy and HIV prevention [64]. In addition, Rose et al. found little SRH knowledge among 50 pregnant adolescent girls (11-19 years) attending Georgetown Public Hospital in Guyana [203].

Various SRHR knowledge and attitudes studies were also conducted among older adolescents (15 years and above). Rajapaska-Hewageegana et al. found that less than one per cent of school-going adolescents (16-19 years) in Sri Lanka had satisfactory knowledge of SRH [126]. Similarly, a study conducted by Lim et al. among 310 adolescent female sex workers (15-20 years) in China found a low level of SRH knowledge, and only 39% had heard of any long-acting reversible contraception methods (implant, injection, intra-uterine devices) [204]. Mohammadi et al. found that there was a lack of knowledge about STIs and contraceptive methods, with misconceptions about condoms, STIs and reproductive physiology among 1,385 males from Tehran, Iran [205]. Saraçoğlu et al. found, among 1,314 university students in Turkey, that knowledge and attitudes about the vital consequences of STIs were not sufficient and that HIV was the most well-known STI [206]. Similarly, another study involving 1,196 university students (15 years and above) found low contraceptive knowledge, insufficient knowledge sources, and unfavourable sexual attitudes [207]. Furthermore, Mbizvo et al. conducted a study that indicated low knowledge of family planning at baseline among pupils [208]. Similar findings were obtained by Lyu et al., whereby the mean sexual knowledge score was 6.2 out of 12 among undergraduates aged 15-24 years from nine universities in China [209]. A study of SRHR knowledge among males (18-25 years) seeking services in a U.S. city indicated a lack of SRH knowledge [53]. Inadequate sexual knowledge and misconceptions about sexuality were also reported in a study conducted by Mukherjee et al. among 952 students aged 18 years and above in Tamil Nadu, India [210]. In addition, a low proportion of 279 learners aged 18+ years in northern KwaZulu Natal province (28.3%) indicated a good or excellent level of basic SRH [211]. Similarly, Masood and Alsonini found a low level of knowledge about SRH services and family planning methods among young adults ages 15 years and above in Yemen [212]. In contrast, Zhao et al. found high sexual knowledge and positive attitudes toward premarital sex and homosexuality among 472 students (17-30 years) from a Chinese medical college [213].

In a review of 35 studies on sexual knowledge, attitudes and behaviours of early adolescents (10-15 years) in South Korea, Hong et al. indicated that the factors associated with SRHR knowledge, attitudes and behaviours could be categorised in macrosystem (religious beliefs and media influences), exosystem (parents' employment), microsystem (family and school environment), individual (alcohol, tobacco, drug use; age, grade, and biological sex) levels, Finlay et al. found a correlation between knowledge of menstruation and older age, female sex adolescents, and being in school, while being in school and older age were positive correlates of STI knowledge [192]. Bergstrom et al. found that being single and female are negative determinants of SRH knowledge [193]. Lou et al. found that mass media was influential on sex-related knowledge, attitudes, and behaviours of unmarried Asian (Shanghai, Hanoi and Taipei) adolescents and youths (15-24 years) [214]. Mesele et al. found that good knowledge about risky sex was associated with being in an urban area [215]. Mukherjee et al. found that high sexual knowledge among 952 college students in India was associated with age, male gender, rural background, non-science options, and being in postgraduate courses [210]. This study also found that nonconservative attitudes were associated with older age, male gender, being in non-science disciplines, discomfort with the family environment and religious background [210]. Furthermore, Li et al. found, among Chinese college students (15-25 years), that those who declared receiving sex education reported higher SRH knowledge than those who had not received sex education [216].

2.7. GENDER INFLUENCES ON ADOLESCENT SEXUAL HEALTH

Gender is a structural determinant of inequality in health. It becomes crucial during the early adolescent period as the gender divide emerges with its consequences, exacerbating during late adolescence and adulthood [114]. The patriarchal system works as an essential force that results in different socialisation processes and that promotes boys' and girls' health exposures, behaviours, and outcomes, creating different social contexts for boys and girls [85, 114]. Gender socialisation intensifies during early adolescence [217] and plays a vital role in adolescent sexual socialisation [21]. Gender plays a significant role in the health behaviours of young people in developing countries, particularly as it relates to sexual intercourse [218]. For example, Asian men and women have different gender roles, and men are dominant, authoritarian and superior in all matters [198]. This creates a clear division of labour between men and women, whereby women care for the family's needs and men get involved in paid work outside of the home [198]. This cultural expectation about women's inequality towards men and their submissiveness instils men with more powers and control over the type and

frequency of sexual behaviours, limits opportunities for negotiating safe sexual behaviours with their partners and puts women at risk for STIs [198]. Adolescents grow up in an environment of unequal gender roles where adolescent girls are reluctant to discuss reproductive health with their parents [198]. Furthermore, results from the Global Early Adolescent Study show that, during early adolescence, boys and girls follow different pathways of socialisation and begin learning how to dress and behave, as well as different gender roles to play [85]. Gender norms are commonly reflected in personal gender attitudes [11].

2.8 ADOLESCENT SEXUAL BEHAVIOURS, EXPERIENCES AND HEALTH OUTCOMES

2.8.1 Sexual experience

2.8.1.1 Conceptualization of sexual experience

This section provides an overview of how literature conceptualises sexual experience, including non-penetrative and penetrative. Most studies focus on vaginal sex, and hardly few studies discuss non-vaginal sexual behaviours [42].

Literature categorises sexual experience in different ways, mainly in non-coital (penetrative) and coital (penetrative) sexual experiences [26, 205]. According to literature, non-coital sexual experience consists of an array of sexual activities, including holding hands, hugging or cuddling, kissing, foreplay or heavy petting, spending time together without adults around, and fondling or touching private parts [24, 26]. In this regard, fondling is defined as touching someone's private parts, breasts or other parts of the body sexually [24, 64]. While measuring sexual behaviours among early adolescents, Bankole et al. focused on participants' awareness of kissing, caressing, and sexual intercourse [64]. Mohammadi et al. assessed sexual experience as non-penetrative (hugging, kissing and touching) and penetrative sex activity [205].

On the other hand, coital or penetrative sexual experience or sexual intercourse has been measured differently in literature. Sexual experience was conceptualised as a composite variable consisting of lifetime involvement in oral and vaginal sex [24, 28], with oral sex as 'mouth on genitals or private parts' and vaginal sex as 'penis in vagina' [24]. In their study, Bersamin et al. define oral sex as putting or receiving the mouth or tongue on the genitals [219]. Potter et al. defined sexual experience as ever having had vaginal sex [220]. Ragsdale et al. also categorised sexual experience into oral and vaginal sex when measuring sexual intercourse (when a boy inserts his penis into the girl's vagina) [221]. Sexual experience was also measured

as a lifetime engagement in sexual intercourse by Gambadauro et al. [105] and Santelli et al. [222]. Lefkowitz et al. focused on penetrative sex by asking participants about their ever having penetrative sex (penis penetrating the vagina or anus) [223]. Likewise, other research defined sexual intercourse as the insertion of the penis in the vagina [64, 224], which Bersamin et al. called vaginal intercourse [219]. Lifetime involvement is preferred over past-year involvement to account for low-frequency behaviours, especially among early adolescents [24]. Donatello et al. measured sexual experiences by focusing on sexual behaviours consisting of lifetime engagement in consensual oral or vaginal or anal intercourse (insertion of penis in the partner's anus, that is, their butt hole) [27]. This insertion of the penis into the anus is referred to as anal intercourse by Bersamin et al. [219]. Sexual experience consisted, therefore, of oral sex, vaginal sex, anal sex, or any combination thereof [27]. A similar categorisation of sexual experience was used by other studies, including one conducted by Kahn and Halpern [29]. Bersamin et al. measured sexual activity as a lifetime experience of genital touching, oral sex, vaginal and anal intercourse [219]. On the other hand, researchers such as Jaruseviciene et al. and de Meyer et al. indicated that sexual activity consisted of participants reporting ever having sexual intercourse [84, 225].

2.8.1.2 Prevalence of sexual experience among adolescents

Concerning non-coital experience, Woog and Kagesten indicate in their review that one-third of early adolescents in Uganda and Malawi and nearly one in ten early adolescents in Burkina Faso and Ghana have experienced some form of non-coital activity [26]. In this review, kissing was estimated at 2-9%, while fondling was 2-18% among those who reported they had never had sexual intercourse. In Kenya, every engagement in non-coital activities (including kissing, fondling, foreplay or heavy petting) among those without sexual intercourse was 10% for females and 12% for males (12-19 years). The same review indicates that, in Taiwan, 14% experience kissing, while 3% of girls who had not had intercourse (12-14 years) reported fondling. In Cape Town, South Africa, kissing and light petting was the non-coital activities most commonly experienced by 12-15 years who reported vaginal intercourse in 2013 [26]. Bankole et al. found that, among early adolescents (12-14 years) from Burkina Faso, Ghana, Malawi, and Uganda, ever kissing for females ranged from 2% in Burkina Faso to 9% in Uganda [64]. In the same study, fondling among girls ranged from 2% in Burkina Faso to 18% in Uganda [64].

Engagement in coital sexual intercourse was reported in various studies. The review of studies conducted by Woog and Kagesten indicated the highest estimates of ever having sexual

intercourse among adolescents (10-18 years) from nine Caribbean countries, with 22% among those aged ≤ 12 and 35% for those aged 13-15 years. In contrast, the review shows that ever having had sexual intercourse was estimated at 3% among early adolescents (12-14) years in Nairobi slums. Similarly, 2% of girls (11-14 years) reported ever having sexual intercourse in Kibera slum in Nairobi, Kenya. According to the review, the proportion of sexual intercourse was 4% among early adolescents aged 10-14 years in Senegal, 7% among those aged 12-14 years in urban Ghana, 9% among those aged 10-14 years in Tanzania, and 10% among 10-14-year-old adolescents in Zambia, while 0.5% of girls (10-14 years) in Taiwan reported ever having sexual intercourse [26]. In a study involving American Indian and Alaska Native youth (12-14 years), Markam et al. found that 6.5% were sexually active [28]. Furthermore, Maina et al. found that 13% of girls reported sexual experience [226]. Bankole et al. found that the proportion of ever having had sexual intercourse among female adolescents (12-14 years) in four countries (Burkina Faso, Ghana, Malawi, and Uganda) varied between 2% in Ghana and 8% in Uganda (highest) [64]. In contrast, Bankole et al. indicated that this proportion among early male adolescents was estimated between 1% in Ghana, 5.8% in Burkina Faso, 15% in Uganda, and 19% in Malawi [64]. Furthermore, the prevalence of early sexual initiation among early adolescents in Brazil was 7% for girls and 18% for boys [227]. Lindberg et al. found that, in the United States of America, the prevalence of sexual initiation among male adolescents before the age of 13 was nationally 7.6% [228].

A study with students aged 13-17 years from the Global School-based Students Health Survey (GSHS) in Indonesia found that 5.3% reported ever having had sexual intercourse [229]. Furthermore, Shayo et al. indicated using GSHS data for five countries in Sub-Saharan Africa that 43.5% of adolescents had ever had sexual intercourse [230]. Furthermore, Donatello et al. found that the prevalence of vaginal sex was 19%, and that of anal sex was 16%, while anal sex was estimated at 6% among ninth-grade students [27]. Likewise, Ragsdale et al. found a similar proportion of sexual activity (15.9%) among California adolescents [221]. A slightly higher proportion of sexual experience (19.2%) was reported by Gambadauro et al. among European adolescents [105]. Olaleye et al. found, however, that the proportion of sexual intercourse was higher among the street-involved young people aged 10-24 years in Nigeria, where it was found to be 64.3% [231].

Woog and Kagesten also indicate that data from the Global School-based Students Health Survey (GSHS) for 13-15 students show the highest levels of ever having sexual intercourse in Latin America (ranging from 13% in Guatemala and 47% in Dominica), followed by Africa

(from 10% in Harare, Zimbabwe and 38% in Zambia), and western Pacific region (4% in Vietnam -32% in Nauru). The highest proportion of having had sexual intercourse was reported in Samoa (56%) in 2011, with 69% of males and 45% of females [26]. Similarly, Kushal et al. indicated that the prevalence of having sexual initiation before the age of 15 was highest in the Americas (18.4%) and the lowest in the Southeast Asia region (5.3%) [232].

There were gender differences in the proportions of early adolescents having ever had sexual intercourse, with boys reporting higher levels of sexual intercourse than girls. Woog and Kågesten's review of studies indicated that, in Burkina Faso, ever having sexual intercourse was higher for males than for females (6% versus 2%, respectively). The review highlights that similar trends in ever having sexual intercourse were also observed in Malawi (19% versus 3%), Uganda (15% versus 8%), and Ghana (2% versus 1%), where this difference was not significant. Furthermore, high levels of ever having sexual intercourse among male students (12-15 years) were reported to be 30% against 9% for female students in Cape Town, South Africa. Equally, more male than female students reported experience of oral (14% versus 4%) and anal (11% versus 1%) sex in Cape Town, as indicated in this review of studies [26]. Using data from the GSHS, Woog and Kågesten show that these gender differences in ever having sexual intercourse persist in African countries. They indicate that the proportion of ever having sexual intercourse varies between 18% (in Harare, Zimbabwe) and 45% (in Kenya and Zambia) for male students aged 13-15 years, while it ranges from 4% in Harare, Zimbabwe, to 29% in Zambia for female from this age group [26]. Furthermore, Magadi et al. found that among 523 adolescents (10-19 years) in western Kenya, higher sexual activity (ever had sex, unprotected last sex) was prevalent among males. Data from the GSHS from 50 countries showed that, of the 14.2% who reported having sexual intercourse before the age of 15, the proportion of boys (19.7%) was higher than that of girls (8.9%) [232] (Table 2.3).

Table 2. 3: Prevalence of penetrative sexual experience among early adolescents from various studies

Authors	Study sample	Overall prevalence	Prevalence among males	Prevalence among females
Woog and Kagesten [26]	Very young adolescents from developing countries	• 22% for those aged ≤ 12 and 35% for those aged 13-15 years; • 3% among early adolescents (12-14) years in Nairobi slums; • 2% of girls (11-14 years) reported ever having sexual intercourse in Kibera slum in Nairobi, Kenya; • 4% among early adolescents aged 10-14 years in Senegal; • 7% among those aged 12-14 years in urban Ghana; • 9% among those aged 10-14 years in Tanzania; • 10% among 10-14-year-old adolescents in Zambia; • 0.5% of girls (10-14 years) in Taiwan. • 13% in Guatemala and 47% in Dominica; • 10% in Harare, Zimbabwe and 38% in Zambia; • 4% in Vietnam -32% in Nauru	Burkina Faso: 6%	2%
			Malawi: 19%	3%
			Uganda: 15%	8%
			Ghana: 2%	1%
			Cape Town, South Africa (12-15 years): • Sexual intercourse: 30% • Oral sex: 14% • Anal sex: 11%	• 9% • 4% • 1%
			Harare (Zimbabwe): 18%	4%
			Zambia 45%	29%
		Samoa: 56%	69%	45%
Markam et al. [28]	American Indian and Alaska Native youth (12-14 years),	6.5%	-	-

Maina et al. [226]	Girls aged 10–14 years living in Korogocho and Viwandani slums in Nairobi, Kenya.	-		13% of girls reported sexual experience.
Bankole et al. [64].	Female adolescents (12-14 years) in four countries (Burkina Faso, Ghana, Malawi, and Uganda)	-	1% in Ghana; 5.8% in Burkina Faso; 15% in Uganda; 19% in Malawi	2% in Ghana and 8% in Uganda (highest).
Lay et al. [227]	Brazilian adolescents aged 12–14 participated.	-	18% for boys	7% for girls
Lindberg et al. [228]	Male adolescents and young adults in the United States of America	-	7.6% (before age of 13 years)	
Rizkianti et al. [229]	School-aged Adolescents in Indonesia	5.3%	6.9%	3.8
Shayo et al [230]	In-school adolescents from five Sub-Saharan African countries: Benin, Mozambique, Namibia, Seychelles, and Tanzania.	43.5%	26%	17.5%
Kushal et al. [232]	Adolescents aged 12-15 years in 50 countries	14.2% Highest in the Americas (18.4%) and the lowest in the Southeast Asia region (5.3%)	19.7%	8.9%
Donatello et al. [27]	Urban Latino and African American Ninth Grade Students	the prevalence of vaginal sex was 19%, and that of anal sex was 16%, while anal sex was estimated at 6% among ninth-grade students	-	-
Ragsdale et al. [221]	California younger adolescents (aged 13–14) and older adolescents (aged 15–18)	15.9%	-	-
Gambadauro et al.] [105]	European adolescents aged 14-15 years	19.2%	-	-
Olaleye et al. [231]	Street-involved young people (SIYP) aged 10-24 years in Southwest Nigeria	64.3%	-	-

2.8.2 Sexual behaviours

Studies with early adolescents focus on various sexual behaviours. In their review of studies on sexual attitudes, knowledge and behaviours, Hong et al. [14] indicate that sexual behaviours among South Korean early adolescents (10-15 years) refer to various sexual practices, including condom use, number of sexual partners, and partner selection. This review of studies classified the factors associated with sexual behaviours among early adolescents in Korea at the macrosystem (religious affiliation and beliefs, media), exosystem (parents' employment), microsystem (family and school environment), and individual level (personal characteristics including age and school grade, sex, prior sexual experience, school misbehaviours, drug and alcohol use).

Adolescents' sexual behaviours were the focus of the study conducted by Magadi et al. among 523 Kenyan adolescents aged 10-19 years [102]. This study found higher sexual activity, including ever having sex and unprotected sex. The study also indicated that girls used their sexual and reproductive health knowledge to shape their sexual behaviour. The study also highlighted the factors associated with adolescents' sexual behaviours, including education, being out of school, and unprotected last sex.

In another study conducted by Bleakley et al., 1,990 U.S. adolescents (14-17 years) reported having engaged in kissing, touching or being touched over clothes, touching a partner's breasts or having one's breasts touched, touching a partner's private parts, seeing a partner naked, being naked with a partner, receiving oral sex, having vaginal sex and performing oral sex [131].

Olaleye et al. studied and found the following on sexual behaviours of young people aged 10-24 years (including adolescents) in southwest Nigeria: being sexually active (64.3%), ever using any form of modern contraception (31%), using condoms (inconsistently 93.3% of the sexually active participants), having multiple sex partners (56%), and engagement in transactional sex (22.8%) [231].

Sexual behaviours were also studied among older adolescents. While studying sexual behaviours among undergraduate students (15-24 years) in China, Lyu et al. focused on behaviours such as sexual experiences, lifetime number of sex partners, relationships (e.g., ever having a boy/girlfriend), use of contraception, pregnancy, and masturbation [209]. This study found that 18.7% of participants had ever had sexual intercourse, and boys were more likely to report one sex partner than girls. Four per cent of female students reported they were forced to

have sexual intercourse, and 26.1% of students indicated no use of contraceptive methods at first sex. In addition, fifty-six per cent of participants noted ever having a boy/girlfriend. In this study, the factors associated with sexual intercourse included having an urban background and homosexual and bisexual orientation. Mohammadi et al. found that 28% of males aged 15-18 years had engaged in sexual activity [205].

While measuring the association between SRH knowledge and Chinese college undergraduate students (18-25 years), Li et al. focused on the following behaviours: sexual debut (defined as ever” versus “never” having had sexual intercourse: penetrative vaginal or anal sex), age at first sexual debut, number of past sex partners, whether the first partner was intimate (boyfriend/girlfriend/wife/Husband) or non-intimate, use of contraception in last sexual intercourse, use of contraception in most sexual intercourses, ever experienced pregnancy for females and involvement in pregnancy for males, and ever experienced abortion for females or being responsible for abortion among males. The study also found that both males and females with sexual experience and with higher SRH knowledge were less likely to report experience of (or involvement in) pregnancy or abortion.

Sexual behaviours were also studied by Mukherjee et al. among 952 students aged 18 years and above in India [210]. These behaviours included masturbation, sexual intercourse (oral, anal, sexual experience through media, mean age at initiation, prevalence), homosexual behaviour, coercive sexual behaviour (victim, perpetrator), and paraphilic behaviour or fantasy [210]. The study found that 35% of participants reported ever having had sexual intercourse, and less than one-tenth indicated an oral or anal sexual experience. Furthermore, oral sexual experience was 9.1%, and anal sex was 4.5%.

In addition, Pastuszack et al. assessed sexual behaviours in their study that involved 18-25-year-old males in the United States of America. They assessed sexual behaviours, including engaging in oral, anal, and vaginal sex, age at first sexual intercourse, condom use at last sexual encounter, type of contraceptive method used, history of STIs, and familiarity with and intent to consider vasectomy as a birth control method. They found that 83.7% of participants engaged in sexual intercourse (penis–vagina penetration), 70.7% engaged in oral sex, and 20.6% engaged in anal intercourse.

Saraçoğlu et al. assessed sexual behaviours among 1314 students (16-28 years) at a University in Turkey and targeted sexual behaviours including having a boy/girlfriend (83.2%), having had sexual intercourse (32%), mean age at first intercourse (16.83 ± 2.07), sexual activity in

previous six months (12.9% had sexual intercourse not regularly, and 9.6% had sexual intercourse regularly), and condom use at last sexual intercourse [206]. The most preferred method in this study was condoms (37.6%). Having a boyfriend or girlfriend was also assessed as sexual behaviour in a study conducted by Ndongmo et al. in Zambia among 148 older adolescents (15-19) living with HIV [233].

2.8.3 Health outcomes

Vasilenko et al. highlight that outcomes of sexual behaviours include physical, mental and social health outcomes [234]. This study focused on physical health outcomes, which include, according to Vasilenko et al., pregnancy or sexually transmitted infections [234]. Furthermore, in a study where Lyu et al. report that twelve per cent of students reported ever involvement in pregnancy, including 16.3% of boys and 8.2% of girls, 39% reported abortion. In contrast, 20.4% reported pregnancy [209]. Further research examined the frequency of sexually transmitted infections in teenagers (14-19 years) to understand sexual health effects. Gabster et al. examined the prevalence of sexually transmitted infections (STIs) among school-going teenagers in Panama and found that it was 0.4% for females and 1% for males [235]. In another study analysing the prevalence of HIV/STIs among adolescents (10-19 years) in Madrid, the prevalence of HIV was 2.4% [236]. In their systematic review and meta-analysis, Evans et al. assessed pregnancy and STI contraction as sexual behaviours [237].

2.8.4 Factors associated with sexual experience among adolescents

Research indicates that multiple factors influence ASRH outcomes in the social-ecological environment of adolescents. Lee et al. indicate that five factors influence sexual behaviours. These include family and cultural values, parental relationships, acculturation, gender roles, and knowledge and information about sex and STIs [198]. While assessing the factors associated with adolescent sexual and reproductive health in English-speaking countries in the Caribbeans, Pilgrim et al. found that these factors fell under individual (gender, psychological wellbeing, and mental health), microsystem (quality of parent-adolescent interaction, presence of violence, substance use, mental health problems in the family, and peer relationships), macrosystem (cultural attitudes), and chronosystem (history of sexual and physical violence) levels [54].

Moreover, an analysis of research on factors influencing adolescent sexual and reproductive health in developing countries revealed a predominant focus on Sub-Saharan Africa,

particularly on sexual debut and condom usage [238]. The review showed that the factors related to Adolescent Sexual and Reproductive Health (ASRH) could be classified into individual, family, and community levels. Similarly, a systematic review of seven cohort studies indicates that the risk factors for early sexual intercourse among adolescents can be categorised into individual, family, social, environmental, and sociodemographic levels [134]. This review found that substance use by adolescents and parents, aggression and conduct disorders, attachment to family, school achievement, family living situation, and mother's education were risk factors for early sexual intercourse among adolescents [134].

Cueto and Leon found that early sexual initiation was positively associated with being male, having a mother with less than complete secondary education, an increase in family wealth, overage in school, reporting alcohol frequently or sexual behaviour in participants' group of friends [239]. Magadi et al. discovered a correlation between education and adolescent sexual behaviour in Kenya. Adolescents aged 10-19 with secondary education were less likely to engage in unprotected sex and more likely to undergo HIV testing. Conversely, being out of school was linked to increased rates of HIV testing [102]. Lindberg et al. found that in the United States of America, a higher educational level of the mother was associated with lower odds of reporting sexual intercourse before 13 years [228]. In a study involving American Indian and Alaska Native youth (12-14 years), Markam et al. found that the factors associated with lower odds of lifetime sexual experience included lower intention to have oral or vaginal sex in the next year, non-use of alcohol, avoidance of risky situations [28]. Gambadauro et al. found that smoking, alcohol use, illegal drug use, and poor sleep predicted sexual initiation among European adolescents [105]. Cueto et al. found that the factors correlated with early sexual initiation included the following: being a male, incomplete secondary education of the mother, increase in family wealth, overage in school, and reporting drinking alcohol frequently [239].

Kushal et al. found that female sex, parental monitoring and peer support were protective factors for early sexual initiation (before the age of 15), while the risk factors included older age, anxiety, loneliness, suicidal ideation, being bullied, physical fighting, school truancy, smoking, drinking alcohol, drug use, physical activity and being overweight [232]. Similarly, Rizkianti et al. found, in their analysis of data from GSHS in Indonesia, that sexual intercourse was associated with gender, school grade, smoking, alcohol consumption, drug use, truancy, peer support and parental supervision [229]. Diiorio et al.'s study among adolescents aged 13-15 found that participants who did not believe their friends supported sexual intercourse and had

positive attitudes towards abstaining from sex were less likely to start having sex [224]. Shayo et al. found that, among in-school adolescents from five countries in sub-Saharan Africa, the predictors of sexual intercourse with multiple sex partners included smoking cigarettes, alcohol use, and illicit drug use [230].

It is essential to learn from older adolescents and youths while assessing the factors associated with sexual experience among young adolescents. A study by de Meyer et al. among 14-18-year-old secondary schools in Bolivia and Ecuador concluded that gender equality attitudes positively impacted adolescent SRH and well-being [84]. Furthermore, two studies indicated that depression among adolescents was associated with sexual experience in Kenya [226] and the Finnish School Health Promotion Study [240]. The factors associated with sexual initiation among adolescents aged 15-19 years in Rakai, Uganda, included older age, non-school enrolment, alcohol use, and being double orphan among male adolescents [222]. In addition, Ghule et al. indicated that peer interaction and place of study were associated with coital and non-coital experiences among girls aged 15-24 [241]. Research by Mmari et al. revealed that among older adolescents aged 15-19 years, females raised by non-biological relatives in Baltimore were less likely to have had sex. In Johannesburg, females who were paternal orphans had less sexual experience. Additionally, in both Baltimore and Johannesburg, females exposed to violence were more likely to have higher sexual experience [81]. Furthermore, among males aged 15-18 years, Mohammadi et al. found that sexual experience was associated with older age, access to satellite television, alcohol use and permissive attitudes towards sex [205]. Among youths, Li et al. found that among the sexually experienced participants from Chinese college students aged 18-25 years, higher SRH knowledge is associated with reporting less pregnancy or abortion [216]. Lyu et al. found that having an urban background and homosexual and bisexual orientation were associated with having sexual intercourse among students aged 15-24 years in China [209].

2.9 THEORETICAL AND CONCEPTUAL FRAMEWORK

2.9.1 Theoretical framework: pragmatism

This research used a mixed-method sequential exploratory design (qualitative followed by quantitative) [242]. Unlike positivism, which uses quantitative research methods, and constructivism, which underpins qualitative research methods, mixed-methods research integrates quantitative and qualitative research strategies [243]. Mixed method research commonly uses the pragmatism approach, which is an alternative worldview to positivism and

constructivism and emphasises the problem to be researched and the consequences of the research [243].

This research uses Pragmatism as a research paradigm. It holds that “the value and meaning of opinions and ‘facts’ captured in research data are assessed through examination of their practical consequences” [244], p.3. Pragmatism focuses on the possibility of action and is driven by anticipated impact [245]. Pragmatic inquiry should examine effective habits or ways of acting, produce valuable and actionable knowledge, and solve existing problems [244]. Pragmatism is the overarching paradigm that can combine qualitative and quantitative methods if this combination can justify desired results [245]. Pragmatism advocates that there are “singular and multiple realities that are open to empirical inquiry and orient itself towards solving practical problems in the ‘real world’” [243].

Given the above, pragmatism serves as the most fitting philosophical foundation for this study. Employing this pragmatic approach, the study uses qualitative and quantitative data to assess early adolescents' knowledge, beliefs, and behaviours regarding gender and sexuality, sexual experiences and health outcomes of early adolescents in Rwanda. It analysed their associations with sexual experiences and health in selected districts of Rwanda. The study achieves this aim by bringing together findings from the sexual and reproductive health and rights policy reviews, comprehensive sexuality education curriculum review, key informant interviews with SRHR stakeholders in Rwanda, a survey on SRHR knowledge, attitudes, behaviours and sexual experiences and health outcomes; and focus group discussions with early adolescents. The combination of these strategies allows to gather evidence on the context of early adolescents' sexual and reproductive health and rights in Rwanda; provides insights on their SRHR knowledge, attitudes, behaviours, sexual experiences and health outcomes; and suggests actions at various levels of their sexual health which is embedded in their social-ecological environment.

2.9.2 Social-ecological framework of adolescent sexual and reproductive health and rights

Research suggests that an array of factors from multiple interrelated levels influences adolescent health. The theory of the ecology of human development suggests that “the ecology of human development involves the scientific study of the progressive, mutual accommodation between an active, growing human being and the changing properties of the immediate settings in which the developing person lives, as this process is affected by relations between these

settings, and by the larger contexts in which the settings are embedded.” [37], p. 21. This theory has been used to understand the factors that shape adolescent sexual and reproductive health.

Small and Luster suggest that the ecological model of risk factors for adolescent sexual activity consists of individual, familial and extrafamilial levels [38]. The individual-level factors include intellectual ability, drug use, and history of sexual abuse. The familial level factors are single-parent households, poor parental monitoring, and low socio-economic status. Extrafamilial level factors include those related to school (such as few positive school experiences), peers (including sexually active friends or being involved in a committed relationship), and neighbourhood (such as low-quality neighbourhood and low neighbourhood monitoring).

An Ecological model defines systems that act together to influence human development. These systems include the microsystem, the mesosystem, the exosystem, and the macrosystem [37, 39]. The microsystem consists of contexts and individuals with which individuals have regular contact including parents, peers, school and the media. The mesosystem includes interactions between the microsystems, such as the interaction between parents and teachers. The exosystem includes neighbourhoods and parents’ workplaces. Finally, the macrosystem consists of larger societal contexts such as laws, economic systems and culture.

Blum et al. suggest an ecological framework for early adolescence [40]. This framework includes the individual, family, peer and school, community, and macro-level factors. Svanemy et al. indicate that an enabling environment for Adolescent Sexual and Reproductive Health consists of factors at the individual (agency and empowerment), relationships (with partners, parents and peers), community (social norms), and societal (policies, laws, and media campaigns) level [41].

2.9.3 Conceptual framework

Early adolescents’ sexual health is influenced by the combined effect of multiple factors at the individual, relationships, community and societal levels [246]. This study uses Bronfenbrenner’s ecological model [3, 28, 54, 246, 247]. Individual factors include sex, age, education level, gender and sexuality knowledge, attitude toward gender, behaviours, substance use, and attendance to risky situations. Relationship factors include those related to early adolescents’ family members, peers, sexual partners, and social networks, such as their clubs. Community factors include schools, such as sexuality education, churches, physical/sexual

violence, gender inequity, and exposure to various sources of SRHR information, including media. Early adolescents' social context shapes personal, relationship and community factors. Embedded in the social context are gender norms, SRHR, and gender policies (education, health, socio-economic, information and communication) that enable access to early adolescents' sexuality education and shape their gender and sexuality-related knowledge, beliefs and behaviours, as well as their sexual experiences, and health outcomes.

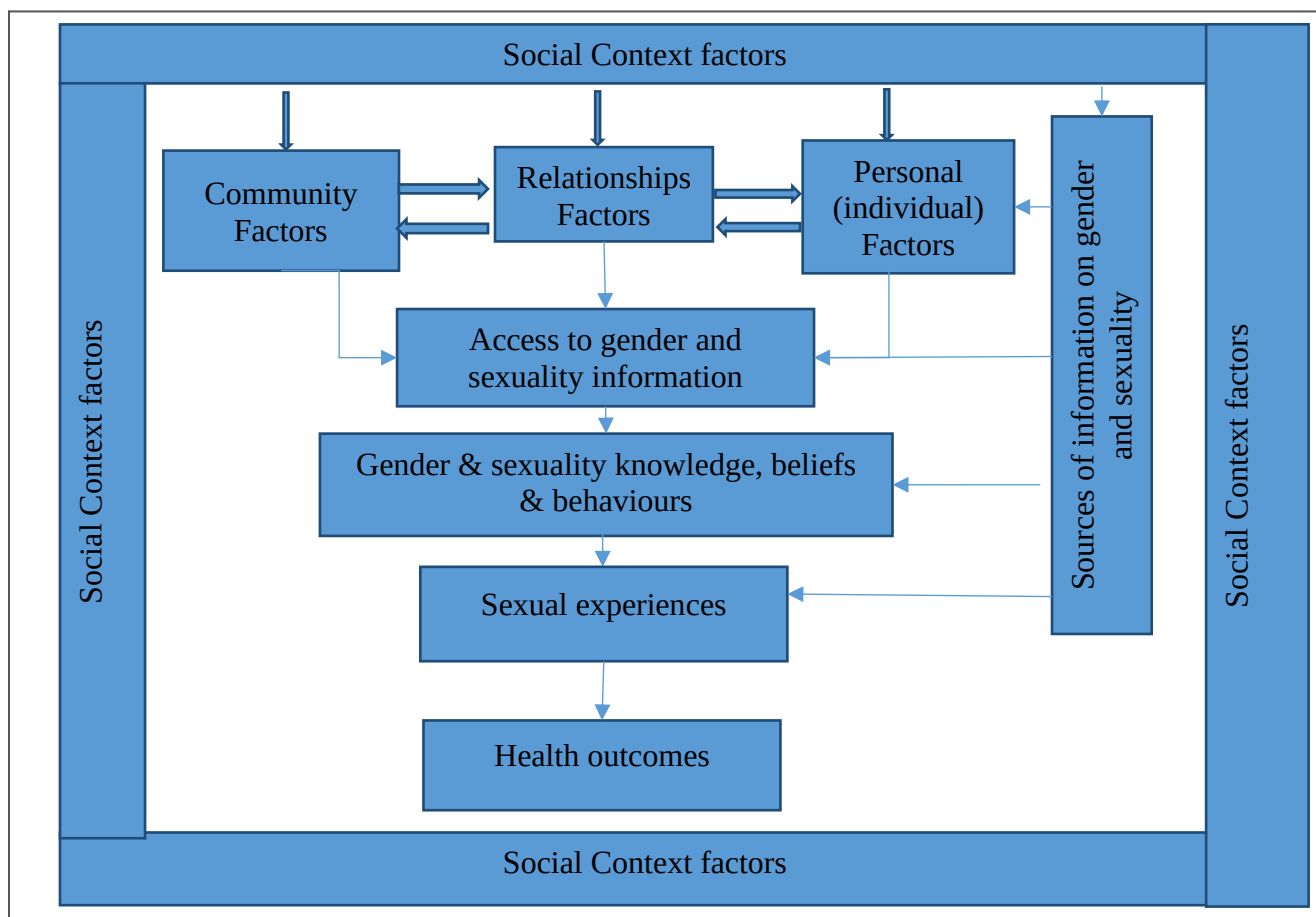


Figure 2. 2: Framework of adolescent gender and sexuality, adapted from Bronfenbrenner's socio-ecological framework of adolescent health.

Although extensive literature is available for older adolescents, it needs to locate adolescent health in their environment; linkages with their social-ecological environment must be included. This research contributes to the understanding of adolescent health during early adolescence using a broader perspective on how gender and sexuality influence early adolescents' sexual health.

2.10 RESEARCH GAP

Reviewed literature highlights that policy plays a crucial role in promoting adolescent sexual and reproductive health and rights among adolescents, especially among the very young ones

(10-14 years). However, despite placing adolescent health on the international development agenda and substantive literature focusing on older adolescents, little is known about how policy addresses the early adolescents' SRHR needs (especially those related to knowledge, attitudes, and behaviours) at the global and regional levels in general, and in Rwanda in particular. The sources of SRHR information for older adolescents have been explored in various studies, but little research has been conducted on early adolescents. The role of various sources of SRHR information in promoting ASRHR is still debatable. The risks of accessing inadequate SRHR information exist among adolescents in general and early adolescents in particular. The literature does not reflect much on various sources of SRHR information for early adolescents, their preferred sources and related justifications, and the influences of these sources on early adolescents' SRHR knowledge, beliefs, behaviours, sexual experiences and health outcomes among this age group. On this note, the literature emphasises penetrative sexual experience and less often includes non-penetrative sexual activities (kissing, touching).

Furthermore, guidelines have been established to harmonise the content of CSE programmes delivered in schools. Still, variations in the content of CSE exist, and these result from multiple factors surrounding the environment where such programmes are being implemented. In addition, the age groups of study participants in the reviewed literature overlap and include findings from older adolescents (15-19 years), and it becomes hard to focus exclusively on the findings specific to early adolescence (10-14 years).

This research contributes to addressing this gap in various ways, mainly by using a social-ecological framework that marks the interaction between multiple factors in the environment of early adolescents. First, it focuses on the policy landscape of sexual and reproductive health and the rights of early adolescents. It explores how gender and sexuality policies address the emerging SRH needs of this very young population in sub-Saharan Africa, taking Rwanda as a case. Second, without mixing both younger and older adolescents, this study brings more insight specific to early adolescents' context of access to SRHR information as a precursor of knowledge and sexual behaviours, SRHR knowledge, beliefs and behaviours, sexual experiences and health outcomes, as well as the determinants of this knowledge and sexual experiences. The study also fills the gap by unveiling various current and preferred sources of SRHR information and their influence on adolescent health, including SRHR knowledge, attitudes, behaviours, sexual experience and health outcomes. In addition, there is a significant focus on penetrative sexual experience, while non-penetrative sexual behaviours also matter for

the sexual development process of early adolescents. What makes this study more insightful is the use of qualitative and quantitative data, which was rarely achieved in the reviewed studies.

2.11 SUMMARY OF THE CHAPTER

This chapter provides a review of literature about adolescents' sexual and reproductive health and rights, specifically for early adolescents, globally, regionally and locally. It indicates that adolescent sexual and reproductive health and rights have been a global preoccupation since many years ago and that Rwanda's commitment is to promote and achieve safe adolescent health. The chapter also reflects on various ways of accessing SRHR information for adolescents in general and early adolescents in particular. It emphasises CSE as one of the interventions undertaken to promote adolescent health and improve sexual behaviours and health outcomes. The chapter also describes the SRHR knowledge levels, attitudes, behaviours, sexual experiences, and health outcomes among older and early adolescents where possible. The chapter also emphasises pragmatism as a theoretical and guiding philosophical approach for this research and describes the conceptual framework followed. Finally, the chapter describes the gap identified in the reviewed literature.

CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

This chapter provides an overview of the research methods for this PhD. It describes the study site, population and sample, design, procedures, data management and analysis, and data quality. The chapter also provides information on integrating and disseminating findings from the current research.

3.2 STUDY SITE

The study was conducted in Rwanda. In Eastern Africa, Rwanda borders Uganda in the north, Tanzania in the east, Burundi in the south, and the Democratic Republic of Congo in the west [248]. Rwanda has four provinces (Eastern, Western, Southern, and Northern) and the City of Kigali. Twelve per cent (12%) of the Rwandan population is between 10 and 14 years (early adolescence) [249, 250]. The Fifth Population and Housing Census – 2022 indicated that the Rwandan population was estimated at 13.2 million [250]. Rwanda has 30 districts, of which four (4) were selected by this research for their higher childbearing rates in 2014/2015.

Rwanda's basic education system comprises pre-primary, primary, and secondary education [178]. Pre-primary education comprises nursery schools and enrolls learners between three and six years. Primary education lasts six years, consists of lower primary (P1-P3) and upper primary (P4-P6) and hosts learners aged six to 12 years. Secondary education lasts six years and is organised into the lower or ordinary level (O-Level) and upper or advanced level (A-Level). Secondary education officially enrolls learners between 13 and 18 years; however, some children start secondary schooling at 12 years. The languages of teaching and learning are Kinyarwanda for pre-primary and lower primary (P1-P3) levels and English for upper primary (P4-P6) and secondary levels [178]. Teaching programs, including the competence-based curriculum for these levels, are developed and monitored by the Rwanda Education Board (REB) [251].

The Rwanda competence-based curriculum specifies that learning occurs in different subjects at the pre-primary, primary and lower-secondary levels [252]. At the pre-primary level, learning activities occur in the Discovery of the World, Numeracy, Physical and Health Development, Creative Arts and Culture, Language and Literacy (Kinyarwanda and English), and Social and Emotional Development. At the lower-primary levels, learning occurs in the following core subjects: Kinyarwanda, English, Mathematics, Social and Religious Studies, Science and

Elementary Technology, Creative Arts: Music, Fine Art and Craft, and Physical Education. Core subjects for the upper-primary level are the same as those listed for the lower-primary level, in addition to the subject of French. The core subjects of Kinyarwanda, English, Mathematics, French, Physical education (and Sports) are also opened at the upper-secondary level in addition to the following ones: Physics, Chemistry, Biology and Health Sciences, Information and Communication Technology, History and Citizenship, Geography and Environment, Entrepreneurship, Kiswahili, Literature in English. At the lower-secondary level, the learners have Religion and Ethics, Music, Dance and Drama, Fine Arts and Crafts, Home Sciences, Farming (Agriculture and Animal husbandry) as elective subjects and Library and Clubs as a compulsory co-curricular activity.

Religious institutions are important at many levels of Rwanda's education system. The fourth population and housing census conducted in 2012 indicated that religious affiliation was universal, with the predominance of Christianity [253]. In 2018, education statistics in Rwanda indicated that religious institutions own most pre-primary, primary and secondary schools [254]. In Rwanda, cultural and religious influences are perceived as barriers to delivering sexual and reproductive health services related to family planning and circumcision [96].

The desk review, key informant interviews, and school curricula were conducted nationally. The survey and focus group discussion were conducted in the 16 selected schools from two urban districts (Gasabo and Nyarugenge) and two rural districts (Ruhango and Rwamagana) in Rwanda. These districts were selected for their high prevalence of adolescent pregnancy based on data from the Demographic and Health Survey (DHS) conducted between 2014 and 2015 [255] (Figure 3.1).



Figure 3. 1- Study districts where the survey was conducted.

3.3 STUDY POPULATION AND SAMPLE

3.3.1 Study population

The study population for the current research consists of gender and sexuality policies, school gender and sexuality curricula, gender and sexuality education stakeholders in Rwanda, and early adolescents aged 12-14 from grades one and two of secondary schools in selected study districts. We expected early adolescents (12-14 years) to be in these grades according to the Rwanda curriculum framework [182].

3.3.2 Sampling and sample size

The sampling strategy depended on the objective of the study. Sampling strategies for each objective are described in section 3.5. The sample size was determined according to the outcomes of the study. Overall, the research involved a review of 12 documents purposively selected, including policies, strategic plans and laws, 11 gender and sexuality school curricula for early adolescents, 16 gender and sexuality education stakeholders from various layers, 811 early adolescents in the survey, and 108 early adolescents who participated in the FGDs. According to the Rwanda curriculum framework, participants of the age group 10-14 years are in upper primary and lower secondary levels [182]. Given this overlap in participants' age

between the primary and secondary levels, a decision to include participants aged 12-14 years from the secondary level (where most participants could be expected to be) was made to facilitate the selection of participants and avoid keeping moving from primary to secondary levels and vice versa. Details of the sample size for each objective are depicted in Table 3.1.

Table 3. 1- Research participants per study objectives

Objectives	Study population	Sampling technique	Number of participants/documents	Research tools
To assess the extent to which gender and sexuality policies address the specific needs of early adolescents in Rwanda.	Gender and SRHR policies in Rwanda.	Purposive selection	Seven policies Two strategic plans Three laws	Policy triangle framework
Describe the social context, including personal, relationships and community factors, influencing early adolescents' gender and sexuality knowledge, beliefs and behaviours in Rwanda.	Gender and sexuality education stakeholders from various public and private institutions, faith-based organisations and non-governmental organisations	Purposive selection	16 stakeholders	Interview guide
To analyse Sexual and Reproductive Health and Rights (SRHR) messages conveyed to early adolescents by different sources of information in Rwanda.	23 curricula, of which 11 underwent in-depth review	Purposive selection	16 stakeholders 11 curricula for early adolescents	Interview guide and Review checklist
To describe early adolescents' knowledge, beliefs and behaviours related to gender and sexuality in the selected districts of Rwanda.	Early adolescents aged 12-14 from 16 schools	Randomly	811 early adolescents	Adapted Illustrative Questionnaire for Interview – Surveys with Young People; and FGD guide.
To determine the relationship between the early adolescents' sexuality and gender knowledge, beliefs and behaviours and their sexual experiences.		Random selection of 811 participants; Purposive selection of participants in FGDs	811 early adolescents for the survey, and 13 FGDs with 108 early adolescents	
To determine the relationship between early adolescents' gender and sexuality knowledge, beliefs and behaviours and specific health outcomes (STIs, pregnancy) in the selected districts of Rwanda.				
The purpose of this study is to determine the relationship between exposure to different sources of information (including the Internet) and early adolescents' gender and sexuality knowledge, beliefs, and behaviours in selected districts of Rwanda.				

3.3.3 Inclusion criteria and exclusion criteria

The desktop review included purposively key policies, strategic plans, and laws promoting adolescent sexual and reproductive health and rights. After identifying these essential documents, any documents reflecting on gender and sexuality were considered for the review. However, this research excluded two documents because they did not have content related to gender and sexuality. These documents included the National Community Health Policy and the Education Sector Policy. Gender and sexuality education stakeholders were purposively selected. All stakeholders who consented were included in the study. Those who indicated they were not involved in CSE education and those who exhibited limited interview availability were excluded. To review the curricula, we included all curricula from the pre-primary to lower secondary levels (up to senior three) that accommodated CSE competences. Curricula that did not reflect on CSE competences were excluded from the review, even if they were listed in the competence-based curriculum framework as accommodating CSE [179]. In the survey, the study included participants from the selected schools who signed informed assent after receiving parental or legal guardians' informed consent. In addition, participants were expected to be 12-14 years old and attending senior one and senior two of the sampled schools. The study excluded early adolescents who did not have parental authorisation and assent available and whose age did not fall within the range of 12-14 years. Participants for the FGD were conveniently selected depending on their age (12-14 years) and sex, and those of the same gender were selected to participate in a Focus Group Discussion (FGD). Consent from parents or legal guardians and assent from participants was necessary for participation in the FGD.

3.4 STUDY DESIGN

This study used a mixed-method, exploratory, sequential design [256, 257], starting with qualitative data collection leading to quantitative data collection [242]. Phase one consisted of three qualitative studies: policy reviews, key informants' interviews with SRHR stakeholders, and the CSE curriculum review for early adolescents. Phase two consisted of a survey (quantitative study) to explore early adolescents' SRHR knowledge, beliefs, behaviours, sexual experiences and health outcomes. Phase three involved conducting Focus Group Discussions (FGDs), which is a qualitative study with early adolescents. This was done to enhance the results obtained in the previous phases (Phases one and two) and to investigate the recommendations made by early

adolescents regarding their Sexual and Reproductive Health and Rights (SRHR). Figure 3.2 depicts the study phases.

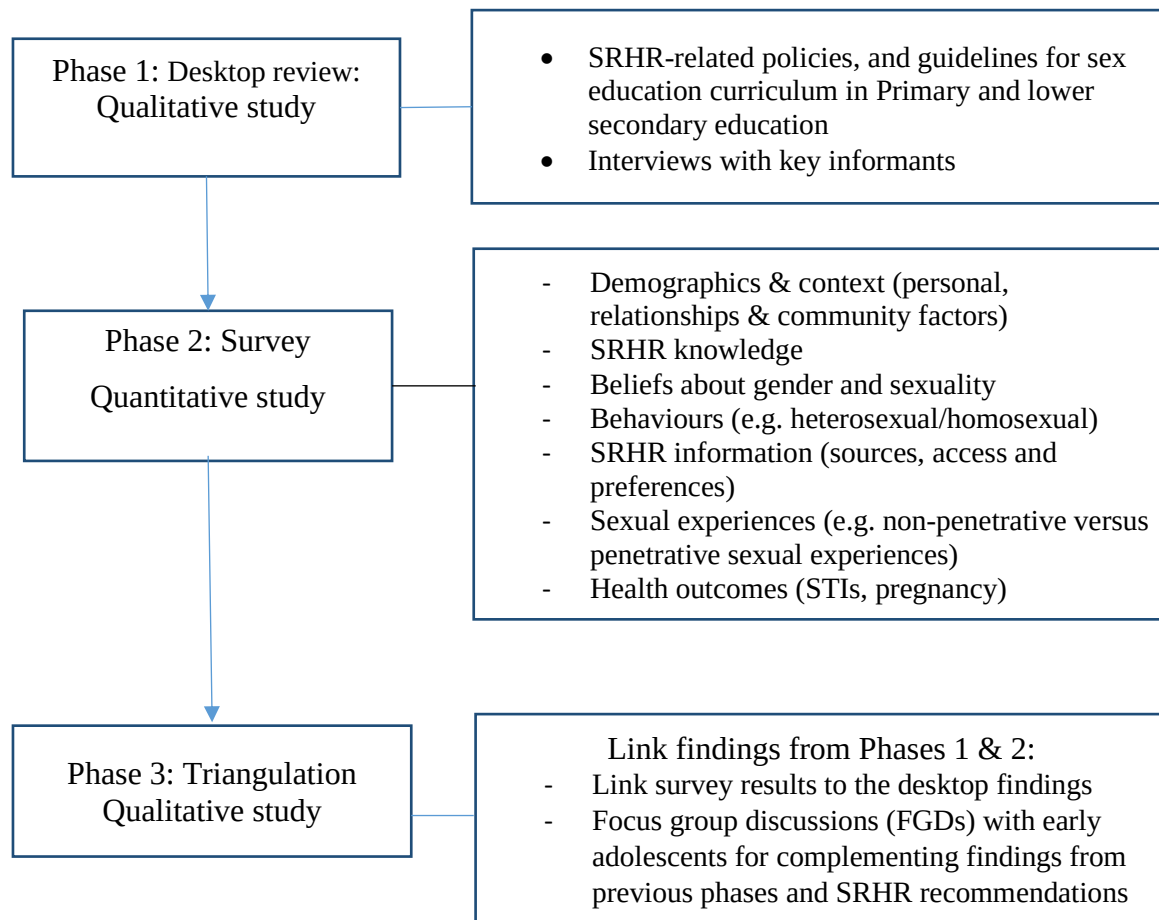


Figure 3. 2- Research phases

3.5 STUDY PROCEDURES

3.5.1 Desk review

The desk review consisted of reviewing extant gender and sexuality policies, strategies, and laws that enable access to SRHR information among early adolescents.

3.5.1.1 Framework for Policy Review

This policy review used the policy triangle approach suggested initially by Walt and Gilson in 1994, stipulating that any policy review activity should involve four policy constituents: policy context, content, process and actors [258]. This framework has been previously used in other

studies on policy review [259-263]. In line with this framework, the policy context refers to political, economic, social, national and international factors described in the policy, and these factors affect early adolescents' access to gender and sexuality information in Rwanda. The policy content encompasses the key components or substantive details of the policy (e.g. objectives of the policy) on gender and sexuality education of early adolescents in Rwanda. The process refers to the mechanism by which the policy was formulated and implemented (e.g. participatory decision-making) and related challenges. Policy actors refer to policy-makers, pressure groups, communities, significant providers, individuals, organisations, governments, and agencies who influence policy or are actively involved in the policy process [259-263].

3.5.1.2 Data collection tool and procedures

We identified key policies, strategic plans, and laws designed to promote child and adolescent health from relevant government institutions' websites for review. Websites concerned by this search include those of the Rwanda Ministry of Health (MoH), the Rwanda Ministry of Education (MINEDUC), and the Ministry of Gender and Family Promotion (MIGEPROF). Laws were searched and retrieved from the official website of the Ministry of Justice of the Republic of Rwanda (<https://www.minijust.gov.rw/official-gazette>). This website is a repository of publications of the Official Gazette of the Republic of Rwanda. After scrutiny, seven policy documents, two strategic plans, and three laws were considered for review. Reviewed policies, strategic plans and laws are displayed in Table 3.2. The National Community Health Policy and the Education Sector Policy were not considered for the final review because the National Community Health Policy does not reflect on gender and sexuality education. In addition, the researcher referred to the School Health Policy rather than the Education Sector Policy because the School Health Policy is considered by the Rwanda Ministry of Education (MINEDUC) as the reference document for promoting the health of schoolchildren. We then identified all materials about adolescent sexual and reproductive health and rights and put a special emphasis on those related to early adolescents, if any. The following key terms were searched from the policy document during the review: gender, health, sexual health, reproductive health, rights, early adolescence, young adolescents, 10-14 years, sexuality education, sexuality information, and reproductive knowledge. All text about them was selected and extracted in a standard sheet for further analysis.

Table 3. 2: Reviewed policy documents, strategic plans and laws

Policy documents
Adolescent Sexual Reproductive Health and Rights Policy 2011-2015 [58]
National Reproductive Maternal, Newborn, Child and Adolescent Health (RMNCAH) Policy [176]
National School Health Policy [177]
Girls' Education Policy [264]
Health Sector Policy [56]
Family Planning Policy [265]
National Gender Policy [57]
Strategic Plans
National Family Planning and Adolescent Sexual and Reproductive Health (FP/ASRH) Strategic Plan (2018–2024) [184]
Fourth Health Sector Strategic Plan July 2018 – June 2024 [266]
Laws
Law N°59/2008 of 10/09/2008 on prevention and punishment of gender-based violence [267].
The law relating to human reproductive health N° 21/2016 of 20/05/2016 [60]
The law governing persons and families [268]

3.5.1.3 Data analysis

Selected policies, strategic plans and laws were imported into NVivo 11 for coding and content analysis. Policy documents and strategic plans were thematically analysed using the policy triangle framework [259, 260, 262, 263, 269, 270]. We also reviewed and analysed the content of three laws: the law relating to human reproductive health in Rwanda [60], the law on prevention and punishment of gender-based violence [267], and the law governing persons and families [268].

3.5.2 Review of the curriculum on comprehensive sexuality education of early adolescents

We reviewed the syllabi of subjects that accommodate the CSE curriculum in Rwanda for the pre-primary, primary, and lower secondary school levels to map the sexuality education competences. The review followed the revised sexuality education framework provided by UNESCO [145].

Selection of documents. The document review process entailed searching for CSE competences from the Rwanda competence-based curriculum and classifying these competences per the key concepts and topics recommended in UNESCO's ITGSE. The selection process involved identifying the subjects designated by the competence-based curriculum to integrate CSE at the pre-primary, primary (P1-P6), and lower secondary (S1-S3) levels [252]. There were 13 identified subjects: (1) Social Studies, (2) History and Citizenship, (3) General Studies, (4) English, (5) French, (6) Kinyarwanda, (7) Kiswahili, (8) Information and Communication Technology, (9)

Music, (10) Physical Education, (11) Biology, (12) Science and Elementary Technology, and (13) Religious Education [179, 182]. For the 13 subjects, there were 23 syllabi following the school levels [179], which included one syllabus for the pre-primary level, five syllabi for the lower-primary (P1-P3) level, six syllabi for the upper-primary (P4-P6) level; and 11 syllabi for the lower-secondary (S1-S3) level. However, of the 23 syllabi of the subjects indicated by the Rwandan competence-based curriculum to accommodate CSE [178], only 11 were found to have CSE content, and these were selected for the final review.

Data collection. We collected data using the record review and the key informant interviews. The record review involved searching for CSE competencies from the selected syllabi. We used search terms including gender, sex, sexuality, sexual activity, sexually transmitted infections, HIV/AIDS, values, rights, culture, violence and staying safe, skills for health and wellbeing, human body and development, sexual behaviour, and reproductive health. We mapped key terms from the competence-based curriculum's syllabi, assessed competences and linked them to specific CSE competences defined in this curriculum, and extracted data in a Microsoft Excel form for further analysis. The data extraction form consisted of the following columns: document title, school grade, subject, topic, competence, and suggested contents.

3.5.3 Key Informant Interviews

3.5.3.1 Sampling and recruitment of participants

The study used a purposive sampling strategy to recruit participants who work for institutions involved in SRHR policy-making decisions and disseminate SRHR information to young adolescents and youths in Rwanda. The researchers contacted 19 relevant institutions through official correspondence. In total, 16 participants from these institutions were available for interviews, and three participants exhibited little interest in interviews after several attempts by the researchers to reach their institutions. These participants included nine (six females and three males) from public institutions, six participants (five males and one female) from faith-based organisations (FBOs), and one female participant from a non-governmental organisation (NGO) (Table 3.3). The public institutions involved in this research were the Ministry of Education, Ministry of Gender and Family Promotion, Ministry of Sports and Culture, Ministry of Health, Rwanda Biomedical Centre, Rwanda National Children's Commission, Rwanda Education Board,

and the urban districts of Gasabo and Nyarugenge. The FBOs that provided participants included the Roman Catholic Church, the Seventh-Day Adventist Church, the Pentecostal Church, and the Rwanda Muslim Community.

Table 3. 3: Distribution of key informants by affiliation and sex

Affiliation	Sex		
	Total	Male	Female
Public institutions	9	3	6
FBO	6	5	1
NGOs	1	0	1
Total	16	8	8

We recruited participants who consented to the study based on their availability for interviews (provided by their institutions). We did not include participants from institutions that did not respond to the researchers' request for data collection after repeated follow-ups.

3.5.3.2 Data collection

Data were collected from July to October 2019. After receiving consent from the participants' institutions, the researchers arranged to contact the participants and establish the interview procedures. Before the interviews, we gave participants the study information and time to ask relevant questions. Next, researchers invited each participant to sign an informed written consent form. Finally, the researchers digitally audio-recorded the interviews with the participant's consent. The interview language was Kinyarwanda for 15 interviews and English for one interview. Each interview lasted between 30 and 60 minutes. The interview guide used during the interviews covered several topics, including participants' views on enablers and barriers to accessing SRHR information among the target age group population.

3.5.4 The survey

3.5.4.1 Study population and sampling

Multistage, stratified sampling was adopted to recruit the study participants from 16 secondary schools. Four districts, including two rural and two urban districts, were selected in total. Districts with higher than the national average childbearing rate (7.3%) according to the Rwanda Demographic and Health Survey of 2014-15 [255] for adolescents (15-19 years) were eligible for selection. Eight of 27 rural districts were eligible, and two were randomly selected. Two districts were eligible in the urban setting and were selected for the study. These districts comprise Nyarugenge and Gasabo in the urban setting and Rwamagana and Ruhango in the rural setting.

Four schools, two public and two private, were randomly sampled in each chosen district. Within each school, one grade I and one grade II class were randomly sampled, and the existing one was chosen for schools with only one. In each sampled class, fifteen boys and fifteen girls were selected. Those who gave assent and obtained parental consent were interviewed.

This research assumed that approximately 15 boys and 15 girls per class would obtain parental consent and provide assent. Due to the clustering with using classes, the effective sample size would be less than 448 for boys and girls. Assuming the design effect (deff) of 1.5 (moderate clustering effect), the effective sample size is 299 boys and 299 girls ($448/1.5$). Supposing that among those with access to information on sexuality, 6% would have had a sexual debut, and among those without access to information, 18% would have had a sexual debut. By analysing boys and girls separately, the study would achieve over 80% power to detect a statistically significant difference at the 5% level. Similarly, other factors with an equivalent effect size (relative risk of 3) would also be detectable.

The total sample size was 448 boys and 448 girls ($4 \times 4 \times 2 \times 14$, i.e. four districts, four schools per sampled district, two classes per school, and 14 boys/girls, respectively, per class). In each classroom, we randomly selected an equal number of boys and girls ($n=14$) to obtain 28 early adolescents for each grade (senior one or senior 2), and, consequently, 56 early adolescents were sampled from each school. We, therefore, collected data from 896 learners but excluded data from 85 learners because they were older than 14 years (Figure 3.3). The final sample size was, subsequently, 811 early adolescents.

We included participants who signed informed assent after receiving parental informed consent. In addition, participants were expected to be 12-14 years old and attending senior one and senior 2 of the sampled schools. Participants whose parental consent and assent were not available and who were older than 14 years were not considered in the study.

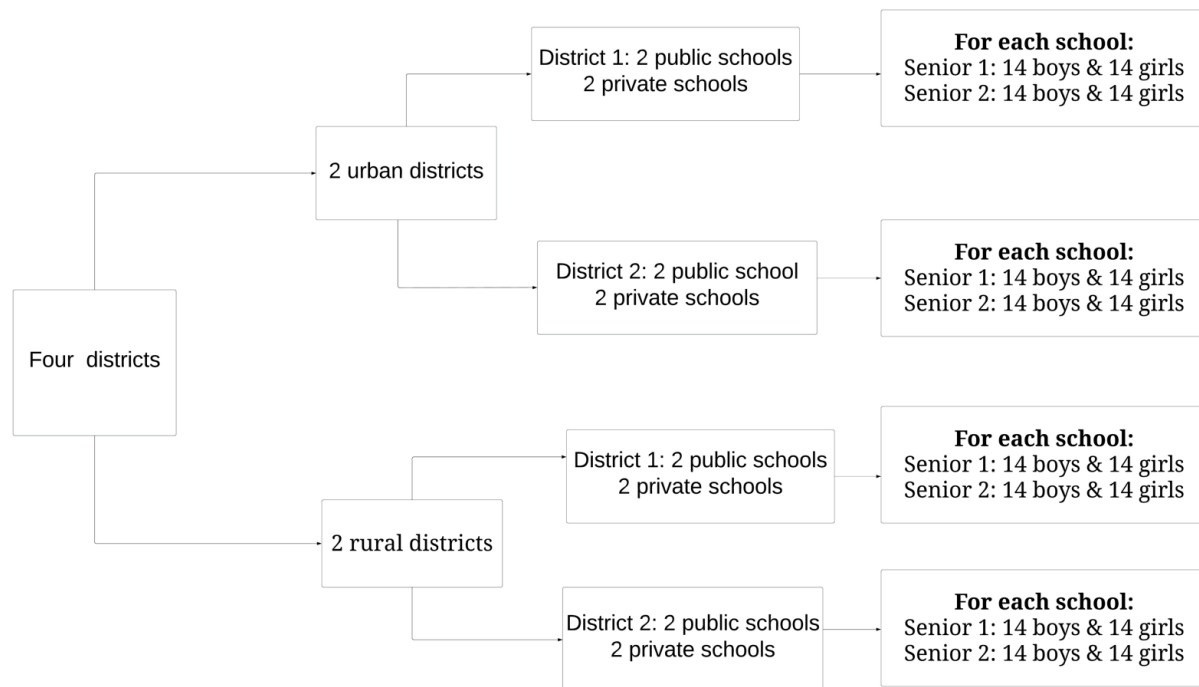


Figure 3. 3: Flowchart indicating the various levels of selecting the 811 survey participants

3.5.4.2 Procedures

We contacted Heads of schools to whom we presented necessary approval and authorisation documentation. This documentation included ethical approvals and other administrative authorisations from the relevant institutions such as the Rwanda National Council for Science and Technology (NCST), the Rwanda Biomedical Centre (RBC) and sampled Districts. We then discussed and set together the data collection plans. A research team comprising the principal investigator and eight trained research assistants collected data. On agreed dates, Heads of schools and other staff members assisted the research team in connecting with the study participants and facilitated the data collection process. Participants received information about the study's objective and topics addressed in the questionnaire. They were advised that their participation was voluntary and that they had the right to stop answering survey questions whenever they wished. Data collection occurred in classrooms where participants gathered at adequate distance to keep their

answers confidential. Each participant received a hard copy of the survey questionnaire and individual assistance from the research team members to answer the questions. Research assistants read the survey questions aloud one by one, and participants were given adequate time to record their answers on the questionnaire. Research team members monitored this whole process of data collection until completion. School counsellors were available to collect data and support participants whenever needed.

3.5.4.3 Data collection tool

We adapted and used the illustrative questionnaire for interview –survey with young people [271] and from the literature where the tool has been used [14, 209, 210, 216, 231] to collect participant data. This questionnaire was designed to investigate the sexual and reproductive health of young people, including early adolescents [235], and is approved by the World Health Organization [203]. This questionnaire is commonly used in low- and middle-income countries where high validity has been reported [193]. It has been previously used in studies on the sexual and reproductive health of adolescents [204, 209, 272, 273] and early adolescents [155, 193, 231]. Professionals translated the questionnaire into the local language (Kinyarwanda) and back-translated it into English to ensure consistency. Two experts on gender and sexuality reviewed the questionnaire and suggested amendments before use. The adapted version was pretested on 20 early adolescents from two schools that were not part of the sampled ones to ascertain the clarity and conciseness of questions. The questionnaire comprised a set of questions on knowledge about sexuality, contraceptive methods, condom knowledge and attitudes, HIV/AIDS and sexually transmitted infections, gender norms and sexuality attitudes, as well as participants' sexual experience. In addition, the questionnaire contained information on participants' characteristics.

3.5.4.4 Variables

Outcome variables. *Knowledge about sexuality* was measured using six questions with answer options of 'true', 'false' or 'do not know'. Correct answers were assigned 1 point, whereas incorrect answers and "do not know" were assigned zero points. We computed a composite score for early adolescents' sexuality knowledge that ranged from 0-6 points.

We assessed the *knowledge of contraceptive* methods using a set of 12 questions using "yes/no" options on each of the contraceptive methods stated. These methods include the pill, injection, condom, emergency contraceptive pills, withdrawal, periodic abstinence, intrauterine device

(IUD), implants, jelly, female sterilisation, male sterilisation, and lactational amenorrhea method. Each method known was assigned 1 point and zero otherwise. The total score ranged from 0-12 points.

Knowledge about and attitudes towards condoms. We used five questions with the following answer options: “agree”, “don’t know or not sure”, and “disagree”. As recommended by the questionnaire developers [271], correct answers were assigned 1 point, whereas incorrect answers were assigned 0 points. There was also one question asking participants if they had ever seen a condom with the option “Yes” and “No”. Responses were coded one if participants responded “yes” and coded 0 for “no” responses. We measured attitudes towards condoms using eight questions with three answer options: agree, do not know/not sure, and disagree. We conducted a reverse scoring on two items: *Condoms can be used more than once*, and *Condoms can slip off the man and disappear inside the woman's body*, whereby the option of “disagree” was considered the correct answer as recommended by the developers of the questionnaire. We derived a summary index for knowledge about and attitudes towards condoms (0-14) from the participants’ answers. We converted scores into percentages and then converted them into high, moderate and low knowledge.

Knowledge of HIV and sexually transmitted diseases. We asked participants if they had ever heard of HIV or AIDS with “yes” and “no” answer options. For those who responded having heard of HIV or AIDS, we asked a set of eight questions with options “true”, “false”, and “don’t know” to assess their knowledge about HIV and sexually transmitted diseases. Correct responses were assigned 1 point, whereas incorrect and don’t know answers were assigned 0 points. Four additional questions were added to assess if participants had heard of other sexually transmitted diseases, including gonorrhoea, syphilis, chlamydia, and genital herpes. Their responses were assigned 1 point in case of “yes” and 0 for “no” answers. The total scores ranged from 0-13.

Attitudes towards sexual norms. We measured participants' attitudes towards sexual norms by asking them to provide their level of agreement or disagreement (4-strongly agree, 3-agree, 2-disagree, and 1-strongly disagree) with each of the nine statements. We finally generated a composite score ranging from 9-36 to account for participants' overall attitude score towards sexual norms. Higher scores indicated positive, favourable, less traditional, or permissive attitudes, while

lower scores indicated negative, unfavourable, more traditional, or conservative attitudes [99, 201].

Attitudes towards gender. Participants responded to 10 statements to reflect on their attitudes towards gender. They had to choose between four answer options: 1-strongly disagree, 2-disagree, 3-agree, and 4-strongly agree. We summed the participants' scores to produce a total score ranging from 10 to 40 to account for their overall attitudes toward gender. Higher scores indicated a more gender-equitable attitude, while lower scores indicated a less gender-equitable attitude [199].

Sexual experience. In this study, sexual experience comprises non-penetrative and penetrative sexual experiences. We asked participants if they have ever had a partner using a dichotomous question (yes/no): do you have or have you ever had a girl/boyfriend/partner (someone whom you 'dated' (Dating: going out together unaccompanied by other adults)? Participants who responded (yes) responded to a series of dichotomous questions (yes/no) indicated in Table 5.1 to reflect on their involvement in the non-penetrative activity. Any participant who responded 'yes' to any of these questions was considered as having a non-penetrative experience. We assessed penetrative sexual experience by asking participants about their ever engagement in oral, anal, or vaginal intercourse using three dichotomous (yes/no) questions as indicated in Table 5.1. Penetrative sexual experience was derived from participants' responses to any oral, anal, or vaginal intercourse. Because we expected few cases of penetrative sexual experience among early adolescents, we preferred lifetime experience to a past year's experience for low-frequency sexual behaviours [24, 28].

Concerning *sexual behaviour*, participants were asked if they have ever used any of the contraceptive methods (pill, injection, condom, emergency contraceptive pills, withdrawal, and periodic abstinence). We also asked them about ever having a boy/girlfriend or partner, the age of the boy/girlfriend/partner, being sexually attracted to people of the same sex, the number of lifetime sexual partners, ever being forced to have sexual intercourse, ever being touched against their will on private parts; ever paying money or gifts in exchange for sexual intercourse; ever receiving money or gifts in exchange to sexual intercourse; the method used the last time of sexual intercourse; regret for having intercourse; circumstances surrounding the sexual intercourse (being forced, persuaded); perceived relationships to the first partner; the age of the first partner;

participant's age at first intercourse; plans about sexual intercourse; and feeling any pressure to have sexual intercourse.

Regarding *health outcomes*, we asked male participants about ever impregnating a girl/woman with the following options: yes, never, and not sure. We also asked female participants whether they had ever been pregnant with the same answer options: yes, never, and not sure. In addition, using dichotomous questions, we asked participants about ever doing an HIV test and ever having a sexually transmitted disease.

Explanatory variables. In addition, we collected participants' details on the different levels of the social-ecological framework: individual, family and community. Variables related to an individual level were sex (male/female), age in years, type of school attended (private/public), school grade (senior 1/ senior 2), religion (catholic, protestant, other), ever use of the mobile phone (yes/no), ever attended parties where young people dance (yes/no), ever drank alcohol (yes/no), ever smoked cigarette (yes/no), use of cannabis (yes/no), ever used internet (yes/no), and the frequency of watching pornographic films (never, 1-2 times, 3-4 times, ≥ 5 times). Variables at the family level included the parents' life status (none is alive, one parent is alive, both parents are alive), living/staying with parents (none, one, both parents), perceived difficulty in communicating with the father, mother, and brothers/sisters (measured as easy, average, difficulty, do not see him/her/them), the father and mother's level of education (primary and lower, TVET, secondary, higher), ever discussed sex matters with the father, mother, brothers or sisters (often, occasionally, never). The community level variables included the socio-economic status as measured in Ubudehe categories (poor: category 1-2, and well off: category 3-4), access to sexual and reproductive health information (measured as ever receiving information on puberty and/or pregnancy: yes/no), ever been forced to have sexual intercourse (yes/no), and ever been touched on private parts without the participant's willingness (yes/no).

In addition, we collected data on the participants' various sources of information about puberty and reproduction. Participants had to choose among several sources: Books/magazines, brothers, Doctors/Nurses, fathers, Films/Videos, Friends, the Internet, Mothers, Other family members, Radio, School teachers, sisters, and Television.

3.5.5 Focus group discussions

For the FGDs, we used a semi-structured open-ended guide developed by the researchers and piloted in one school that was not selected for the final study. The guiding questions included the following, among others:

1. What different sources of gender and sexuality information are available to you?
2. What are your preferred sources of information on gender and sexuality? What are the justifications for your preferences?
3. How do these sources of gender and sexuality information affect your knowledge, beliefs and behaviours? Is there any source of information that pushes young people to perform specific behaviours?
4. Do you think young people's knowledge, beliefs and behaviours influence their sexual experiences (e.g. kissing, touching)? How about their health outcomes (pregnancy, STIs)? How?
5. What would you recommend about proper access to SRHR information?

We conducted 13 separate FGDs based on the sex of participants to encourage openness, with 6 FGDs of male participants and 7 FGDs of female participants (Table 3.4). Each FGD consisted of 8-11 participants. Before data collection, participants received the study information and had opportunities to ask questions. We reminded them that their participation was voluntary and that they had the right to stop at any point during the study. We assured them that the information provided was to be treated confidentially. Because SRHR issues are sensitive [274], participants' privacy was seriously considered by requesting all participants to sign a confidentiality agreement that all matters discussed within the group would remain confidential. Participants were also reminded to respect members' opinions, views, and beliefs and that there were no wrong answers to questions discussed. In addition to parental consent signed by their parents, all FGD members signed an assent form after agreeing to participate. FGDs were facilitated by trained researchers of the same sex. With participants' consent, all FGDs were audiorecorded. All FGDs were conducted within the school premises and without school staff members. Each FGD lasted between 40-60 minutes.

Table 3. 4: Characteristics of the study sample for the FGDs

Focus group number	Sex of participants	Mean age $\pm$ SD	Number of participants
FGD 1	Male	12.8 $\pm$ 0.6	8
FGD 2	Female	13 $\pm$ 0.8	8
FGD 3	Male	13.5 $\pm$ 0.5	11
FGD 4	Female	13.7 $\pm$ 0.7	8
FGD 5	Female	12.7 $\pm$ 0.6	9
FGD 6	Female	13.8 $\pm$ 0.4	6
FGD 7	Male	13.5 $\pm$ 0.8	8
FGD 8	Female	13.5 $\pm$ 0.7	10
FGD 9	Male	12.8 $\pm$ 0.9	8
FGD 10	Female	13.4 $\pm$ 0.5	9
FGD 11	Male	13.1 $\pm$ 0.4	8
FGD 12	Female	14 $\pm$ 0.0	8
FGD 13	Male	13.6 $\pm$ 0.5	7
Total		13.4$\pm$0.7	108

3.6 DATA MANAGEMENT AND ANALYSIS

Policy review

Selected policies, strategic plans and laws were imported into NVivo 11 for coding and content analysis. Policy documents and strategic plans were thematically analysed using the policy triangle framework [259, 260, 262, 263, 269, 270]. We also reviewed and analysed the content of three laws: the law relating to human reproductive health in Rwanda [60], the law on prevention and punishment of gender-based violence [267], and the law governing persons and families [268].

Key informant interviews.

The audio-recorded interviews were transcribed verbatim in Kinyarwanda, and professional translators translated these transcripts into English. We used QSR NVivo 11 (QSR International Pty) for Windows to analyse the data. Using the social-ecological framework of adolescent health, we conducted a deductive analysis of perceived enablers and barriers to young adolescents' access

to SRHR information. Two researchers repeatedly read all the interview transcripts independently to familiarise themselves with the contents, and they coded the same data and compared their coded outputs to identify similarities and differences. Common agreement between these researchers allowed the resolution of discrepancies in data coding. Next, the two researchers started creating and condensing meaning units, which were later organised into codes. These codes were then organised into sub-themes and finally organised into the levels of the social-ecological framework of adolescent health: individual, relationship, community and societal (Figure 1) [246]. Finally, we presented the findings in a narrative form and used quotations to illustrate the data description at each framework level.

Curriculum review. We assessed the CSE competencies identified from the Rwanda competence-based curriculum and categorised these CSE competences per ITGSE concepts and topics [145]. These key concepts include (1) Relationships; (2) Values, Rights, Culture and Sexuality; (3) Understanding Gender; (4) Violence and Staying Safe; (5) Skills for Health and Well-being; (6) Human Body and Development; (7) Sexuality and sexual behaviour; and (8) Sexual and Reproductive Health [145]. Data from the curriculum review were summarised using frequency tables and charts and organised data per subject, school grade, concepts and topics of ITGSE. In addition, we imported interview transcripts into NVivo for Windows 11 (QSR International Pty) for thematic analysis using the ITGSE framework. Finally, we used quotations to support the description of qualitative data from key informant interviews.

The survey. We conducted data analysis in Stata 14 for Windows. We performed frequency tables for all participants' socio-demographic characteristics. The scoring of participants' knowledge and attitudes was performed as indicated by the questionnaire developers [271] and as in other studies of SRHR knowledge and attitudes [155, 201]. The number of correct responses to a set of questions in each dimension of SRHR knowledge measured SRHR knowledge. Correct answers were scored as one (1) and zero (0) otherwise. Aggregated scores were calculated for each of these dimensions. These scores were turned into per cent scores. The following categories of SRHR knowledge were derived for the dimensions of knowledge about sexuality, contraceptive methods, HIV/AIDS and sexually transmitted infection and condoms: high (80-100%), moderate (50-79%), and poor knowledge (<50%). For sexuality norms and gender attitudes, we aggregated participants' scores into overall scores and calculated the mean and standard deviation. The questionnaire used to

measure SRHR knowledge and attitudes had the following acceptable levels of reliability (Cronbach alpha value): knowledge about sexuality (0.81), knowledge about contraceptive methods (0.78), knowledge about HIV/AIDS (0.82), knowledge about condoms (0.79), attitudes towards sexual norms (0.80), and attitudes towards gender norms (0.77). We used the Shapiro-Wilk test to assess the normality of data. T-test and one-way analysis of variance (ANOVA) tests allowed for comparing two and multiple participants' mean scores. Higher scores indicated a less traditional attitude, while lower scores indicated a more traditional attitude. We conducted a bivariate and logistic regression analysis to assess the factors associated with non-penetrative experience and penetrative experience. The goodness of fit to the data was evaluated using the Hosmer-Lemeshow test, where a p-value greater than 0.05 indicated that the model provided an adequate fit to the data and that there was no statistically significant difference between the predicted and observed values. All variables with statistically significant results ($p < 0.05$) at the bivariate analysis level were taken into the logistic regression analysis to assess the effect of each explanatory variable on participants' sexual experience. We report crude and adjusted odds ratio and their 95% confidence intervals. The significance level was set at $p < 0.05$.

Focus group discussions

Like key informant interviews, FGDs were audio recorded using a digital recorder and transcribed verbatim in Kinyarwanda. FGD transcripts from focus group discussions were translated into English, imported and analysed in NVivo 11. FGD transcripts were read and re-read to become familiar with the data and capture and highlight their key points. The highlighted text was organised into codes, which, in return, similar codes were categorised into sub-themes and, finally, into themes. We presented a narrative report for each theme and supported it with quotes for the study objectives 6-7.

In the sixth objective, data from the FGDS help to understand the influences of SRHR information and knowledge on early adolescents' SRH outcomes. In the seventh objective of this research, FGDs allowed us to explore early adolescents' preferences on the sources of SRHR information and the reasons behind these preferences.

Table 3. 5: Data analysis strategies per research objectives

Objectives	Data analysis strategies
Objective 1: To assess the extent to which gender and sexuality policies address the specific needs of early adolescents in Rwanda	Thematic analysis
Objective 2: Describe the social context, including personal, relationships and community factors, influencing early adolescents' gender and sexuality knowledge, beliefs and behaviours in Rwanda.	Thematic analysis
Objective 3: To analyse Sexual and Reproductive Health and Rights (SRHR) messages conveyed to early adolescents by different sources of information in Rwanda.	Thematic analysis of CSE curriculum and interviews
Objective 4: To describe early adolescents' knowledge, beliefs and behaviours related to gender and sexuality in the selected districts of Rwanda.	Survey data: descriptive statistics: frequency tables, mean $\pm$ standard deviation; independent sample t-test for two means; one-way analysis of variance for three or more means.
Objective 5: To determine the relationship between the early adolescents' sexuality and gender knowledge, beliefs and behaviours and their sexual experiences.	Logistic regression analysis with crude and adjusted odds ratio allowed us to determine the factors associated with sexual experience.
Objective 6: To determine the relationship between early adolescents' gender and sexuality knowledge, beliefs and behaviours and specific health outcomes (STIs, pregnancy) in the selected districts of Rwanda.	Quantitative data (survey): Descriptive statistics: frequency tables, mean $\pm$ standard deviation Qualitative data (FGDs): thematic analysis
Objective 7: To determine the relationship between exposure to different sources of information and early adolescents' gender and sexuality knowledge, beliefs and behaviours in selected districts of Rwanda.	Survey data: descriptive statistics including frequency tables, mean $\pm$ standard deviation, independent sample t-test for two means; Qualitative data (FGDs): thematic analysis.

3.7 ETHICAL CONSIDERATIONS

This study obtained approvals from the Human Research Ethics Committee of the University of the Witwatersrand (study reference number: M190303), the Institutional Review Board of the College of Medicine and Health Sciences of the University of Rwanda (approval notice number: 401/CMHS IRB/2018) and the National Council for Science and Technology of Rwanda (no. NCST/482/136/2019). All participants provided signed written informed consent forms before the interviews. All methods in this study were performed by relevant ethical guidelines and regulations for research involving human subjects.

Before data collection, we sought and obtained parental informed consent from participants' parents or legal guardians and participants' informed assent. We collected data anonymously using personal identification codes on the questionnaires. We conducted this study following all national research regulations and the principles governing research involving human subjects.

For the FGDs, all participants signed a confidential agreement not to reveal what was discussed within the group to non-group members. Furthermore, a distress management protocol was followed during the survey and FGDs. We anticipated that early adolescents might feel uncomfortable during the process of data collection and be distressed after revealing their gender and sexuality identities and disclosing their status about sexually transmitted diseases. This protocol was intended to:

1. Seek permission from the participant to continue the interview after asking sensitive questions;
2. Provide support if the participants feel uncomfortable;
3. Refer the participant to the school counsellor or any other health professional of his/her choice for appropriate support, and eventually refer him/her to the nearest health facility for support if the situation worsens;
4. Avail participants a list of emergency numbers for additional support;
5. Recommend that the participants seek care from a health facility if they declare having an untreated sexually transmitted disease.

3.8 DATA QUALITY ASSURANCE

3.8.1 Quantitative study

Professional translators translated the survey questionnaire from English to Kinyarwanda and back-translated it into English to ensure similarity with the original version. The Kinyarwanda version of the questionnaire was pilot-tested on a small number of early adolescents who were not part of the study's final sample. The pilot test helped to identify issues and barriers to the effective recruitment of participants and to modify interview questions where necessary [275].

3.8.2 Qualitative study

The trustworthiness criteria were considered: credibility, dependability, confirmability, transferability [276, 277]. Credibility refers to the confidence in the truth value of the findings; dependability is about the stability of data over time and conditions; confirmability refers to the objectivity or neutrality of data; and transferability is the extent to which findings can be transferred to other settings or groups; authenticity is the level to which the researcher's report fairly and faithfully reflects and reports on the data, with the feeling tone of lives as they are experienced [276].

In this study, credibility was assured by taking field notes, maintaining a good rapport between interviewer and interviewee, maintaining gender compatibility, and training data collectors. At the same time, dependability was reached through a clear definition of participants, explicit sampling and data analysis plans, and data saturation. Two independent data analysts and follow-up of data transcription, translation, and transferability were achieved through the variability of participants' affiliations for confirmability.

3.8.3 Minimisation of the social desirability bias

Social desirability bias reflects study participants' tendency to distort their answers in a way to be viewed positively by others, with the influence of social norms and expectations [278], but not fully corresponding to reality [279]. Social desirability bias is motivated by the predisposition "to deny socially undesirable traits and claim other socially desirable ones." [279] Generally, social desirability is thought to be frequent for sensitive questions and those involving judgements, such as those related to sexuality and family planning [278]. Social desirability bias can be minimised in research, and some studies indicate various ways of minimising this type of bias [279, 280]. The following paragraph outlines how social desirability in this research was minimised.

First, the study was planned by clearly defining the focus, research objectives, and tools, which allowed the researcher to reduce confusion and keep focused on the purpose and study procedures. Multiple sources of information were involved sequentially (document reviews, interviews, focus group discussion and a survey), allowing triangulation of data and minimising bias in findings. Second, research assistants were trained about the research topic and the importance of building trust and good relationships with the participants. Furthermore, before data collection, participants

were assured about their anonymity and confidentiality of data, which allowed the researcher to build strong trust relationships with them. During data collection, the researcher encouraged participants to share their views or disclose socially disapproved phenomena, which would not be judged negatively by the researcher. In addition, the order of the questions allowed them to move from general to sensitive questions, and the wording of these questions was approved by two gender and sexuality experts. Data collection took place in a conducive environment, which enhanced privacy, and only participants and the researcher attended the data collection venues, avoiding external influences on interruptions. Finally, focus group discussions were organised separately for boys and girls, which allowed open debate on the researched subjects.

3.9 INTEGRATION OF THE FINDINGS

The findings from this research are integrated into a specific chapter of the current thesis.

3.10 DISSEMINATION OF THE RESULTS

The final report of this research allows dissemination of the findings to a wide community of SRHR researchers, policymakers and others. In addition, abstracts and full papers were shared with local and international fora and conferences or peer-reviewed journals. Findings from this research were disseminated during the Consortium for Advanced Research Training in Africa (CARTA) eighth Annual Joint Advanced Seminars (JAS4) Conference held virtually on 23 September 2021. In addition, part of these findings were disseminated in the international conference held in Kigali, Rwanda, by the Centre for International Reproductive Health Training (CIRHT) at the University of Michigan between 5-7 October 2022 under the theme of *Sexual and Reproductive Health: Informing Policy and Practice through Research and Preservice Training*. The presentation was titled: Does access to sexual and reproductive health and rights information affect very young adolescents' knowledge in Rwanda? Evidence from a school survey. Findings from this research were also presented in the Wits SPH Research Day and CARTA Conference between 14-15 September 2023 in Johannesburg, South Africa, with a theme: "Deepening the Public Health Footprint in Africa: Building on Successes and Challenges". The presentation was titled: Influences of sexual and reproductive health and rights knowledge on early adolescents' sexual health outcomes in Rwanda: a mixed-method study. In addition to conference presentations, two publications emanated from this research. The first publication was titled: "Such conversations are not had in the families": a qualitative study of the determinants of young adolescents' access to

sexual and reproductive health and rights information in Rwanda and was published in the Journal of BMC Public Health on October 7th, 2022. The second publication was title: “Not just the consequences, but also the pleasurable sex”: a review of the content of comprehensive sexuality education for early adolescents in Rwanda. It was also published in the Journal of BMC Public Health on January 7th, 2023. A third manuscript, under review, has been submitted to the Journal of PLOS One and is entitled: Sexual experiences among early adolescents aged 12-14 years in four districts of Rwanda: a cross-sectional study.

3.11 CHAPTER SUMMARY

This chapter describes the study sites, population and sample for various study objectives, the study phases and the design and procedure undertaken for each phase. The chapter further discusses strategies for data management and analysis, ethical considerations and data quality assurance, and the integration and dissemination of the findings.

CHAPTER FOUR

GENDER AND SEXUALITY POLICIES FOR EARLY ADOLESCENTS IN RWANDA

4.1 INTRODUCTION

This chapter provides the findings from the gender and policy review. The review aimed to assess the extent to which gender and sexuality policies address adolescent sexual health needs, particularly among early adolescents in Rwanda (the first objective of this research). The review focused on the policy context, content, process and actors and followed the policy triangle framework [258] as earlier presented in Chapter 3.

4.2 CONTEXT

Rwanda aligns with international and national commitments to promote early adolescent sexual and reproductive health and rights. Therefore, both international and national contexts influence gender and sexuality policies.

4.2.1 Economy

In terms of economy, Rwanda is one of the poorest countries worldwide [58], with a growing economy of 8.2% growth in 2022 [281]. The Rwanda economy is dominated by agriculture by 90% of households [58]. The service sector is growing fast and remains Rwanda's largest gross domestic product [58].

4.2.2 Health Sector System

The Rwandan health system has several administrative levels, from the lowest to the highest. The health system structures are the community health workers at the village level, the health post at the cell level, health centres at the sector level, district hospitals and pharmacies at the district level, provincial hospitals, and the national referral and teaching hospitals. In addition to these public healthcare institutions, the Rwandan health system has private healthcare facilities and a referral system [266]. In terms of financing, the Rwandan health system relies heavily on external funds despite the government's effort to increase health spending [58, 176, 265]. Given the countrywide expansion of the health sector, the Rwandan health system still experiences insufficient qualified staff and inadequate service skills [176].

Regarding healthcare accessibility, geographical accessibility remains a challenge, as 23% need to walk more than an hour to reach the health facility [58, 265]. In 2009, the majority of the population (92%) owned health insurance [249], and community health-based insurance (mutuelle de santé) remains the most crucial population health insurance option, with 96% of the population [58]. Other insurance schemes cover the remaining part of the population.

Concerning the community health organisation, Rwanda has established a community health program system whereby each village counts three community health workers (CHWs). Each CHW has a mobile phone that links him/her with the health centre. Some interventions target the use of these mobile phones in the fields of adolescent sexual and reproductive health and rights and gender-based violence.

4.2.3 Population

Concerning the population, Rwanda is the most densely populated country in Africa, with 436 persons per square kilometre [58, 176]. Rwanda experiences a decrease in child mortality that leads to an increase in adolescents [58]. The population of Rwanda is essentially young, with 52% being younger than 20 years [56]. Early adolescents (10-14) comprise 17.1% of the Rwandan population [58]. The female population remains slightly higher (52%) than men [58, 176]. Rwanda aims to reduce the teenage pregnancy rate (15-19 years) from 7.3% by 2024 [266]. Furthermore, HIV prevalence is 3% of adults and remains the lowest in sub-Saharan Africa [56, 58, 265]. The average fertility rate for a Rwandan woman has downgraded from 6.1 in 2005 to 4.2 births in 2014/15 [56, 58, 255, 265].

4.2.4 Education

In terms of education, access to education is equally granted to boys and girls [57], and the majority of adolescents (10-19 years) attend school [58]. In 2008, the Government of Rwanda established the Girls' Education Policy [264] to ensure girls' access to education and retention at all levels of the education system. Rwanda also promotes information and communication technology literacy among schoolchildren through the One Laptop per Child programme. Due to this program, girls and boys in schools use computers and the internet for their daily learning and research activities [264]. In addition, Rwanda established a national school health policy that mentions using a

holistic approach to address issues related to HIV and AIDS and sexual and reproductive health [177]. Substance use among school children and youth is common, and the school health policy mentions that tobacco use and alcohol consumption are the most used substances [177]. Finally, in 2016, CSE was introduced in schools through the competence-based curriculum to enhance learners' decision-making skills about their sexual relationships, explain feelings, values and attitudes, and promote risk-reducing behaviours [178].

4.2.5 Adolescent Sexual and Reproductive Health and Rights

Concerning adolescent sexual and reproductive health, there is a lack of youth-friendly facilities [265]. However, a training manual on youth-friendly health services has been developed, and 500 staff members from 240 health facilities have been trained [176]. Furthermore, adults, including parents, have cultural difficulties in talking about sex education with young adolescents [184]. Discussion about sexuality remains taboo for parents, teachers, and even between partners, which leads to difficulties in negotiating safer sex for adolescents [58]. Adolescents have inadequate knowledge about sexual and reproductive health and rights, as well as places to seek information about this topic [58]. This inadequate knowledge predisposes adolescents to the risk of HIV and AIDS, in addition to substance and alcohol use [58]. Furthermore, the sexual and reproductive health status of adolescents aged 10-14 years remains unclear [58]. The sugar daddy/mummy phenomenon has emerged mainly in secondary schools. This is attributable to economic factors of gaining money or gifts [58]. For sexually active adolescents, there are also legal hindrances to access and consent for sexual and reproductive health services: adolescents aged 18 years and above are eligible for reproductive health services (article 7 of the Reproductive Health Law). However, articles 8 and 13 highlight, respectively, that every person has the right to education and medical services and that every person must protect himself/herself and others against sexually transmitted diseases [184]. In addition, adolescents remain reluctant to seek services because of a lack of privacy and concerns over confidentiality [176]. Regarding sexual orientation, homosexuality is not illegal in Rwanda but remains strictly against societal norms [58].

Concerning family planning, Rwanda has an upward trend in modern contraceptive use among married women, from 4% in the year 2000 to 53% in 2014/15 [255, 265]. In addition, regionally, Rwanda has lower rates of sexual activity among the population aged 15-19 years [184]. In the family planning policy, mass media addresses myths and misconceptions about family

planning[266]. In the health sector strategic plan for the period of 2018-2024, Rwanda would like to link its National constitution, the Vision 2050, the health sector policy, the national strategy for transformation, the universal health coverage principles and the sustainable development goals

4.2.6 Gender issues

In terms of gender, the gender policy highlights that Rwandan society relies on the patriarchal system whereby men have more power than women and where boys have more value than girls [57]. The traditional Rwandan society has created gender norms and ideals that still affect the sexual and reproductive health of adolescents [58]. In addition, gender-based violence (GBV) is rampant despite different initiatives to address it. The policy highlights that victims of GBV are mainly women. Rwanda has established different programmes to address GBV, such as the Isange (Welcome) One Stop Centres to eradicate GBV. These centres provide medical, psychosocial and legal support to the survivors of GBV [57].

Furthermore, Rwanda promulgated a law on the prevention and punishment of GBV [267]. Rwanda has anti-GBV and child protection committees at the local and national levels. Other initiatives in Rwanda to address the GBV include the establishment of a free hotline (116 for child help, 3512 for anti-GBV, and 3029 for Isange One-Stop Centre) and the gender desk in the Rwanda National Police, the Rwandan Army, and the National Public Prosecution Authority [267]. This makes gender a cross-cutting issue [58]. Despite the existence of GBV, awareness about gender is improving as well.

4.3 CONTENT

This section provides the findings on the policy on gender and sexuality about access to gender and SRHR information in Rwanda. It outlines the policy's vision, mission, goals or aim, objectives, service package, activities, focus, and principles. In addition, a review of the content of available laws on reproductive health, gender-based violence, and persons and families is presented.

The content of the adolescent sexual reproductive health and rights policy [58] indicates that this policy aimed to improve the sexual and reproductive health status of adolescents in Rwanda. The general objective is to ensure all adolescents access and use quality, comprehensive SRH information, education and services in a conducive (youth-friendly) environment. Furthermore, the policy highlights the availability of the following programs for adolescents in Rwanda: school-

based reproductive health education, peer education programs, youth-friendly centres, vocational training for youth, income generation activities, including adolescents, HIV counselling, and mass media activities. The policy also indicates that there are reproductive health services on contraception and family planning that are provided to the general population by the health facilities. The policy indicates that the following services are available to adolescents: information and counselling on SRHR, access to family planning methods, youth-friendly antenatal care; voluntary counselling and testing (VCT) for HIV and the prevention of other STIs; information and counselling and vaccination of cervical cancer; prevention and management of gender-based violence; prenatal consultation in addition to a friendly interrogatory to teen mothers; and life skills education [58].

The National Reproductive Maternal, Newborn, Child and Adolescent Health (RMNCAH) Policy [176] aims to achieve the highest attainable standard of health across the life course for children and adolescents. The policy's mission is to ensure that all children and adolescents have universal access to quality integrated child and adolescent health equitably, efficiently and sustainably. The policy aims to promote rights-based well-being using a multi-sectoral approach and universal access to healthcare. The policy focuses mainly on adolescent health in the following areas: social determinants of poor adolescent health, youth-friendly adolescent services delivery, training of healthcare providers for adolescent health interventions that respond to life course approach, gender-based-violence, menstrual hygiene management at school, laws related to adolescent SRH, adolescent's access to services, and use of innovative mechanisms to reach adolescents.

The National Family Planning and Adolescent Sexual and Reproductive Health (FP/ASRH) Strategic Plan (2018–2024) [184] has a mission to grant equitably, efficiently, and sustainably to adolescents universal access to quality integrated family planning and adolescent sexual and reproductive health information and services. The strategic objectives focus on providing and improving health information to adolescents. Related objectives include the implementation of comprehensive sexuality education in schools and the use of mass media campaigns and entertainment for accurate ASRH information. The development of appropriate materials to help parents deliver ASRH information to adolescents, as well as the use of social media and online materials to create awareness about ASRHR and services. Other objectives include enhancing the capacity building for teachers, parents, and community and religious leaders for FP/ASRH services

and the capacity building of youth-friendly centres. Furthermore, addressing sexual and gender-based violence (SGBV), improving linkage to anti-SGBV services (Isange One-Stop Centres), and undertaking legal reforms on adolescent health are among the top priorities.

The National School Health Policy [177] envisions achieving children's total development in healthy and child-friendly schools, free from disease, prejudice and violence. Among other priorities, the policy aims to enhance the knowledge of children and teachers about sexual and reproductive health, GBV, prevention of HIV, AIDS and other diseases. The policy targets the following issues: health promotion; disease prevention and control; HIV, AIDS and other STIs (Human papillomavirus (HPV); Sexual and reproductive health and rights (Access to information about contraception, safer sex, STIs); environmental health; School nutrition; physical education; mental health; gender and GBV issues (sexual violence and adolescent pregnancy).

The Girls' Education Policy [264] envisions a society free of gender disparities. This policy aims to enable gender equality in education and training. The policy has specific objectives that consist of protecting girls and boys from sexual harassment and unwanted sexual advances in educational settings, enhancing sex and family life education in the school curriculum, and ensuring that the school curricula focus on life skills and leadership and promote self-confidence and self-esteem for girls. One of the guiding principles of this policy is training teachers and education managers on gender issues and building the capacity of female teachers and managers.

The Health Sector Policy [26] aims to contribute to the general well-being of the population by providing and continually improving affordable healthcare services. The policy ensures universal geographical and financial access to equitable and affordable health services. The policy also outlines its directions in the area of maternal and child health as follows: adolescent reproductive health, family planning, prevention and care of violence, prevention and care for genital infections and HI, addressing tobacco consumption and alcohol use as risk factors for non-communicable diseases, and social change for the women's empowerment.

The Family Planning Policy [265]) aims to increase family planning for men and women of reproductive health. The general objective of the policy was to increase the use of modern contraceptives use by women in union to 70% in 2016. For adolescents, the policy aims to ensure sufficient focus and expansion of adolescent SRH programs and their provision in a youth-friendly manner; providing accurate and confidential counselling to clients, including adolescents;

increasing adolescents' knowledge and promoting the uptake of family planning; enhance parent-child communication and sexuality education; and strengthening a conducive family planning environment.

The vision of the National Gender Policy [57] is to set a society free from gender-based discrimination and eliminate gender inequalities in layers of national life. The policy program includes raising gender awareness, ensuring that boys and girls receive adequate information on reproductive health, offering reproductive health services in a gender-sensitive manner, granting equal access to HIV information, the rule of laws, focusing on women's access to information using ICT (internet), especially those from rural settings.

The Fourth Health Sector Strategic Plan July 2018 – June 2024 [266] envisions a health sector that focuses on providing equitable, accessible, and quality healthcare services in an integrated way. This plan outlines the following priorities for adolescent SRH and GBV: integrated education on SRH for adolescents, scaling up the management of GBV at the health facility level, and enhancing the social reintegration of the GBV victims.

In addition to policy documents and strategic plans, the review also involved the content of three laws in Rwanda. These are the law governing persons and family [268], the law relating to human reproductive health N° 21/2016 of 20/05/2016 [60], and the law N°59/2008 of 10/09/2008 on prevention and punishment of gender-based violence [267]. The law governing persons and families [268] has one significant aspect of access to gender and sexuality information in Rwanda. It defines the age of the majority as 18 years. Accordingly, individuals who attain this age are fully qualified for all civil life acts, including those involving SRH and rights. The law relating to human reproductive health [60] outlines the following components of reproductive health: safe delivery; care of the newborn; family planning; prevention and treatment of STIs and other infections affecting the reproductive health system, infertility; prevention of GBV and care of GBV victims; and raising awareness to change people's attitudes. The law grants all people equal rights to human reproductive health (article 5), access to education and medical services (article 8), and HIV testing (article 10). The law mentions the obligation of biological parents and guardians to discuss reproductive health with their children. Furthermore, this law obliges the schools and the literacy centres' curricula to include courses on human reproductive health (article 19). The laws dictate that the government also has this training obligation towards health professionals, community

health workers, teachers, other local authorities, the private sector, and the youth on human reproductive health. Despite having equal rights to human reproductive health, this law reinforces that only people who have attained the age of majority (18 years) can decide for themselves about reproductive health matters (article 7).

The law on the prevention and punishment of gender-based violence [267] defines GBV and its scope, as well as sexual slavery. The protection of children against GBV remains the responsibility of parents, trustees and other people (article 7), and every person must prevent GBV, rescue, or call for rescue of the victims of GBV. In addition, article 10 of this law reprimands the use of all means, including drugs, signs, or language, to exercise GBV. In addition, the law provides penalties for different acts, including rape (article 16), child neglect (article 18), and refusal to assist the GBV victim or testify over the violence (article 36).

4.4 PROCESS

This section presents the findings on the processes related to policy or strategy development and implementation of delivering gender and sexuality education in Rwanda. It articulates the policy development, implementation, monitoring and coordination processes reflected in the reviewed policies.

4.4.1 Development process

Policy development involves consultations with multiple stakeholders at various levels (local and international), review and validation workshops of policy drafts, and approval by relevant ministries or the Cabinet [56, 176, 177]. The development process also consisted of conducting desk reviews, further analysis of Demographic and Health Surveys, consultation of family planning goals, research with older adolescents (16-19 years) and other relevant stakeholders, literature review, surveys with stakeholders, and family planning roundtables [57, 184]. Furthermore, the policy initiation process involves preparatory meetings with various stakeholders, including the Ministry of Health (MoH), the consulting team, and the health sector working group (HSWG) [266]. The process also involves a joint health sector review meeting between stakeholders and the Ministry of Finance and Economic Planning (MINECOFIN), desk review, key informant interviews, field visits, consultative workshops and submission of drafts for further feedback and comments before final review [266].

4.4.2 Implementation of the policy

Implementing gender and sexuality policies includes a wide range of actions/strategies. These include integration of services into existing ones; training of healthcare providers, strengthening existing services; decentralisation of services at the village level, involvement of stakeholders including adolescents and others; pre-and in-service training (e.g. healthcare providers, students and teachers for school health); sensitisation of stakeholders including opinion, community and religious leaders and parents, peer education programmes, documentation and research, establish and amend related laws, structural adjustment of healthcare institutions such as health centres, improve service delivery, joint planning, advocacy, regular joint health sector review, use of same-sex providers during clinical examination, no use of speculum examination for prepubertal adolescents [58, 177, 184]. The implementation also involved collaboration between technical working groups, social cluster ministries, and joint health sector reviews [176]. It also consists of task sharing among stakeholders (e.g. Rwanda Biomedical Centre, Ministry of Local Administration-MINALOC), requests for investments from the private sector, and research and innovation [176]. Implementation is also achieved through the use of annual plans, collaboration between partners (key and other ministries, local authorities, local and international organisations, United Nations agencies, civil society, development partners, private sector, and community), and periodic measurements of outputs, outcomes and impact indicators [177, 184, 266]. Annual external reviews and meetings between MoH and other development partners are also conducted [266]. Implementation also involves strengthening the multisectoral approach, minimising activity overlap and monitoring through the District Health Information System (DHIS2) [184]. For some policies, such as school health policy, the implementation was assured by steering committees comprising core decision-makers from key ministries and other partners and technical working groups to support the steering committees [177].

In addition, specific units at key ministries oversee the implementation of activities, and specific committees, such as school health committees (School level) and maternal and child health-family planning desk (MoH level), were created [177, 265]. In addition, specifically for the school health policy, implementation included the review of HIV/AIDS and STIs curriculum, education of peers, creation of school health clubs, production of teaching materials about HIV/AIDS, involvement of the school management, and use of monitoring and evaluation system [177]. The implementation

of school health policy is also achieved through encouraging communication with parents, teachers and school children on SRHR issues such as early pregnancy, STIs and school-related gender-based violence (SRGBV) [177]. It also consists of creating referral systems for the SRGBV and mental health issues [177]. Furthermore, implementation targets expanding sexual and gender-based violence (SGBV) services at the health centre level, increasing the testing capacity of laboratories, enhancing follow-up of SGBV victims, using technology for SGBV case detection and use of DNA laboratories [266].

Implementation strategies of the national gender policy include a gender mainstreaming approach, affirmative actions, institutional capacity development, development of gender capacity-building programs, address GBV; involvement of men in accessing healthcare programmes such as family planning, SRH, HIV/AIDS; equipping vulnerable groups with adequate knowledge and skills for self-employment and access essential services; harmonisation of gender-related interventions, sensitising men to address gender issues [57].

4.4.3 Monitoring/coordination of the policy

Monitoring of the policies is assured through partnerships between stakeholders and enhancing e/mHealth systems, traditional reports, and national Health Management Information systems (HMIS) [176], use of Rwanda Health Management Information System (RHMIS), and the Community Health Workers Information System (SISCom) [56]. Coordination is assured by key ministries such as the Ministry of Health, Rwanda Biomedical Centre (RBC), and development partners [184]. Specifically for the health sector policy, the coordination is assured by stakeholders at national, regional, and international levels [56]. For the governance of this policy, various committees at the district level get involved in the decision-making process and establishment of the Joint Action Development Forum (JADF) [56]. MoH also created a health sector working group (HSWG), a technical working group (TWG), and a single project implementation unit (SPIU) to ensure effective coordination of activities [266]. Coordination also involves national and international cooperation, regional integration (East African Community), and alignment with the World Health Organisation and other international health regulations [266].

Monitoring strategies for gender disparities include the use of a gender-sensitive curriculum which enhances self-confidence and self-esteem among girls, protects students, especially girls, from

physical, mental and sexual abuse, and protects against sexual harassment and sexual advances in school settings [264]. Multiple partners (bilateral and multilateral donors, international and local non-governmental organisations, and the private sector) coordinate the family planning policy [265]. Monitoring is assured at various levels, such as community health workers, health centres and district hospitals, and the Ministry of Health [265].

Monitoring of the national gender policy is assured through annual follow-up and evaluation of activities, annual meetings with stakeholders, gender networking, use of gender analysis tools, capacity building of stakeholders, research on gender critical issues and use of gender-sensitive indicators [57].

4.5 ACTORS

This section provides an overview of the policy and strategic plan actors involved in gender and sexuality education of early adolescents in Rwanda and their responsibilities, where applicable.

Adolescent Sexual Reproductive Health and Rights Policy 2011-2015

This policy indicates that several actors are implementing it at different levels. Actors at the local level include parents, community and opinion leaders, teachers and adolescents. The MoH promotes the full participation of adolescents in reproductive health and development programs and services, including conceptualisation, design, implementation and evaluation.

At the health centre level, the health centre is responsible for all adolescent reproductive health activities in each catchment area, including schools, community and health facilities. Other actors operating at the health centre include the focal point for ASRHR and two peer educators (a male and a female). The health centre collaborates with youth-friendly centres.

At the central level, the MoH provides guidelines on the care of adolescents. In addition, the Sub-Working Group on adolescent sexual and Reproductive Health and Rights (ASRH&R under the Maternal and Child Health Technical Working Group in the Ministry of Health developed a training manual and guidance for healthcare providers to implement youth-friendly services. Other actors include the social cluster ministries.

Other partners include parliamentarians, the Rwanda National Police, UN agencies and nongovernmental organisations, the Health Communication Centre (HCC), the central agency for

the purchasing of essential drugs in Rwanda (CAMERWA), the National Women Council, the National Youth Council, the district ASRHR Sub-Committee, and the Rwandan private sector federation.

National Reproductive Maternal, Newborn, Child and Adolescent Health (RMNCAH) Policy

The policy indicates that the Government of Rwanda is the main actor in leading the implementation of this policy. The Rwanda Biomedical Centre (RBC), through the Department of Maternal, Child and Community Health, is responsible for implementing most ASRHR programs. In addition, the Institute of HIV/AIDS, Disease Prevention and Control at RBC, the Rwanda Health Communication Centre, the Medical Research Centre and the Planning, Monitoring and Evaluation and Business Strategy Division are actively involved.

Additional actors operate in groups such as the social cluster ministries such as the Ministry of Health (MoH); the Ministry of Local Government (MINALOC); Ministry of Agriculture and Animal Resources (MINAGRI); the Ministry of Gender and Family Promotion (MIGEPROF); Ministry of Education (MINEDUC); Ministry of Youth, Information and Technology (MYICT); Ministry of Infrastructure (MININFRA); and the Ministry of Disaster Management and Refugee Affairs (MIDIMAR). Furthermore, the Health Sector Working Group (HSWG) is another actor. The HSWG is under the overall leadership of MINECOFIN and is chaired by the MoH with a co-chair from Development Partners. Another group of actors is the Joint Health Sector Review. This group comprises the MoH, Rwanda Biomedical Centre and Development Partners (DP), civil society organisations (CSOs) and the private sector. Local and national development partners and the international community support MoH in this implementation. Other key stakeholders include young people, adolescents, parents, community opinion leaders, teachers, and social media. Finally, schools provide education on ASRHR and gender-based violence.

National Family Planning and Adolescent Sexual and Reproductive Health (FP/ASRH) Strategic Plan (2018–2024)

As specified in this plan, various actors cooperate to implement this strategic plan through the Rwanda Biomedical Centre (RBC) under the MOH. The MoH is the coordinator of interventions. A Technical Working Group (TWG) coordinates the overall implementation of the RMNCAH

policy. In addition to MoH, partnerships exist between other key Government Ministries, local authorities, civil society, development partners, the private sector, and the community through reliable funding sources. The coordination also involves the Ministry of Gender and Family Promotion (MIGEPROF), the Ministry of Finance and Economic Planning (MINECOFIN), the Ministry of Sports and Culture, the Ministry of Youth and other relevant ministries. Additional ministries include MINALOC as a key MoH/RBC partner in implementation at the sub-national level, MINEDUC, the Ministry of Infrastructure (MININFRA), and the Ministry of Youth, Information and Communication Technology (MYICT).

Furthermore, the implementation brings together the private sector, religious organisations, civil society organisations (CSOs), and youth associations. Additional actors include the Maternal Child Health Technical Working Group (MCH TGW), USAID, MCSP, UNICEF, UNFPA, and Partners in Health (PIH). Parents and other community members are also actors in implementing this strategic plan. Parents are active through their evening meetings known as “*umugoroba w’ababyeyi*”. Mass media contribute to sensitising these parents and the community in general. The policy also mentions that adolescents and youths are key to implementing this ASRHR strategic plan.

National School Health Policy

This policy indicates that the Ministry of Education is responsible for Rwanda's school health (SH). However, other ministries and agencies support the Ministry of Education. These agencies include local and international organisations, UN agencies (WFP, UNICEF, UNFPA, WHO, FAO), USAID projects, the private sector and other health and education sector implementing partners. In addition, the school health steering committee, supported by the school health technical working group (SH TWG), is operational. This SH TWG comprises technical staff from key institutions, UN agencies, and NGOs and is chaired by the Ministry of Education (MINEDUC). Key ministries and government agencies include, in addition to MINEDUC, the Ministry of Health (MINISANTE), the Ministry of Agriculture (MINAGRI), the Rwanda Education Board (REB), the Ministry of Infrastructure (MININFRA), the Ministry of Gender and Family Promotion (MIGEPROF), and Ministry of Local Administration (MINALOC). Another actor at the MINEDUC level is the crosscutting programs unit. This unit coordinates the implementation of SH program activities. It is responsible for monitoring and evaluating the

implementation of the SH activities at the district, sector, cell and school level, as well as reporting to the SH TWG. Furthermore, private sector and civil society organisations (CSOs) actors exist.

At decentralised levels, the District SH committee coordinates the SH activities. This committee involves different actors such as the vice-mayor in charge of social affairs, district education officer, district health officer, agriculture officer, school feeding officer, faith-based organisations' representative, and private sector federation representative. At the sector and cell level, SH activities are coordinated by the unit in charge of social affairs. The coordination of SH activities at the school level is assured by the School Health Committee, which consists of the head teacher (headmaster/tress), the teacher in charge of the school health club, a representative from students, a representative from Parents and Teachers' Association (PTA), a store manager and one nurse from the nearest health facility. The school also appoints one focal point teacher responsible for the SH program. In addition to these actors assuring the coordination of the SH program, schoolchildren, as primary beneficiaries, parents, and community members are involved to some extent in the SH activities.

Girls' Education Policy

The review of the girls' education policy found that the Ministry of Education (MINEDUC) is the leading and responsible actor. The MINEDUC is responsible for training, building capacity, increasing the number of girls in schools, and sensitising the general population to educate children. The monitoring is conducted by different actors from the government and private sectors, and they include ministries such as MIGEPROF and MINECOFIN; other government institutions such as the Rwanda Education Board (REB) and the Rwanda National Police; and NGOs such as the Forum of African Women Educationalists (FAWE) and Protection and Care of Families Against HIV/AIDS (PACFA) which changed the name to Imbutu Foundation since 2007 [282].

Health Sector Policy

The Health Sector Policy indicates different actors in the health sector policy. The Ministry of Health assures the management of central functions such as priority setting, financial management, budget execution, and audits. The Rwanda Biomedical Centre (RBC) is the implementing MoH agency of the policy and other health programs. RBC implements programs such as HIV/AIDS, Disease Prevention and Control, the Medical Production and Procurement Division, the

Biomedical Services Division, Rwanda Health Communication Centre, the Medical Research Centre, and the Planning, M&E and Business Strategy Division. In addition to MoH and RBC, MINECOFIN and MINALOC are the main actors in the health sector policy. At decentralised levels, all levels of the health sector are actors in the health policy.

Concerning coordination, the Joint Action Development Forum (JADF) coordinates local health interventions. At the central level, the Health Sector Working Group (HSWG) and the Technical Working Group are actively involved in the policy activities. The Health Sector Working Group HSWG comprises representatives of the MoH, development partners, and civil society. At the same time, technical working groups (TWGs) involve staff of MoH staff with representatives of development partners, NGOs, FBOs, and CSOs. Additional actors include the Single Project Implementation Unit (SPIU) and national and international cooperation stakeholders (Multilateral, bilateral and nongovernmental cooperation). Finally, there are actors from the East African Community (EAC), Professional councils, and the private and not-for-profit sectors.

Family Planning Policy

Concerning implementing this policy, the MoH is responsible for coordinating and implementing the country's health activities and programs. In addition, the MoH benefits from the collective role of stakeholders that include all ministries and agencies, development partners, religious organisations and faith-based institutions, research institutions, community-based organisations (CBOs) and NGOs. In terms of finance and advocacy, the MoH collaborates with the Rwandan Parliamentarians' Network on Population and Development (RPRPD), the Ministry of Finance, the Ministry of Local Government (MINALOC), and the Ministry of Gender and Family Promotion (MIGEPROF), for resource allocation for policy interventions. Furthermore, international agencies, NGOs, and faith-based organisations (FBOs) are actively involved.

Concerning coordination, policy actors contribute through various working groups, as depicted in Figure 4.1. These include the Development Partners Coordination Group (DPCG), the Budget Support Harmonization Group (BSHG), sector working groups and technical working groups (TWGs). The Ministry of Finance chairs the DPCG, the highest-level coordinating body and oversees the aid coordination system. DPCG coordinates an annual Development Partners' Meeting (DPM) and Development Partners Retreat (DPR) for dialogue between the Government

of Rwanda (GoR) and its development partners. The BSHG is a TWG of the DPCG that coordinates budget support. The Health Sector Working Group (HSWG) is the main coordinating body co-chaired by the MoH and a rotating lead development partner. The FPTWG coordinates and provides leadership related to policy implementation and strategic orientation.

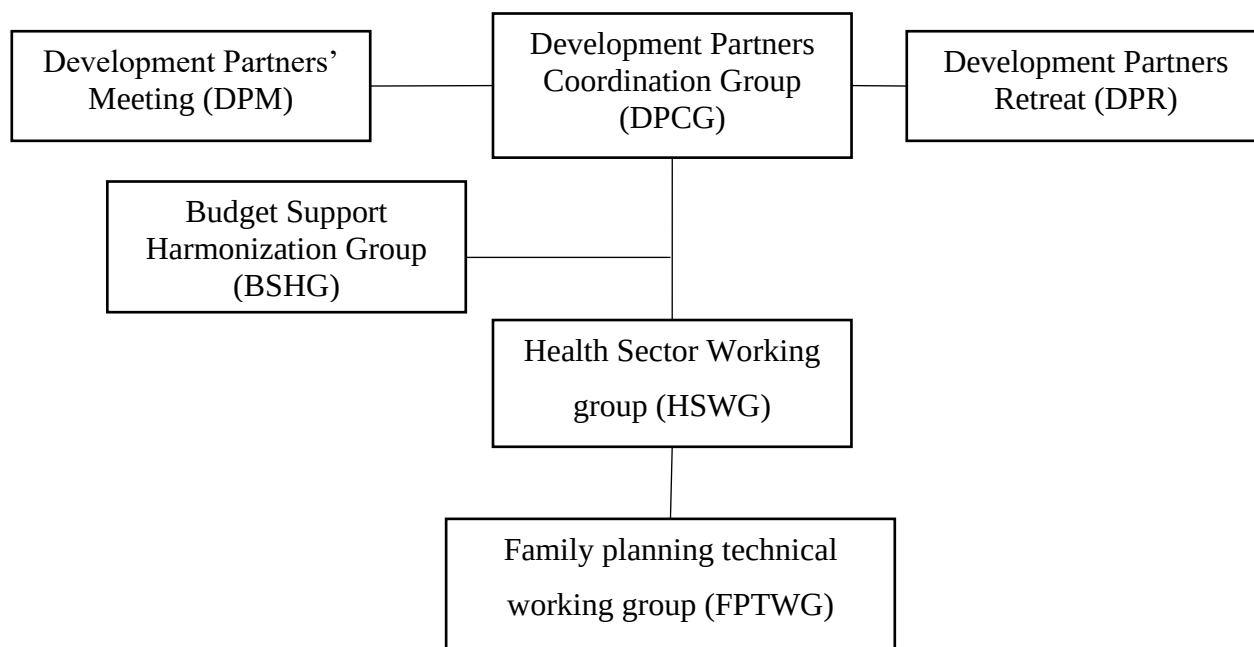


Figure 4. 1: Family planning policy coordination framework

National Gender Policy

The review of Rwanda's national gender policy indicated a wide range of actors, from the president's office to ministries and their implementing agencies. In addition, actors include those from the National Women's Council, the Forum for Rwandan Women Parliamentarians (FFRP); different commissions such as the Human Rights Commission, Unity and Reconciliation Commission, National Commission for the Fight Against HIV/AIDS (currently under RBC). Further actors include institutions of higher learning, civil society organisations (CSOs), development partners, and the private sector.

Fourth Health Sector Strategic Plan (HSSP) July 2018 – June 2024

Concerning the coordination and implementation of the plan, the Ministry of Health has the primary responsibility of overseeing and coordinating its implementation. In addition, the private

sector is highly involved in consultations with the MoH. Other actors belong to the development partners (DPs) who provide support, including institutional capacity development (especially in Policy, Governance and Infrastructure); prevention and control of infectious diseases (HIV, TB, and Malaria); health security; and health system strengthening. DPs are involved in the overarching Health Sector Working Group (HSWG). The HSWG oversee the implementation of sector-wide approach (SWAp) health actions in the entire health sector. The technical working groups (TWGs) implement deliberations of the health sector-working group (HSWG). In addition, the Single Project Implementation Unit coordinates separate projects. Inter-sectoral actors from various inter-ministerial committees are also responsible for programs such as school health. Implementing the HSSP also involves actors from the national and international cooperation and regional integration, such as the East African Community (EAC). Finally, the WHO remains an important actor in providing necessary regulations.

Furthermore, the review of the fourth health sector strategic plan (HSSP4) indicates the distribution of actors at all levels of the health system in Rwanda. Actors at the central level include the Ministry of Health (MoH) and its implementing agency (Rwanda Biomedical Centre), as well as the national referral and teaching hospitals. Actors at the intermediary level of Rwanda's health system include national referral hospitals, some district hospitals (DHs), and private healthcare institutions. Actors at the peripheral level include the remaining district hospitals, health centres, and health posts. At the lowest level of the health system are community health workers.

4.6 ALIGNING THE DESK REVIEW WITH OTHER DEVELOPMENT AGENDAS

The review's findings should be interpreted in light of Rwanda's commitment to achieving the international and regional development agendas, including the Sustainable Development Goals (SDGs) and the African Union Agenda 2063. Agenda 2063 is Africa's development blueprint adopted in May 2013 by African Heads of State and Government to achieve inclusive and sustainable socio-economic development over 50 years [283]. The agenda outlines seven aspirations, 20 goals and priority areas. "Healthy and well-nourished citizens" are the third goal of aspiration one, "A Prosperous Africa, based on Inclusive Growth and Sustainable Development". "Health and nutrition" constitute one of the priority areas of Goal 3 of the Agenda 2063. Furthermore, the sixth aspiration of the Agenda 2063 is outlined as follows: An Africa Whose Development is people-driven, relying on the potential offered by African People, especially its

Women and Youth, and caring for Children. This aspiration has two goals, including “Full Gender Equality in All Spheres of Life” (goal 17), and “Engaged and Empowered Youth and Children” (Goal 18). There are three priority areas under aspiration 6. These are “Women and Girls Empowerment, Violence & Discrimination against Women and Girls”, and “Youth Empowerment and Children” [284]. Agenda 2063 goals and priority areas interlink with sustainable development goals [285].

Due to different initiatives, data indicate progress towards achieving the Agenda 2063. For example, concerning health, access to sexual and reproductive health services in the last 12 months in Kenya increased from 53% in 2014 to 60.7% in 2021 for women aged 15-49 years. Similarly, this percentage rose from 5.4% in 2013 to 8.1% in 2021 in Tchad. In Ethiopia, access to sexual and reproductive health services rose from 18.7% in 2013 to 41% in 2019 [283]. Concerning gender equality, there has been a decrease in the proportion of victims of sexual and other violence from 15% to 4.30 in Tchad between 2013 and 2021[283]. Similarly, women aged 15-49 who undergo genital mutilations decreased from 38.4% in 2013 to 34.2% in 2021 in Tchad [283].

4.7 CONCLUSION

This section reviews the existing policies on matters related to gender and sexuality in Rwanda. Using the policy triangle framework, findings from the review indicate that:

- Various international and regional agendas inform policies on gender and sexuality education of early adolescents in Rwanda. Implementation of these agendas and countries’ initiatives indicates some progress towards promoting adolescent SRHR.
- All policies on gender and sexuality education in Rwanda highlight the context, content, process and actors.
- The policies focus on children and adolescents among other beneficiaries, but early adolescents’ sexual health (10-14 years) is less often explicitly mentioned in the policies.
- Some policy documents refer to the special needs of early adolescents but do not mention mechanisms for addressing these needs.
- Generally, policy documents overlook early adolescents as actors.
- Separate SRHR policies should be established for early adolescents and older ones to address the specific needs of each age group.

CHAPTER FIVE

PERCEIVED DETERMINANTS OF EARLY ADOLESCENTS' ACCESS TO SEXUAL AND REPRODUCTIVE HEALTH AND RIGHTS INFORMATION IN RWANDA

5.1 INTRODUCTION

The findings presented in this chapter respond to the second specific objective, describing the social context, including personal, relationships and community factors influencing early adolescents' gender and sexuality knowledge, beliefs and behaviours in Rwanda. These findings were published in the Journal of BMC Public Health [286]. Details on the research methods used are provided in Chapter 3.

5.2 RESULTS

5.2.1 Benefits of SRHR education for early adolescents

The findings showed that the respondents believe that SRHR education has some benefits for early adolescents. They reported that gender and sexuality education allows for shaping early adolescents' behaviour and their future lives. Furthermore, SRHR information allows telling early adolescents that their bodies are changing and gives them opportunities to manage those changes through appropriate decision-making. The respondents noted that gender and sexuality education allows for sorting out issues of relationships between boys and girls and those related to mutual sexual attraction. According to the respondents, SRHR education lays a foundation to control early adolescents' sexual instincts and helps them to have a positive attitude about it. Respondents reported further that SRHR information aims to promote early adolescents' individual, family, and country well-being. This education allows people at these levels to plan for their health, including their sexual and reproductive health. This education is crucial for the general well-being of people and their country and allows people to give birth to offspring whom they can bring up. The respondents further noted that SRHR information is an opportunity for early adolescents to learn about similarities and differences between boys and girls. The respondents agreed that SRHR information increases self-awareness and leads early adolescents to know their rights in the context of cultural inequality between boys and girls.

“Gender education increases early adolescents’ self-awareness and the knowledge of their rights. Our culture imposes inequality between a boy and a girl. Changing that mindset is a journey to equality”. (P15, Male, Public Institution)

“Adolescents face many challenges that they can solve only if they know. They can be aware of the right time to have sex and how to protect themselves against sexually transmitted diseases, as well as other consequences. Teaching them earlier helps them to make informed decisions”. (P16, Male, Public Institution)

The respondents further noted that gender and sexuality education allows society and adolescents to know about their needs and rights and provide the necessary support.

“During menstruation, some adolescent girls fall sick, and school performance slows down. A society that is aware of this provides special support to that adolescent girl. They know specific needs and challenges associated with this developmental stage, including sanitary pads” (P03, Female, FBO)

A further benefit noted is that gender education might assist in strengthening relationships in marriage. Gender is a concern for all boys and girls, and it is about teamwork and building solid relationships when the boys and girls get married.

“This education helps early adolescents to apply these principles in their daily lives as we prepare them for marriage during this period of early adolescence. Gender introduces teamwork and is key in building a strong family when married”. (P03, Female, FBO)

The findings also revealed the need for gender education to address the unequal distribution of tasks between boys and girls and make early adolescents aware that no specific domestic task is devoted to boys or girls. The study indicated further that gender education is needed to address the issues of boys’ sexual harassment and lack of respect towards girls.

“Sometimes boys harass girls because they were not given lessons about respecting their colleagues [girls]. When boys are not timely educated about respecting girls, they may induce them into sexual intercourse, which may result in early pregnancy and school dropout”. (P12, Male, FBO)

5.2.2 Determinants of access to SRHR information

The analysis of their responses yielded several factors affecting adolescent health at the individual, relationship, community, and societal levels, as reflected in Figure 5.1.

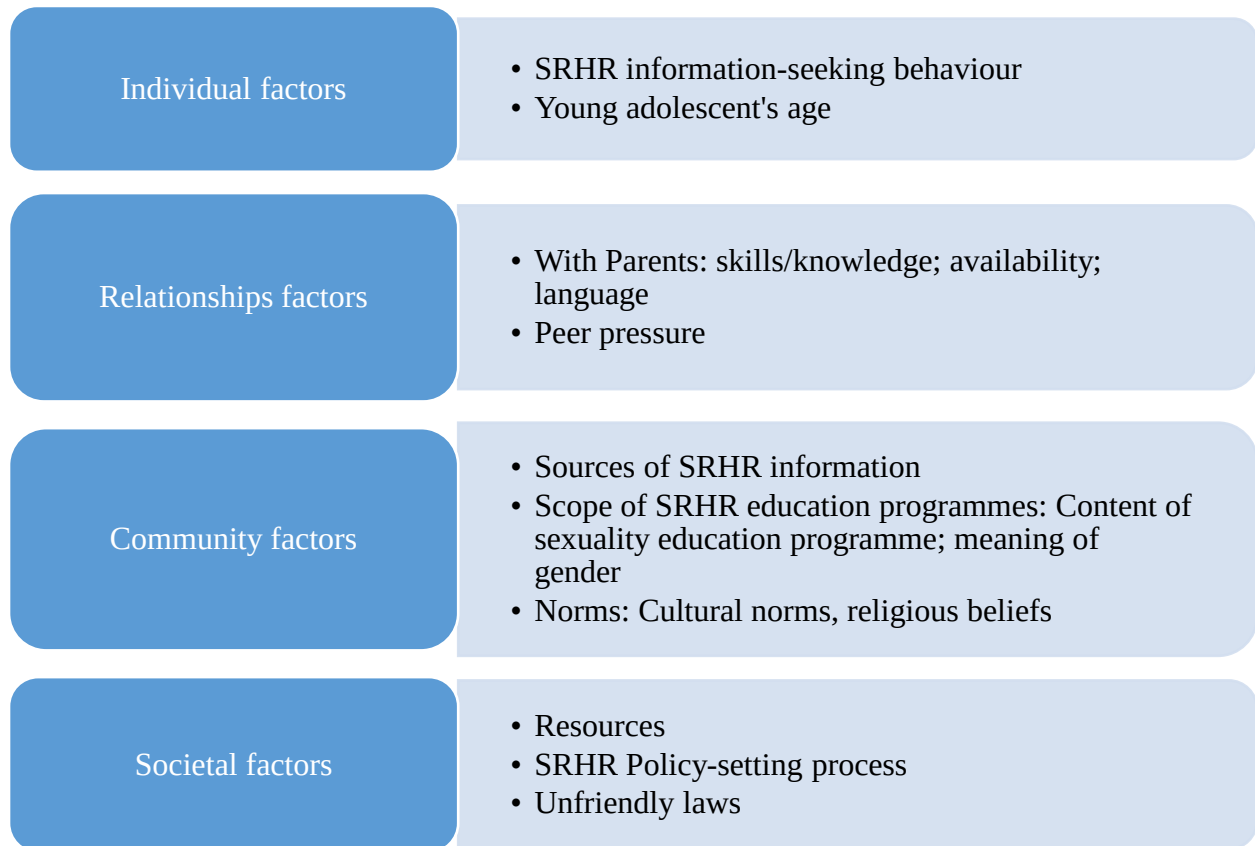


Figure 5. 1: Perceived enablers and barriers to young adolescents' access to SRHR information

5.2.2.1 Individual factors

The participants reflected on two determinants of young adolescents' accessing SRHR information at the individual level. These determinants were adolescents' information-seeking behaviour and the appropriate age for starting sexuality education.

SRHR information-seeking behaviour

The participants discussed several factors related to young adolescents' access to SRHR information at the individual level. The participants reported that young adolescents are curious and seek sexual health information from various sources. Nevertheless, the study participants noted that young adolescents often cannot satisfy their curiosity by asking their parents and thus

harbour misconceptions. The participants thought young adolescents feel shy to ask questions and think their parents consider them disrespectful. In addition, participants felt that young adolescents do not know where to obtain the correct SRHR information despite their curiosity about SRHR. One participant said the following about what influences young adolescents' access to SRHR information at the individual level:

“They [young adolescents] do not know they need information. When we talk to them at school, we find out that they are curious, but they give us some wrong information about sexual and reproductive health. They do not know that they need the right information”. (P16, male, public institution).

In addition, participants said that young adolescents are scared to ask for SRHR information from their parents and look to the celebrities they choose as their role models and around whom they build their identity. Some participants illustrated why young adolescents do not seek information from their parents as follows:

“They [young adolescents] are not comfortable discussing their reproductive issues. They believe their parents will consider them as disrespectful, bad-mannered people, and uneducated”. (P10, female, public institution)

“They [young adolescents] search for information about football or movie stars to know them better and choose them as their role models”. (P01, female, public institution)

Age of initiating SRHR education

The participants indicated that it is essential to start receiving SRHR education during early adolescence, but they did not specify the exact age. When asked about the age at which sexuality education should be initiated, some participants felt that it should begin as early as possible, and others suggested that SRHR education should be initiated at ten years of age. Responding to the question about the exact age to initiate SRHR education, some of the participants said the following:

“Even before they grow into young adolescents, they should be taught about sexuality according to their developmental age.” (P01, female, public institution)

“We realised that at ten years, children are curious and start being exposed to those challenges of sexual and reproductive health information. So parents can prepare their children by starting to talk to them about sexuality.” (P16, male, public institution).

5.2.2.2 Relationship factors

The participants noted that young adolescents’ access to SRHR is influenced mainly by two factors at the relationship level: communication between parents and young adolescents and peer influences.

Parent-child interaction

The findings indicated that sexuality is not a topic that is discussed between children and their parents for several reasons. They reflected that it is culturally inappropriate for parents to deliver sexual information to children because sexuality is a taboo topic and has been for many generations. In addition, parental reluctance to engage with children about SRHR information is due to the belief that they may start misbehaving once informed. According to the participants, this attitude comes from the cultural belief that SRHR education encourages children to initiate sexual activity. Two participants explained why parents do not communicate adequately with their children on SRHR as follows:

“The Rwandan culture does not encourage parents to discuss reproductive health with children. Many people don’t talk about it. It is a taboo subject. It is due to the way people are raised.” (P10, female, public institution).

“People think that giving information to children means encouraging them to have sex.” (P16, male, public institution)

One participant insisted that parents send young adolescents to other family members (such as aunties) for specific sexual information, which proves that sexuality cannot be discussed at the family level. We asked participants with whom such discussion takes place, and one participant answered as follows:

“Sending young adolescents to their aunts proves that sexuality cannot be discussed at the family level.” (P14, female, public institution).

Furthermore, the participants recognised that parents' knowledge and attitudes are vital in delivering sexuality education to young adolescents. They noted that some parents do not provide sexual information to young adolescents because of their limited knowledge, which is explained by one participant in the quotation below. However, another participant reflected that some educated parents can communicate with their children on SRHR:

“Parents do not have enough information. Sometimes we ask them to teach their children, but they don’t have that knowledge either.” (P14, female, public institution).

“Parents’ education affects their children’s sexuality knowledge. Educated parents with open discussions have well-informed children.” (P12, male, FBO)

Parents’ availability is another important factor in young adolescents’ access to SRHR information. The participants perceived that changes in family living conditions have resulted in parents being absent from their homes and using housekeepers who cannot adequately address children's SRHR information needs. All participants noted that parents lack time to engage with their children because of limited parental availability. According to the participants, parents might discuss sexuality if they spend more time with their children. One of the participants shared the following:

“I have noticed that various topics can arise when parents talk to their children for a long time. However, when time is short, they do not have the means to discuss sensitive topics such as sexuality. Parents come home tired, asking if their children did their homework and had proper meals.” (P08, male, FBO)

Language, as a medium of discussion, was another concern for providing SRHR information to young adolescents, specifically the lack of appropriate words to speak about genital parts in Kinyarwanda. The participants noted that words for genitals are perceived as very rude, uncommon, and hard to say to children. Therefore, they indicated that they use alternative words in Kinyarwanda, which can lead to confusion. Nevertheless, the participants said they were comfortable talking about sexuality in foreign languages such as French or English. The participants further mentioned a booklet to guide SRH communication with young adolescents titled *‘Tuganire Mwana Wanjye’* (Let’s Talk, My Child) that can help in parent-child discussions

on sexuality and, thus, help parents find the appropriate words in Kinyarwanda. The participants said the following about the language and available ways to overcome the language challenges:

“For instance, saying the word 'penis' in Kinyarwanda is considered a problem, but it sounds fine in French or English.” (P16, male, public institution).

“We developed that book to encourage parents to overcome fears about discussing [sexuality] with their children. The book aims to give parents words they can use while talking to their children and help them to face some of the problems ahead as they grow up.” (P01, female, public institution).

Peer pressure

The participants perceived peer pressure as another determinant of young adolescents accessing SRHR information. According to this study, peers play a significant role in delivering SRHR information to young adolescents, especially about sexual relationships. The participants noted that male and female adolescents have different expectations, and boys perceive girls as money spenders, while girls consider boys as providers and hunters for sex. According to the participants, these norms mean that girls need to have sex if they want to get any money or presents from boys. A participant explained it as follows:

“Boys should always pay everything for the girl. ... if he spends money on a girl according to the norm, she should also pay him back. Therefore, he expects that pay to be sex.” (P02, female, NGO).

In addition, the participants thought that peer pressure contributed to spreading SRHR information that contradicts the social expectations of girls about remaining virgins until marriage by expecting them to keep their boyfriends by proving love through sexual intercourse. They also revealed that boys are entitled to have multiple sex partners. A participant illustrated this contradiction between peer and social norms as follows:

“Peers spread messages that are in contrast with the social culture or expectation of being a virgin until marriage. For example, a real boy has sex with multiple girls’; or similarly for a girl, ‘you’re not a real girl until you lose your virginity’.” (P13, female, public institution)

5.2.2.3 Community factors

The determinants of access to SRHR information among young adolescents included the sources of information, the scope of SRHR education and various cultural and religious norms.

Sources of SRHR information

This section presents participants' perspectives on various sources as enablers of access to SRHR information for young adolescents. The participants indicated that young adolescents access SRHR information through multiple sources and that these sources have diversified because of technological advancement. Some of the sources that emerged include mobile phones and television. When asked about which sources are delivering SRHR information, one participant FBO outlined them as follows:

“They [young adolescents] get such information from their friends and parents. Schools deliver such information as well. They also access information through information and communication technology, the internet, mobile phones, YouTube, etc.” (P03, female, FBO)

Furthermore, the participants reported that young adolescents seek SRHR information from social media sources, including YouTube, Facebook, WhatsApp, and the Internet. However, they noted that some internet sources spread incorrect SRHR information, and young adolescents cannot differentiate between correct and incorrect information. The participants further highlighted the disparities in SRHR sources between rural and urban settings. They stated that young adolescents from urban areas have social media as their primary source of information. In contrast, young adolescents from rural areas rely on schools to obtain SRHR information. Some of the participants said the following:

“In towns, they get information from social media...; in the village, I would not put social media on the first place. I would say that they get information from schools.” (P12, male, FBO)

“The reality is that they access right and wrong information, and they are not good at deciding which information is okay and which is not.” (P02, female, NGO)

However, given the diverse sources of SRHR information for young adolescents, especially online sources, a participant noted that the Government of Rwanda had established a policy to prevent the misuse of these sources and access to unsuitable information by children. This participant noted the following:

“There is a policy called Child Online Protection Policy to protect children from abusing the internet.” (P01, female, public institution).

Some participants noted that various governmental, local and non-governmental leaders offer young adolescents SRHR information. It is necessary to consolidate this information from various sources because of the audience's developmental stage. One of them explained it as follows:

“Government institutions and non-governmental organisations also prepare different education sessions targeting young adolescents. Organisers need, however, to consider their audience, lifestyles, and the clarity of their messages.” (P05, male, public institution)

Furthermore, the participants noted that schools are sources of SRHR information through the comprehensive sexuality education (CSE) curriculum. In addition to the CSE curriculum, the participants noted that young adolescents learn about SRHR through gender and health clubs. One participant explained the role of school clubs in delivering SRHR information as follows:

“There are after-class clubs that teach about gender principles and reproductive health. There are also special clubs that focus on health.” (P17, female, public institution)

In addition to schools, the participants highlighted that trained staff from health facilities deliver SRHR information to young adolescents through youth corners. The role of health facilities was described by a participant as follows:

“We trained at least two people in every health centre. The program is in place. Young adolescents receive information on sexual and reproductive health from the youth corner, at the health facility level.” (P16, male, public institution).

The participants said radio, television, and mobile phones were other important means of delivering SRHR information to young adolescents. The radio programs include "Urunana" and "Ni Nyampinga". For example, Urunana targets the general population, and Ni Nyampinga provides SRHR information that mainly targets young girls. This program calls on young girls to

abstain from sex or to use condoms. "Mobile for Reproductive Health" (m4RH) is another program through which young adolescents access SRHR information. Using mobile phones, m4RH sends SRHR messages to children. For example, a participant said the following about some of these programmes:

"They [young adolescents] obtain information from radio programs such as Urunana."
(P07, male, FBO)

In addition, the participants indicated that churches deliver SRHR information to young adolescents, focusing on the 'Word of God' and Christian moral values, including the avoidance of premarital sex. A participant from a FBO explained it as follows:

"Churches organise seminars for young children and young adolescents but not regularly. The church's education focuses more on the Word of God than any other topic and calls them to abstain from premarital sexual activity." (P03, female, FBO)

Scope of SRHR education programmes

The study found that the SRHR content is crucial to enable access to SRHR information for young adolescents. Some participants were concerned with the content of SRHR education programmes and the meaning of specific concepts.

Disagreement about the content of SRHR education programmes

The content of SRHR information was seen as crucial to enable young adolescents to access it. There was a disagreement between the participants about what to include in SRHR education programmes. We asked the participants what they thought the scope of the education should be. Participants from FBOs focused on moral education and prohibiting premarital sexual activity, and those from public institutions suggested that churches should go further and teach young adolescents about having safe sex using modern contraceptive methods. The following comments show the disagreements between some of the participants:

"People think different churches should teach young adolescents about moral values, including avoiding illegal sex and promoting abstinence. Telling them to use injections or pills is pushing them into illicit sex." (P12, male, FBO)

“In addition to the natural family planning methods, young adolescents need to be aware of other existing medical contraceptive methods.” (P10, female, public institution)

“There are people who only teach that having sex is a sin without explaining more. They do not go beyond that to suggest means for safe sex. We need to avail emergency contraceptives to young adolescents who fail to abstain from sexual intercourse to prevent unplanned pregnancy.” (P16, male public institution)

The participants noted that selecting CSE content must respect the culture and get inputs from various education stakeholders. They indicated, for example, that some content in the CSE curriculum, such as the dating scenarios, might affect young adolescents' behaviours, and they believed that dating activities might result in sexual activity if children were not monitored at school and in family environments. In addition, the participants were concerned that involving students in dating scenarios would lead them to discover things that go against morals and culture. One participant described this concern as follows:

“Some lessons may invite students into early sexual activity and early pregnancy when it comes to in-class dating exercises and reaching an agreement on having safe sex using a condom. It is difficult to protect them from sexual activity in their families or the school environment.” (P08, male, FBO)

Meaning of the concept of gender

The participants believed some concepts, such as gender, must be taught. Still, it is challenging to make them meaningful and contextualise them, making it challenging to teach young adolescents. The participants noted that the communities do not clearly understand the meaning and dimensions of gender and believe it has several ideological components that cannot be expressed in Kinyarwanda. Participants highlighted that it is challenging to teach ideological concepts to young adolescents, who usually learn better from concrete examples, making it hard for teachers to select which content to teach. One participant explained as follows how the meaning of gender influences access to SRHR information for young adolescents:

“There is still a problem of lack of standard definition of gender. What is the appropriate subject to teach about it? It is still a problem as long as there is no clear definition of gender in our context.” (P08, male, FBO)

Norms

The participants reflected on the role of cultural norms and religious beliefs in enabling or hindering young adolescents' access to SRHR information. Their views on this aspect are summarised in this section.

Cultural norms

The participants indicated that social expectations play a significant role in delivering SRHR information to young adolescents. For example, they pointed out that the general expectation is that girls should not talk about having sex and keep silent about their sexual needs, which they perceived as compromising girls' rights, mainly because it prevents them from receiving information on safe sexual relationships from peers. The study also highlighted the existence of other harmful sexual norms. The following comments explain how social expectations influence young adolescents' access to SRHR information.

"They [boys and girls] never talk about whether the boy wants to have sex. Sometimes, the girl also wants it, and it is her right to say she wants it. The problem is that the general expectation is that a girl should never talk about having sex." (P02, female, NGO)

"Girls grow up shy because culture expects them not to speak in public. Therefore, it is easy for anyone to deviate or fool them because they cannot speak up as society expects them always to be quiet." (P14, female, public institution)

The participants noted that cultural norms enhance imbalances in sexual decision-making powers between boys and girls. They reflected that the environment of young adolescents generally promotes boys as protectors of girls and the owners of sexual power, allowing them to initiate sexual relationships. On the other hand, girls have to simulate weakness, play a passive role, and enjoy boys' protection. It is taboo for girls to express their sexual needs. The following comments discuss this problem:

"Boys are protectors of girls. A girl who does not surrender to this protection behaves like men and will not find someone to marry her." (P01, female, public institution)

"Boys grow up in an environment that makes them feel that they are the ones to initiate relationships with girls." (P05, male, public institution)

“It is taboo [for a woman] to tell her husband that she wants sexual intercourse, while as a human being, she may also wish to have sex.” (P01, female, public institution)

In addition, the participants pointed out that the culture promotes inadequate SRHR information and creates negative beliefs in young male adolescents. One participant gave an example of a saying that supports the imbalances in sexual decision-making powers and confirms that boys or men cannot control their sexual drive and, therefore, need multiple sexual partners. This may influence young boys’ and girls’ behaviours if they grow up in an environment where such beliefs are held. One participant explained it as follows:

“A Rwandan proverb says that bulls are irresistible whenever they want sex (Imfizi ntiyimirwa). Boys grow up as such and behave like their fathers with such beliefs.” (P01, female, public institution).

Religious beliefs

The findings indicated that religious institutions play a role in delivering SRHR information to young adolescents. The study found that FBOs provide SRHR information that influences the sexual knowledge, beliefs, and behaviours of young adolescents. However, some churches are reluctant to teach sexuality because they regard it as a sin. FBOs believe that providing SRHR education promotes immorality and violates God's commandment to abstain from premarital sex. Furthermore, the FBO participants indicated that delivering information on condom use might encourage premarital sex and breach some commandments. Some participants elaborated as follows:

“The church education focuses on moral values. We teach by good examples of their grandparents, parents, elder brothers and sisters, the Virgin Mary and other Saints who resisted rape and refused to break their virginity. We teach young adolescents to abstain from having sex and remain virgins and chaste.” (P07, male, FBO)

“Teaching children to use a condom means inviting them to have protected sex. If the commandment says to abstain from sex, it would be a contradiction because that commandment would be violated whether sex is protected or not. It is immoral, misbehaving.” (P11, male, FBO)

5.2.2.4 Societal factors

Three factors at the societal level emerged from the participants' responses as influencing young adolescents' access to SRHR information. These factors are related to resources (financial and human), the process of creating SRHR education policies, and SRHR laws.

Inadequate resources

The study found that inadequate financial resources to generate SRH information tools such as books and training modules are an essential challenge to giving young adolescents access to SRHR information. The participants also noted that some teaching materials from partners such as non-government organisations (NGOs) do not adequately match young adolescents' needs. They further pointed out that insufficient skilled and qualified personnel and the inability to use available communication channels, including social media, affected SRHR information provision to young adolescents. Some participants said the following about the challenges to enabling access for young adolescents to SRHR information:

“It [sexuality education] also requires financial means. Books are expensive... Modules require time to generate.” (P17, female, public institution)

“Schools have no adequate materials apart from those found in biology, which are not also from our culture. They are most often brought from the NGOs. The package from NGOs is always wrong.” (P08, male, FBO)

“We have a shortage of employees to deliver sexual information. Another barrier is technology use. We want to send that information using WhatsApp and other social media, but it is still expensive, and children do not access it on phones.” (P16, male, public institution).

Inadequate SRHR policy-setting process

The participants criticised the processes of creating SRHR policies as inadequate, as they do not involve people from all levels of communities, including older adults. The findings indicated that it is necessary to create evidence-based policies through research. They noted that some of these policies originated from external sources and have no local relevance. Two participants explained it as follows:

“The family members, especially elderly people from the villages, are not consulted. If they [policy-makers] could approach them, they would learn about what happened 20 years ago, how women behaved towards their husbands and how the husbands behaved towards their wives, and what made them keep their family secrets.” (P05, male, public institution)

“Policy content should not be imposed. Policy-makers abruptly come up with content from European countries. They do not research to get informed about the local context to include community members’ cultural perspectives.” (P08, male, FBO)

Unfriendly SRHR laws

The participants indicated that some laws do not facilitate young adolescents’ access to SRHR information. One participant noted that it is necessary to solve specific reproductive health problems and revise SRHR laws that do not allow young adolescents to access information on SRHR services, such as emergency contraceptives. One participant explained it as follows:

“We should also revise current laws to support children who have difficulty abstaining from sex and need emergency contraceptives.” (P16, male, public institution).

5.3 CONCLUSION

This study showed that many participants had a favourable attitude towards young adolescents’ access to SRHR information. Informed by the social-ecological framework of adolescent health, this study provided an overview of enablers and barriers to SRHR information by young adolescents at the individual, relationship, community, and societal levels of adolescents’ social-ecological environment. Addressing these barriers may facilitate improved access to SRHR information for young adolescents. These findings are important to promote safe SRH and prevent adverse health outcomes among younger and older adolescents. Chapter six focuses on the content of SRHR information delivered to early adolescents, with key informants’ perspectives on how this information delivery should be conducted.

CHAPTER SIX

MAJOR TOPICS OF GENDER AND SEXUALITY MESSAGES CONVEYED TO EARLY ADOLESCENTS IN RWANDA

6.1 INTRODUCTION

This chapter aims to respond to the third objective of the current research, which analyses sexual and reproductive health and rights messages conveyed to early adolescents in Rwanda. We achieved this by conducting a review of the curriculum of gender and sexuality education for early adolescents in Rwanda and highlighting key informants' perceptions of significant areas of CSE and their recommendations regarding the content of CSE for early adolescents in Rwanda. Details on research methods are presented in Chapter 3. The findings presented in this chapter were published in the Journal of BMC Public Health [287].

6.2 RESULTS

6.2.1 CSE competences per reviewed syllabi

The findings yielded 58 CSE competences across eleven syllabi, and most of these CSE competences were mapped in syllabi for the lower-secondary level (O-Level). The highest number of CSE competencies was found in the syllabi Biology at the lower-secondary Level (10/58, 17.2%), followed by the syllabi of Kinyarwanda at O-level (8/58, 13.8%). Other syllabi with CSE competences included Social and Religious Studies for upper primary (P4-P6) (7/58, 12.1%), Science and Elementary Technology (P4-P6) (6/58, 10.3%), Religion and Ethics (O-level) (6/58 10.3%). The syllabi that contained the fewest CSE competences included the English Language for O-Level (3/58, 5.2%) and Kinyarwanda for lower primary (P1-P3) (1/58, 1.7%) (Table 6.1).

Table 6. 1: Distribution of CSE per reviewed syllabi

Serial number	Syllabus	Number of CSE competences	Per cent
1	Ordinary Level Biology Syllabus (S1-S3) [288]	10	17.2
2	Kinyarwanda Curriculum for Ordinary Level [289]	8	13.8
3	Social and Religious Studies: Syllabus for Upper Primary P4-P6 [290]	7	12.1
4	Science and Elementary Technology Syllabus for Upper Primary, P4-6 [291]	6	10.3
5	Religion and Ethics Syllabus: Lower Secondary S1- S3 [292]	6	10.3
6	History and citizenship syllabus for ordinary level S1-S3 [293]	5	8.6
7	Curriculum Syllabus for pre-primary Education level from 3 to 6 years [294]	4	6.9
8	Social and Religious Studies for Lower Primary Level [295]	4	6.9
9	Kinyarwanda Curriculum for Upper Primary (P4-P6) Level [296]	4	6.9
10	English Language: Ordinary Level (S1-S3) [297]	3	5.2
11	Kinyarwanda Curriculum for Lower Primary (P1-P3) Level [298]	1	1.7
Total		58	100

6.2.2 CSE competences per subject

The distribution of CSE competences per subject showed that CSE was delivered across 11 subjects, mainly in Kinyarwanda (13/58, 22.4%), Biology (10/58, 17.2%) and Social Studies (9/58, 15.5%). Altogether, the subjects of Kinyarwanda, Biology and Social Studies accounted for 32/58 (55.2%) CSE competences. In contrast, Religious Education (disaggregated into Islamic and Christian Religious Education at the lower-secondary level, and Christian and Islamic Religious Studies at the upper-primary level) accounted for only 8/58 (13.8%) of CSE competences. The remaining 18/58 competences were distributed across the subjects of Science and Elementary Technology (6/58, 10.3%), History and Citizenship (5/58, 8.6%), and Knowledge of Environment (4/58, 6.9%), and English (3/58, 5.2%) (Table 6.2).

Table 6. 2: Distribution of CSE competences per subject

Subjects	Number of CSE competences	Per cent
Kinyarwanda	13	22.4
Biology	10	17.2
Social studies	9	15.5
Science and Elementary Technology (SET)	6	10.3
History and Citizenship	5	8.6
Islamic Religious Education	4	6.9
Knowledge of environment	4	6.9
English	3	5.2
Christian Religious Education	2	3.4
Christian Religious studies	1	1.7
Islamic Religious studies	1	1.7
Total	58	100

6.2.3 CSE competences per school grade

The findings showed that teaching CSE starts at the pre-primary level, and the number of CSE competences in the competence-based curriculum increased with higher school grades. There were 58 CSE competences from the pre-primary to the lower-secondary levels. Only four CSE competences were at the pre-primary level, 22 at the primary level, and 32 at the lower-secondary level. Upper-primary and lower-secondary levels accounted for most CSE competences (49/58) (Table 6.1).

Table 6. 3: Distribution of CSE competences per school grade

School grade	Number of CSE Competences	Per cent
Preschool 1 (3-4 years)	2	3.4
Preschool 2 (4-5 years)	1	1.7

Preschool 3 (5-6 years)	1	1.7
Pre-primary (Preschool 1-3)	4	6.9
Primary 1	2	3.4
Primary 2	1	1.7
Primary 3	2	3.4
Lower primary (Primary 1-3)	5	8.6
Primary 4	2	3.4
Primary 5	5	8.6
Primary 6	10	17.2
Upper primary (Primary 4-6)	17	29.3
Secondary 1	10	17.2
Secondary 2	11	19.0
Secondary 3	11	19.0
Lower secondary (Secondary 1-3)	32	55.2
Total	58	100.0

6.2.4 Areas of CSE for early adolescents in Rwanda

The distribution of CSE competences across various recommended areas indicated that the most addressed area was sexual and reproductive health. This area is organised under three topics: pregnancy and pregnancy prevention; HIV and AIDS stigma, care, treatment and support; and understanding, recognising and reducing the risk of STIs, including HIV [145]. There were 13 CSE competences in the curriculum for this area, six of which fell under the topic of understanding, recognising, and reducing the risk of sexually transmitted infections, including HIV (Figure 6.1). According to the qualitative findings related to this area, participants perceived that CSE focuses more on pregnancy prevention for girls because the consequences of pregnancy are more severe for them than for boys, and they do not conceive. Participants indicated that education of early adolescents focuses on pregnancy prevention methods, including condoms and other contraceptive methods. In addition, the participants noted that preventing sexually transmitted infections such as HIV, hepatitis, and cervical cancer was another focus of sexuality education for early adolescents. The participants also pointed out that circumcision was becoming an area of growing interest in

CSE of early adolescents. Finally, they noted that such education focused on available services to support early adolescents in sexual and reproductive health matters. These services included the availability of contraceptives, health-facility delivery, pregnancy testing, and ante- and post-natal care. However, the findings on educating early adolescents about birth control methods were mixed, especially injections, pills, and condoms. Participants from FBOs did not recommend education on condoms, and they believed such education would encourage early sexual activity and, therefore, supported sexual abstinence-only education. Nevertheless, participants from public institutions noted the need to introduce and educate about birth control methods to prevent early pregnancies. However, a participant from a public institution neither supported the idea of availing condoms to early adolescents nor perceived it as a top priority (Table 6.4).

The second area of CSE mainly covered by the curriculum in Rwanda was the human body and development (key concept 6). This area comprises four topics: sexual and reproductive anatomy and physiology, reproduction, puberty and body image [145]. The review of the curriculum yielded, in total, 11 CSE competences in this area. Most of these competences fall under two topics: sexual and reproductive health, anatomy and physiology and puberty (four competences for each). The remaining three competences address the topic of reproduction, and there were no CSE competences related to body image (Figure 6.1). Qualitative findings revealed that CSE for early adolescents focuses on anatomy and physiology, changes, and stages of sexual development. Participants indicated that emphasising these topics allows early adolescents to be aware of physiological changes, related sexual risks and their prevention. In addition, one participant suggested that the competence-based curriculum should consider providing positive information about sex, including enjoyment of sex, rather than focusing merely on its negative consequences (Table 6.2).

The third area mainly addressed by the competence-based curriculum in Rwanda is values, rights, culture and sexuality. This area comprises three topics: values and sexuality, human rights and sexuality, and culture, society and sexuality [145]. The curriculum review yielded nine CSE competences for early adolescents. Most of these competences (six out of nine) fell under human rights and sexuality, and there were no CSE competences on culture, society, and sexuality (Figure 6.1). Qualitative findings in this area indicate that sexuality education for early adolescents should focus on cultural values and norms of "ideal girls" (called *Ni Nyampinga*) who abstain from sex,

prevent HIV and other STIs, and/or use condoms. Participants perceived abstinence from sex as an essential biblical spiritual requirement. They highlighted the role of FBOs in teaching girls about their specific dress codes, including avoiding miniskirts and trousers and keeping their hair natural. Participants also explored meanings and perceptions associated with dress codes in the context of values, culture and sexuality, saying that how someone (a girl) dresses has meaning. They had observed that people associated wearing short clothes like miniskirts with being modern and civilised, which they believed was a wrong perception. On the other hand, participants said that people believed short clothes symbolised attracting people's attention and a sign of being easily approachable for dating. Finally, participants articulated how the law protects early adolescents, highlighting that adolescents should not be abused and report sexual abuse (Table 6.4).

The fourth area mainly emphasised by the CSE for early adolescents in Rwanda is understanding gender (key concept 3). This area comprises three topics: the social construction of gender and gender norms; gender equality, stereotypes and bias; and gender-based violence [145]. The curriculum had eight CSE competences, six focusing on gender equality, stereotypes, and bias (Figure 6.1). Qualitative results in this area revealed that sexuality education for early adolescents focused on gender equality and the importance of giving equal opportunities to both boys and girls. In addition, key informants highlighted that CSE of early adolescents tackled gender roles and responsibilities of boys and girls. While some participants viewed the early adolescent boys' and girls' roles as interchangeable and complementary despite their biological differences, some participants said they teach early adolescents differential roles and responsibilities in marriage. For example, the husband is expected, among other things, to secure shelter, food and clothing for the family, including the wife.

In contrast, married women's responsibilities involve respecting their husbands and food and bed preparation, including bed making and being ready for sex. Some participants advocated for sexuality education that strengthens self-confidence, decision-making, critical thinking, independence, and self-reliance. At the same time, someone recommended introducing content on lesbian, gay, bisexual, transgender, and intersex (LGBTI) as an integral part of sexuality at later stages of their sexual development in adolescence (Table 6.4).

The area of relationships (key concept 1) comprises four topics: families; friendship, love and romantic relationships; tolerance, inclusion and respect; and long-term commitment and parenting [145]. The curriculum review showed that this area yielded six CSE competences, most of which fell on friendship, love, and romantic relationships. There were no CSE competences related to long-term commitments and parenting (Figure 6.1). Qualitative findings in this area indicated that teaching CSE focused on establishing good and safe relationships with friends, especially between boys and girls. In addition, they suggested that early adolescents should learn about marriage and the qualities of good husbands and wives who will build good families. Key informants from faith-based organisations (FBOs) offered a particular emphasis on teaching about long-term commitments, quoting the importance of Biblical virtues, including avoiding conjugal infidelity and abortion, decision-making and the meaning of marriage (Table 6.4).

The next area of CSE covered by the competence-based curriculum in Rwanda was sexuality and sexual behaviours (key concept 7). This area consists of two topics: sex, sexuality, and sexuality life cycle, and sexual behaviour and sexual response [145]. The curriculum review indicated that this area has only five CSE competences for early adolescents (Figure 1), mainly on sexual behaviour and sexual response, with four competences. Qualitative findings in this area indicated that sexuality education for early adolescents emphasised behaviours that were appropriate to their developmental stage and the consequences of inappropriate behaviours. One participant from a public institution indicated that sexual instinct is an important topic for early adolescents and perceived it as a natural phenomenon of developmental processes but regretted that most teachers and parents tend to overlook it (Table 6.4).

The area of skills for health and wellbeing (key concept 5) comprises the following five topics: norms and peer influence on sexual behaviours; decision-making; communication, refusal and negotiation skills; media literacy and sexuality; and finding help and support [145]. The curriculum review showed that this area had four CSE competences, three of which were decision-making and one of which was norms and peer influence. There were no CSE competences for the remaining three topics (Figure 6.1). Qualitative findings in this area highlighted that early adolescents learn to foster their decision-making and skills related to access and use of condoms (Table 6.4).

The area of violence and staying safe (key concept 4) comprises three topics of violence: consent, violence and bodily integrity, and safe use of information and communication technologies (ICTs)

[145]. This area was the least represented in CSE competences, with only two competences related to violence. There were no competences on consent, privacy, bodily integrity, and safe use of information and communication technologies (Figure 6.1). Qualitative findings emphasise that early adolescents learn to refuse unwanted sexual activity, resist temptations, and report any information related to sexual violence. In addition, girls learn self-respect, standing firm, and to ‘say no’ to all requests for undesired sexual activity (Table 6.4).

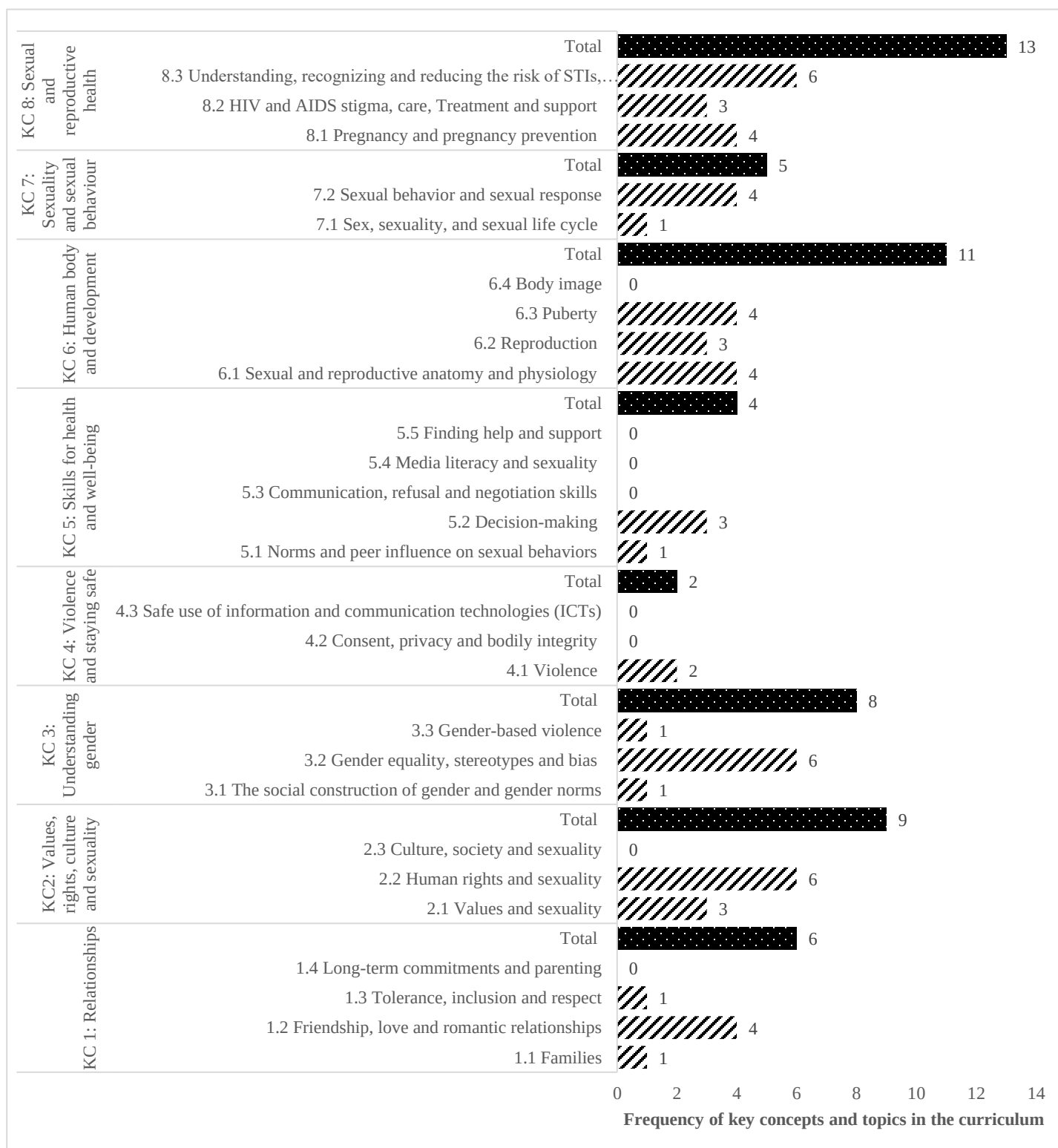


Figure 6. 1: CSE competences for early adolescents in Rwanda per standard areas of sexuality education

Table 6. 4: Summary of findings from the qualitative study of the content on CSE in Rwanda

Area of CSE	Topics arising from interviews	Illustrative quotes
Good and safe relationships	Safe relationships	<i>"We do not teach them to be lonely, but we teach them how to behave in good and safe relationships between boys and girls." (P07, Male, FBO)</i>
	Importance of Biblical virtues	<i>"... The Bible says that he who has a good wife has a good home. So we start preparing children at their early stages to become good husbands and wives who will start strong families." (P11, Male, FBO)</i>
Values, rights, culture and sexuality	Sexual abstinence	<i>"Teaching a child about not having sex is spiritual because the seventh commandment prohibits us from having unauthorised sex." (P11, Male, FBO)</i>
	Dressing norms	<i>"It is prohibited in our religion to put on trousers, miniskirt, having artificial hairstyles." (P03, Female, FBO)</i>
	Prevent sexual abuse	<i>"The law protects those who are under 18. It is against the law for adults to date a minor. They get arrested." (P16, Male, Public Institution)</i>
Understanding gender	Gender equality	<i>"Gender does not mean favouring boys or girls, but instead giving equal opportunities to all. They [boys and girls] should all be supported the same way and benefit equally from education." (P17, Female, Government)</i>
	Gender roles	<i>"We teach them that there are no roles specific to boys and girls; their roles are interchangeable. We want them to understand that one is capable of doing what another is supposed to do." (P01, Female, Ministry)</i>
	Fostering self-confidence	<i>"We focus on the development of self-confidence, decision-making, and teaching them to have self-trust and how to make informed choices, and critical thinking." (P08, Male, FBO)</i>
	Sexual diversity	<i>"...we know it [LGBTI] is also part of sexuality... I feel the framework around sexuality should incorporate that because it is how they are. It may not be easy to find it among early adolescents, but you might have cases at 16 to 19 years old. So it would be good if programming could also look at this." (P02, Female, NGO)</i>

Violence and Staying Safe	Refusing unwanted sexual activity	<i>"Sexual and reproductive health education of early adolescents covers ... saying NO to unwanted sexual activity, resisting temptations and reporting information related to rape. (P14, Female, Public Institution)</i>
Skills for health and well-being	Independent decision-making	<i>"We teach them to make informed decisions and their rights; they can get married. They can decide without being easily influenced" (P16, Male, Public Institution)</i>
	Condom use	<i>"... provide open information on access to condoms. It is very confidential. Girls and boys go and go back and obtain the information they need." (P02, Female NGO)</i>
Human body and development	Understanding human body	<i>"We focus on teaching children about body anatomy and physiology so that they understand how they [their bodies] work... know when it is risky and how they can protect themselves." (P16, Male, Public Institution)</i>
	Sexual pleasure	<i>"...you should also approach the positive side. Boys and girls want to talk about it; they have questions, and sometimes, questions are not just about the consequences of unprotected sex and early pregnancy but also about how they can have pleasurable sex. Sometimes, it is very difficult to ignore the positive side of the information."</i>
Sexuality and sexual behaviour	Appropriate behaviour	<i>"They [educators] mostly talk about how early adolescents should behave, and the consequences of inappropriate behaviours." (P10, Female, Public Institution)</i>
	Sexual instinct	<i>"Sexual instinct is something natural which increases as someone grows, but you will not find teachers or parents telling their children about that... but if they were to be taught this earlier to know how to behave in such a situation, to know that sexual intercourse is a natural need". (P01, Female, Public Institution)</i>
Sexual and reproductive health	Prevention of pregnancy and STIs	<i>"Girls do not misbehave like boys. Society does not perceive it as a big deal when boys misbehave. However, it is shameful when girls misbehave. They [adults] fear having girls with an unexpected pregnancy, but boys do not conceive." (P03, Female, FBO)</i>
	Circumcision	<i>"They are taught about circumcision, and I would not say that circumcision is still considered strange as it was before." (P13, Female, Public Institution)</i>
	SRH services	<i>"We focus mainly on access to information. We provide information about services provided regarding reproduction such as contraceptives, going to the hospital for</i>

		<i>delivery, pregnancy tests, and ante- and post-natal care." (P16, Male, Public Institution)</i>
Pros and cons of birth control methods		<i>"Some [people] believe that teaching contraceptives may encourage [early adolescents] to have sex... sexual activity is already there. Therefore, [we] have a program of teaching [early adolescents] about birth control and different methods they can use." (P12, Male, FBO)</i> <i>"They advise parents to provide condoms to their children when they go to school, but I think that is not the first thing to teach" (P05, Male, Public Institution)</i>

6.3 CONCLUSION

CSE is an effective means to facilitate access to sexual and reproductive health and rights information and improve the knowledge of young adolescents. In 2016, the Rwandan competence-based curriculum introduced the CSE to respond to inadequate knowledge about sexuality, gender, and reproductive health among learners. The review of this curriculum suggests that it aligns to some extent with international guidelines on sexuality education but needs further elaboration to serve its purpose among early adolescents in Rwanda. In addition, with respect to cultural norms, education stakeholders in Rwanda need to harmonise and align the content of CSE with international standards by extending the focus to areas of CSE that are not adequately addressed, including those that are still locally controversial but internationally recommended. However, this process might be confronted to cultural and gender norms about sexuality.

CHAPTER SEVEN

SEXUAL AND REPRODUCTIVE HEALTH KNOWLEDGE AND ATTITUDES OF IN-SCHOOL EARLY ADOLESCENTS IN RWANDA: A CROSS-SECTIONAL SURVEY

7.1 INTRODUCTION

Chapter seven presents the findings related to the fourth objective of this research, which is to describe early adolescents' knowledge, and beliefs regarding gender and sexuality in surveyed districts of Rwanda.

7.2 RESULTS

7.2.1 Participants' characteristics

7.2.1.1 Individual level

Of the 811 participants included in the analysis, 413 (50.9%) were girls, and 447 (55.1%) were 14. The lowest and highest ages were 12 and 14 years, respectively. The overall mean age was 13.4 ± 0.7 years. Concerning the school grade, there were 423 (52.2%) participants in senior 1. Of the 803 who indicated their religious affiliation, 290 (36.1%) participants were affiliated with the Roman Catholic Church, and the majority were affiliated with the Protestant Church (ADEPR and Adventist), with 370 (46.1%) participants. A significantly higher number of boys (36.4%) reported they have ever used mobile phones compared to girls (31.2%), $n=788$. Almost 11% of the 782 participants have ever attended parties where young people dance, including 48 boys (6.1%) and 38 girls (4.8%). Nearly 13% ($n=97$) of 776 participants indicated ever drinking alcohol, with a significantly higher proportion of boys (7.6%) compared to girls (4.9%). Furthermore, only 18 of 788 (2.3%) participants reported ever smoking a cigarette and 19 of 775 participants (2.4%), including 16 boys (2.1%), indicated having ever used cannabis. In total, 390 (51.2%) of 762 participants have ever used the internet, with a significantly higher proportion of boys (28.4%) compared to girls (22.8%). However, 225 (36.3%) of 620 participants have searched SRH information online. Concerning watching pornography, 544 (69.5%) of 783 participants noted they had never watched pornographic films showing sexual activity. However, 159 of these participants (20.3%) have watched these films 1-2 times, and 58 of them (7.4%) have watched these films five times or more, and the proportions of watching such films were significantly higher for boys

compared to girls. Participants' results on access to SRHR information (including information on puberty and/or pregnancy) indicated that 750 (92.5%) of 811 participants had access to SRHR information, with a significantly higher percentage among girls (48.5%) than in boys (44.0%) (Table 7.1).

7.2.1.2 Family level

Of the 802 who provided the life status of their parents, 720 (89.8%) indicated that both of their parents were alive. Nearly 74% (n=539) of 733 participants stayed with both parents, while 32 (4.4%) stayed with their parents. Concerning the perceived difficulty in communicating with their fathers, 396 (56.9%) indicated that this communication was easy or very easy, while 15.5 reported that such was difficult or very difficult. Similarly, 637 (82.4%) of the 773 participants reported easy or very easy communication between them and their mothers, and 48 of them (6.2%) noted this communication was difficult or very difficult. Furthermore, 636 (80.6%) of 789 participants also reported that their communication with brothers and sisters was easy compared to 62 (7.9%) who said that communication was (very) difficult. Primary education level was the most common for fathers (38.2%) and mothers (44%) of the 625 and 693 participants (respectively), followed by the secondary level (28.9%) and (27.4%), respectively. In terms of discussing sex matters with family members, 519 (65.7%) of 790 participants have never discussed it with their fathers. In comparison, 285 (36.1%) occasionally discuss sex matters with their mothers, and 261(33%) never discuss them with their mothers about sexual issues. Similarly, 484 (61.1%) never discussed sex issues with brothers or sisters (Table 7.1).

7.2.1.3 Community level

Of the participants, 383 (47.2%) reported that their households belonged to the third category of socio-economic status in Rwanda, followed by the second category (29.5%), n=239. However, 130 (16%) participants reported ignoring the socio-economic status of their households (Table 7.1).

Table 7. 1: Participants' characteristics

		Male		Female		All	
Characteristics	Categories	Number	Percentage	Number	Percentage	Number	Percentage
Individual level							
Age in years (n=811)	12	57	7.03	60	7.40	117	14.43
	13	105	12.95	142	17.51	247	30.46
	14	236	29.10	211	26.02	447	55.12
	Mean age $\pm$ SD	13.5$\pm$0.7		13.4$\pm$0.7		13.4$\pm$0.7	
Type of school (n=811)	Public	207	25.52	217	26.76	424	52.28
	Private	191	23.55	196	24.17	387	47.72
Grade (n=811)	Senior 1	212	26.14	211	26.02	423	52.16
	Senior 2	186	22.93	202	24.91	388	47.84
Religion (n=803)	Catholic	140	17.43	150	18.68	290	36.11
	Protestant	185	23.04	185	23.04	370	46.08
	Others	70	8.72	73	9.09	143	17.81
Ever used a mobile phone (n=788)***	Yes	287	36.42	246	31.22	533	67.64
	No	99	12.56	156	19.80	255	32.36
Ever attended parties where young people dance (n=782)	Yes	48	6.06	38	4.80	86	10.86
	No	344	43.43	362	45.71	706	89.14
Ever drink alcohol (n=776)*	Yes	59	7.60	38	4.90	97	12.50
	No	327	42.14	352	45.36	679	87.50
Ever smoked cigarette (n=788)	Yes	12	1.52	6	0.76	18	2.28
	No	372	47.21	398	50.51	770	97.72
Ever use of cannabis (n=775)**	Yes	16	2.06	3	0.39	19	2.45
	No	364	46.97	392	50.58	756	97.55
Ever used internet (n=762)***	Yes	216	28.35	174	22.83	390	51.18
	No	159	20.87	213	27.95	372	48.82
Ever searched SRH information from the internet (n=620)	Yes	116	18.71	109	17.58	225	36.29
	No	202	32.58	193	31.13	395	63.71
Frequency of ever watching pornographic films (n=783)***	Never	228	29.12	316	40.36	544	69.48
	1-2 times	101	12.90	58	7.41	159	20.31
	3-4 times	16	2.04	6	0.77	22	2.81
	≥ 5 times	37	4.73	21	2.68	58	7.41
Ever accessed puberty/pregnancy information (n=811)**	Yes	357	44.02	393	48.46	750	92.48
	No	41	5.06	20	2.47	61	7.52
Family level							
Parents are alive (n=802)	None is alive	7	0.87	2	0.25	9	1.12
	One parent is alive	37	4.61	36	4.49	73	9.10
	Both parents are alive	348	43.39	372	46.38	720	89.78
Living with parents (n=733)*	None parent	9	1.23	23	3.14	32	4.37
	One parent	74	10.10	88	12.01	162	22.10
	Both parents	270	36.83	269	36.70	539	73.53

		Male		Female		All	
Characteristics	Categories	Number	Percentage	Number	Percentage	Number	Percentage
Perceived difficulty in communicating with the father (n=696)	(Very) easy	198	28.45	198	28.45	396	56.90
	Average	59	8.48	69	9.91	128	18.39
	(very) difficult	48	6.90	60	8.62	108	15.52
	Do not see him	29	4.17	36	5.03	64	9.20
Perceived difficulty in communicating with the mother (n=773)	(Very) easy	313	40.49	324	41.91	637	82.41
	Average	34	4.40	38	4.92	72	9.31
	(very) difficult	22	2.85	26	3.36	48	6.21
	Do not see her	6	0.78	10	1.29	16	2.07
Perceived difficulty in communicating with brothers or sisters (n=789)	(Very) easy	317	40.18	319	40.43	636	80.61
	Average	36	4.56	35	4.44	71	9.00
	(very) difficult	26	3.30	36	4.56	62	7.86
	Do not see them	10	1.27	10	1.27	20	2.53
Father's level of education (n=625)	Primary & lower	123	19.68	116	18.56	239	38.24
	TVET	38	6.08	37	5.92	75	12.00
	Secondary	79	12.64	102	16.32	181	28.96
	Higher	60	9.60	70	11.20	130	20.80
Mother's level of education (n=693)	Primary or lower	140	20.20	165	23.81	305	44.01
	TVET	31	4.47	35	5.05	66	9.52
	Secondary	94	13.56	96	13.85	190	27.42
	Higher	71	10.25	61	8.80	132	19.05
Ever discussed sex matters with the father (n=790)	Often	29	3.67	24	3.04	53	6.71
	Occasionally	116	14.68	102	12.91	218	27.59
	Never	240	30.38	279	35.32	519	65.70
Ever discussed sex matters with the mother (n=790)***	Often	69	8.73	175	22.15	244	30.89
	Occasionally	130	16.46	155	19.62	285	36.08
	Never	185	23.42	76	9.62	261	33.04
Ever discussed sex matters with the brothers or sisters (n=788)*	Often	37	4.70	52	6.60	89	11.29
	Occasionally	94	11.93	121	15.36	215	27.28
	Never	254	32.23	230	29.19	484	61.42
Community level							
District	Gasabo	110	13.6	118	14.5	228	28.1
	Nyarugenge	94	11.6	89	10.9	183	22.6
	Ruhango	84	10.4	94	11.6	178	21.9
	Rwamagana	110	13.6	112	13.8	222	27.4
Household Economic status-Ubudehe Categories (n=811)**	Category 1	29	3.58	18	2.22	47	5.80
	Category 2	100	12.33	139	17.14	239	29.47
	Category 3	189	23.30	194	23.92	383	47.23
	Category 4	7	0.86	5	0.62	12	1.48
	Do not know	73	9.00	57	7.03	130	16.03

Note:

+ **Economic status category:** According to Ezeanya-Esiobu [299], the Government of Rwanda categorises households into four groups of socioeconomic status (Ubudehe categories): the very poor and vulnerable who are unable to feed themselves (category 1), those who can access low-class accommodation, have no paid employment,

and eat twice or less a day (category 2). Those earning money from their employment belong to Category 3, and those with permanent and well-off employment belong to Category 4.

TVET: Technical and vocational education and training

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

7.2.2 Participants' sexual and reproductive health knowledge and attitudes

7.2.2.1 Knowledge about sexuality

Results on knowledge about sexuality showed that participants' responses varied widely across six items. One in two (427) of the 800 participants (53.4%) responded correctly (true) that a girl can get pregnant the first time she has sexual intercourse. In addition, 499 of 798 (62.5%) participants knew correctly (true) that a girl may get pregnant if she has sexual intercourse halfway between her periods. The highest proportion of participants (82.7%) responded correctly (false) on the item, saying that a girl can get pregnant through kissing and touching. The lowest proportion of participants' correct responses (false) was obtained (5.4%) on the item saying that masturbation causes severe damage to health. In addition, 530 of 790 participants responded incorrectly (false) and did not know that a girl can get pregnant if she has sexual intercourse in a standing position. Overall, the participants' scores mean score was 2.8 out of six points [95%CI: 2.7-2.9] (Table 7.2). The findings in Table 7.4 indicate that participants from rural settings scored higher than those in urban settings ($p=0.016$). In addition, those who did not see their father communicate had higher scores (mean 3.27) than others ($p=0.025$). Furthermore, participants who often discuss sex matters with their mothers (mean=3.2, $p<0.001$) and brothers or sisters (mean 3.11, $p=0.034$) had higher scores than others. Finally, participants who declared accessing SRH information (mean 2.88, $p<0.001$) and those who have ever searched SRH information from the internet (mean: 3.06, $p=0.017$) scored higher than others. For the remaining social-ecological variables, there were no significant differences in participants' scores (Table 7.4).

7.2.2.2 Knowledge about contraceptive methods

Participants' results on their knowledge about contraceptive methods are depicted in Table 5.3. The three most commonly known methods were condoms (86.4%), injection (74.4%), and periodic abstinence (60.4%). In addition, one in two participants (51.7%) know about the implants. In contrast, the majority of participants indicated not being aware of the following contraceptive methods: jelly/foam (96.6%), lactation amenorrhea method (91.6%), male sterilisation (83.5%),

female sterilisation (73.3%), emergency contraceptive pill (64.8%), pill (62.5%), and withdrawal (56.7%). The participants' overall mean score on knowledge of contraceptive methods was 4.96 out of 12 points [95%CI: 4.8-5.1] (Table 7.2). Table 7.4 summarises scores on the knowledge of contraceptive methods per social-ecological factors. Participants who perceived their communication with their mother as average (mean 2.27, $p=0.030$), who searched SRHR information from the internet (mean 2.34, $p=0.001$), who attended parties (mean: 2.22, $p=0.049$), who drink alcohol (mean: 2.20, $p=0.048$), and who kissed the partner on the lips (mean=2.19, $p=0.050$) had significantly higher scores than others. Concerning other social-ecological factors, there were no significant differences in participants' scores on the knowledge of contraceptive methods.

7.2.2.3 Knowledge about HIV/AIDS and sexually transmitted diseases

The results indicated that 722 (91.3%) of 791 participants had heard of HIV/AIDS. Similarly, 662 of 749 (88.4%) participants responded that shaking hands or hugging cannot transmit HIV. Nearly four out of five participants (78.6%) of the participants reported that it is not true that people get HIV by sharing food with a person who has HIV. In addition, 79% of participants responded that it was not true that mosquito bites can cause HIV to people. Concerning sexually transmitted infections and HIV, 637 (84.8%) of 751 knew that it was possible to avoid these infections. Concerning having heard of other sexually transmitted infections, only 78 (10.6%) of 734 participants have heard of chlamydia, and only 31.5% of 733 heard of genital herpes. In contrast, 664 out of 731 (90.8%) have heard of gonorrhoea and 448 out of 732 (61.2%) heard of syphilis. In addition, a small proportion of participants (36.7%) know that people can take a simple test to know if they have HIV. Furthermore, 52.2% of the 747 participants responded that a person with HIV always looks slim or unhealthy, which was a wrong answer. Finally, half of the 750 participants (50.4%) knew that it was possible to cure AIDS. Overall, participants' mean score on HIV/AIDS knowledge was 8.4 out of 13 [95%CI: 8.2-8.5] (Table 5.3). Girls scored higher than boys (mean: 8.54 versus 8.15, $p=0.024$), and those who used the internet reported higher knowledge scores than others (mean: 8.57, $p=0.010$). Participants' scores for the remaining social-ecological variables were not statistically different (Table 5.5).

7.2.2.4 Knowledge about condoms

Participants' knowledge about condoms was assessed using three response options of *agree*, *don't know*, and *disagree* on 13 items plus one item asking participants whether they have ever seen a condom. The results in Table 5.3 showed that 635 of 777 (81.7%) have ever seen a condom, and the majority of respondents (77.3%, n=796) agreed that condoms are an effective way of protecting against sexually transmitted infections. Three in four participants agreed that condoms are effective in protecting against HIV infection (75%, n=788) that a girl can suggest to her boyfriend that he use a condom (74.2%, n=786), and alternatively, that a boy can suggest her girlfriend use a condom (71.8%, n=786). Furthermore, 560 (70.5%) agreed that condoms are effective in preventing pregnancy, while 64.1% (n=794) agreed that unmarried couples wishing to have sexual intercourse should use condoms. Slightly more than five out of ten (55.3%, n=781) disagreed that condoms could be used more than once, while only 7.9% disagreed that condoms could slip off the man and disappear into the woman's body. Agreement with the remaining items ranged from 16.2% (n=778) for *condoms reducing sexual pleasure* to 40.2% (n=751) for *buying or obtaining condoms is embarrassing* (Table 7.2). The participants' overall mean score for knowledge about condoms was 7.1 out of 14 [95%CI: 6.9-7.3]. The participants' scores were significantly higher for boys (mean: 7.39, p=0.006) than girls, those in senior 1 (mean: 7.34, p=0.027) than in senior 2, and those who were well off (mean: 7.52, p=0.012) than other. In addition, scores were higher for those who occasionally discuss sex matters with brothers or sisters (mean: 7.59, p=0.017), who attend parties (mean: 7.96, p=0.005), who watch pornographic films (mean: 7.74, p<0.001), and who search SRH information from the internet (mean: 7.67, p<0.001). Furthermore, participants with caressing experience (mean: 8.62, p<0.001), kissing (mean: 8.21, p<0.001), touching genitals with hands (mean: 8.58, p=0.004), and access to SRH information had significantly higher scores compared to others. There were no significant differences in participants' scores on the remaining social-ecological factors (Table 7.4).

Table 7. 2: Adolescents' SRHR knowledge

Dimensions and statements	Incorrect knowledge		Correct knowledge	
Knowledge about sexuality	Frequency	Per cent	Frequency	Per cent
A girl can get pregnant on the very first time that she has sexual intercourse (n=800)	373	46.63	427	53.38
A woman stops growing after she has had sexual intercourse for the first time (n=785).	407	51.85	378	48.15
Masturbation causes serious damage to health (n=794)	751	94.58	43	5.42
A girl is most likely to get pregnant if she has sexual intercourse halfway between her periods (n=798).	299	37.47	499	62.53
A girl cannot get pregnant if she has sexual intercourse in a standing position (n=790)	530	67.09	260	32.91
A girl can get pregnant through kissing or touching (n=799)	138	17.27	661	82.73
Overall sexuality knowledge: range 0-6	Mean: 2.8 [95%CI: 2.7-2.9]			
Knowledge of contraceptive methods	No		Yes	
Pill (n=702)	439	62.54	263	37.46
Injection (n=710)	182	25.63	528	74.37
Condom (n=758)	103	13.59	655	86.41
Emergency Contraceptive Pills (n=698)	452	64.76	246	35.24
Withdrawal (n=702)	398	56.70	304	43.30
Periodic Abstinence/Rhythm (n=723)	286	39.56	437	60.44
Intra-uterine Device (IUD) (n=754)	465	61.67	289	38.33
Implant (n=756)	365	48.28	391	51.72
Jelly/foam (n=756)	730	96.56	26	3.44
Female sterilisation (n=756)	554	73.28	202	26.72
Male sterilisation (n=750)	626	83.47	124	16.53
Lactation amenorrhea method (n=749)	686	91.59	63	8.41
Overall knowledge of contraceptive methods: range 0-12	Mean: 4.96 [95%CI: 4.8-5.1]			
HIV/AIDS Knowledge	Incorrect knowledge		Correct knowledge	
Have you heard of HIV or AIDS (n=791)	69	8.72	722	91.28
It is possible to cure AIDS (n=750)	372	49.60	378	50.40
A person with HIV always looks slim or unhealthy in some way (n=747)	390	52.21	357	47.79
People can take a simple test to find out whether they have HIV (n=736)	466	63.32	270	36.68
A person gets HIV from mosquito bites (n=745)	156	20.94	589	79.06
Shaking hands or hugging can transmit HIV (n=749)	87	11.62	662	88.38

People get HIV by sharing food with a person who has HIV (n=752)	161	21.41	591	78.59
HIV is curable (n=747)	314	42.03	433	57.97
People can avoid sexually transmitted diseases and HIV (n=751)	114	15.18	637	84.82
Have you heard of Gonorrhea? (n=731)	67	9.17	664	90.83
Have you heard of Syphilis? (n=732)	284	38.80	448	61.20
Have you heard of Chlamydia (n=734)	656	89.39	78	10.63
Have you heard of Genital herpes (n=7330)	502	68.49	231	31.51
Overall HIV/AIDS knowledge: range 0-13	Mean score: 8.4 [95%CI: 8.2-8.5]			
Knowledge about Condom	Incorrect knowledge		Correct knowledge	
Have you ever seen a condom (n=777)	142	18.28	635	81.72
Condoms are an effective method of preventing pregnancy (n=794)	234	29.47	560	70.53
Condoms can be used more than once (n=781)	349	44.69	432	55.31
Condoms are an effective way of protecting against HIV infection (n=788)	197	25.00	591	75.00
Condoms can slip off the man and disappear inside the woman's body (n=785)	723	92.10	62	7.90
Condoms are an effective way of protecting against sexually transmitted diseases (n=796)	181	22.74	615	77.26
A girl can suggest to her boyfriend that he use a condom (n=760)	196	25.79	564	74.21
A boy can suggest to his girlfriend that he use a condom (n=786)	221	28.12	565	71.88
Condoms are only suitable for casual relationships (n=788)	651	82.61	137	17.39
Condoms are suitable for steady, loving relationships (n=770)	524	68.05	246	31.95
It would be too embarrassing for someone like me to buy or obtain condoms (n=751)	449	59.79	302	40.21
If a girl or boy suggested using condoms to her partner, it would mean that she didn't trust him (n=773)	567	73.35	206	26.65
Condoms reduce sexual pleasure (n=778)	652	83.80	126	16.20
If unmarried couples want to have sexual intercourse before marriage, they should use condoms (n=794)	285	35.89	509	64.11
Overall knowledge about condoms (range 0-14)	Mean: 7.1 [95%CI: 6.9-7.3]			

When compared together, the results on participants per cent scores on the four SRHR domains indicated that the least known domain was contraceptive methods (mean=42.16 [40.24-44.07] followed by the knowledge about sexuality (mean=50.98 [48.80-53.17], and the knowledge about condoms (mean score=53.98 [52.14-55.82]. The domain with the highest per cent mean score was the knowledge about HIV/AIDS and other sexually transmitted (mean=65.78 [64.18-67.38] (Figure 7.1).

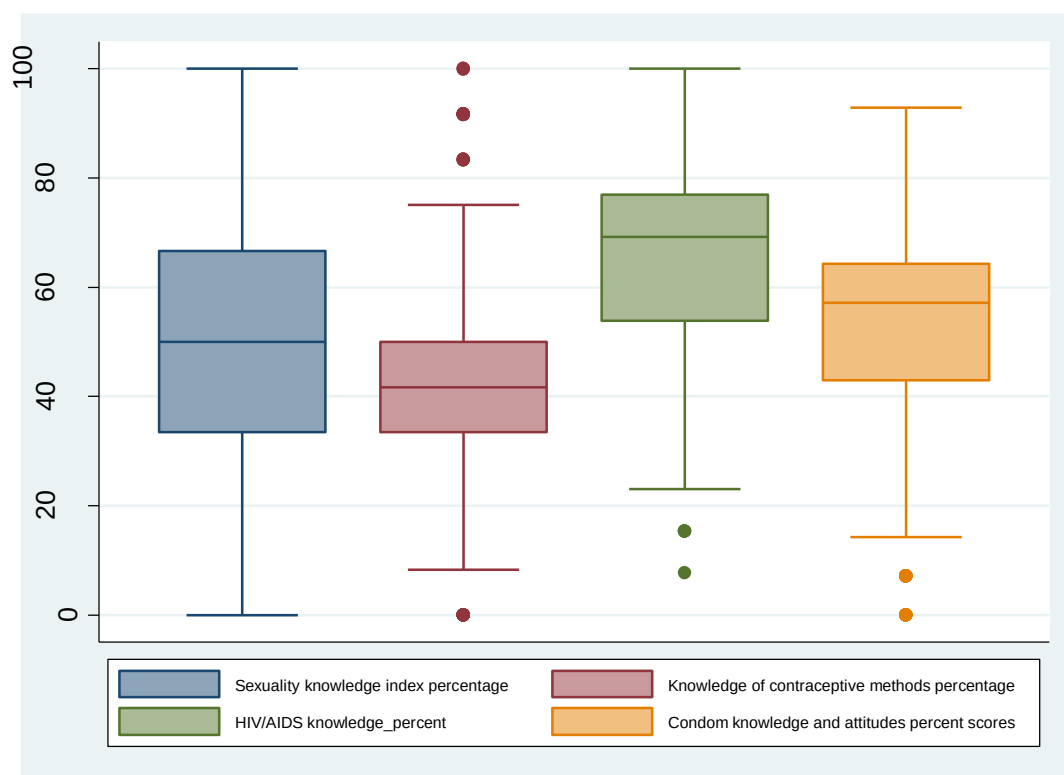


Figure 7. 1: Box plot for participants' scores on four domains of SRHR assessed

7.2.2.5 Attitudes towards sexual norms

The results indicate that 59.9% (n=791) of the participants disagreed (27.4%, n=217) or strongly disagreed (32.5%, n=257) that unmarried young people should socialise with people of the opposite sex. In addition, 67.5% of the participants (n=794) disagreed (34.1%, n=271) or strongly disagreed (33.4%, n=265) with touching, kissing or hugging the opposite sex for unmarried people. Similarly, 81.5% (n=786) disagreed (33.6%, n=264) or strongly disagreed (47.9%, n=377) with unmarried people having sex. Concerning boys and girls having sex before marriage, 56.3% of 784 participants disagreed (28.6%, n=224) or strongly disagreed (27.7, n=217%) that boys and

girls can have sex before marriage if they use contraceptive methods. On the other hand, 87.4% of 796 participants agreed (40.3%, n=321) or strongly agreed (47.1%, n=375) that unmarried girls should have boyfriends. Similarly, 87.9% (n=794) agreed (38.5%, n=306) or strongly agreed (49.4%, n=392) that unmarried boys should have girlfriends. Concerning virginity before marriage, 79.7% of 770 participants agreed (25.3%, n=195) or strongly agreed (54.4%, n=419) that they should remain a virgin until marriage. About suggesting the partner use a condom, 72.4% (n=779) agreed (33.8%, n=264) or strongly agreed (38.5%, n=300) that their friends thought it was ok to suggest the sexual partner use a condom. In addition, 72.6% of 789 participants agreed (36.6%, n=289) or strongly agreed (35.9%, n=284) that their friends thought that it was okay for a boy to suggest his sexual partner use a condom. The overall participants' scores on attitudes towards sexual norms ranged from 9 to 36, with a mean score of 24.4 out of 36 [95%CI: 24.0-24.7] (Table 7.3). The findings further indicate that 10% of 711 participants had a conservative (unfavourable) attitude (score $\leq 50\%$) towards sexual norms, while 90% had a permissive (favourable) attitude (score $>50\%$). Boys reported higher scores than girls (mean: 24.86 versus 24.36, $p=0.005$). In addition, those who reported easy communication with brothers or sisters (mean: 24.62, $p=0.006$) and those in the category of well-off (mean: 24.85, $p=0.038$) had higher scores than others. Furthermore, ever using a mobile phone (mean: 24.61, $p=0.032$), ever attending parties (mean: 26.28, $p<0.001$), watching pornographic films (mean: 25.56, $p<0.001$), ever searching SRH information from the internet (mean: 24.88, $p=0.039$), and ever kissing a partner on the lips (mean: 26.34, $p<0.001$) were associated with higher scores on attitudes towards sexual norms (Table 7.5).

7.2.2.6 Attitudes towards gender

Concerning socialising with the opposite sex, 81.4% of 798 participants agreed or strongly agreed that it is acceptable for young people to socialise with the opposite sex. Most participants (90.4%, n=788) also agreed or strongly agreed that it is all right for boys to have boyfriends and for girls to have boyfriends (88.1%, n=784). The majority of participants also agreed or strongly agreed that girls should remain virgins until marriage (90.1%, n=791) and that virginity was the most valuable possession for girls (91.7%, n=786). Furthermore, 67.5% (n=779) of participants agreed or strongly agreed that their religion and beliefs are against premarital sex. In contrast, 76.7% (n=778) of participants disagreed (30.7%) or strongly disagreed (46%) that boys (not girls) have sex before marriage and that it is wrong to have sexual intimacy for boys and girls (60.6%, n=789).

Furthermore, 58% (n=791) disagreed or strongly disagreed that boys and girls can have sex before marriage even if they use contraceptive methods. However, only 52.7% (n=780) disagreed or strongly disagreed that it is wrong for unmarried boys and girls to have sexual intercourse even if they love each other. Participants' overall mean score for gender attitudes ranged from 10-40, with a mean of 29.2 out of 40 [95%CI: 28.9-29.5] (Table 7.3). In addition, the results indicate that 3% of 717 participants exhibited a less gender-equitable attitude (score $\leq 50\%$), while 97% of them had a more gender-equitable attitude (score $> 50\%$). Perceived average communication with brothers or sisters (mean: 29.44, $p=0.008$), ever use of the mobile phone (mean: 29.63, $p<0.001$), ever attending parties (mean: 30.66, $p=0.001$), ever watching pornographic films (mean: 29.96, $p=0.005$), ever used internet (mean: 29.84, $p<0.001$) were associated with higher scores compared to others. Furthermore, participants who searched SRHR information on the internet (mean: 29.82, $p=0.039$) had higher scores than others (Table 7.5). There was no association between participants' scores on gender attitudes with the remaining social-ecological variables.

Table 7. 3: Participants' attitudes towards sexuality and gender

Dimensions and statements	Categories							
	Strongly disagree		Disagree		Agree		Strongly agree	
	n	%	n	%	n	%	n	%
It is ok for unmarried young people to socialise with the opposite sex (n=791)	257	32.49	217	27.43	147	18.58	170	21.49
Unmarried girls should have boyfriends (n=796)	32	4.02	68	8.54	321	40.33	375	47.11
Unmarried boys should have girlfriends (n=794)	30	3.78	66	8.31	306	38.54	392	49.37
It is ok if unmarried touch, kiss, or hug the opposite sex (n=794)	265	33.38	271	34.13	160	20.15	98	12.34
It is ok if unmarried to have sex (n=786)	377	47.96	264	33.59	78	9.92	67	8.52
My friends think that I should remain a virgin until I marry (n=770).	79	10.26	77	10.00	195	25.32	419	54.42
My friends think that it is fine for a girl to suggest to her sexual partner that he uses a condom (n=779)	108	13.86	107	13.74	264	33.89	300	38.51
My friends think that boys and girls can have sex before marriage if they use methods to prevent pregnancy. (n=784)	217	27.68	224	28.57	203	25.89	140	17.86
My friends think that it is fine for a boy to suggest to his sexual partner that she uses a condom (n=789)	112	14.20	104	13.18	289	36.63	284	35.99
Overall scores on attitudes towards sexual norms range from 9-36	Mean: 24.4 [95%CI: 24.0-24.7]							
Gender attitudes	Strongly disagree		Disagree		Agree		Strongly agree	
	n	%	n	%	n	%	n	%

I think that it is acceptable for young people to socialise with the opposite sex (n=798)	65	8.15	83	10.40	245	30.70	405	50.75
It is all right for unmarried boys to have girlfriends (n=788).	30	3.81	46	5.84	308	39.09	404	51.27
It is all right for unmarried girls to have boyfriends (n=784).	26	3.32	67	8.55	303	38.65	388	49.49
I think that it is wrong for boys and girls to have physical intimacy, such as touching, kissing, and hugging the opposite sex (n=789)	200	25.35	278	35.23	162	20.53	149	18.88
I think it is wrong for unmarried boys and girls to have sexual intercourse, even if they love each other (n=780)	198	25.38	213	27.31	149	19.10	220	28.21
I think that girls should remain virgins until they marry (n=791).	30	3.79	48	6.07	161	20.35	552	69.79
I think that it is all right for boys and girls to have sex before marriage if they use methods to prevent pregnancy (n=791)	240	30.34	219	27.69	182	23.01	150	18.96
I think that virginity is a girl's most valuable possession (n=786).	35	4.45	30	3.82	118	15.01	603	76.72
I think that my religion and beliefs are against premarital sex (n=779).	148	19.00	105	13.48	195	25.03	331	42.49
I think that it is okay for boys to have sex before marriage but not so for girls (n=778)	358	46.02	239	30.72	90	11.57	91	11.70
Overall score of attitudes towards gender, range: 10-40	Mean: 29.2 [95%CI: 28.9-29.5]							

The findings in Figure 7.2 indicate that, based on the participants' percent scores, most participants hold a less traditional and more gender-equitable attitude towards sexual norms.

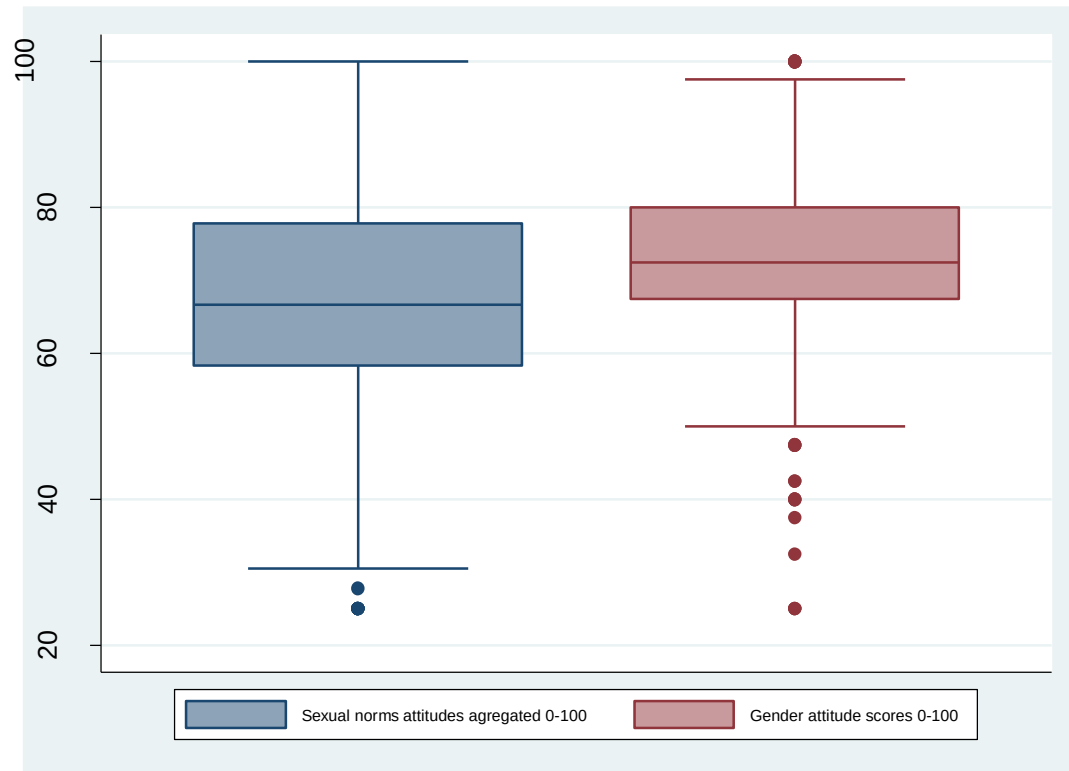


Figure 7. 2: Box plot on participants' scores on attitudes towards sexual norms and gender

Table 7. 4: SRHR Knowledge and attitudes scores by early adolescents' characteristics

		Sexuality knowledge (0-6)			Knowledge of contraceptive methods (0-12)			Condom knowledge (0-14)			HIV/AIDS & STDs knowledge (0-13)		
		Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value
Variables	Categories												
Sex	Male	2.75	1.37	0.061	4.92	2.29	0.742	7.39	2.56	0.006	8.15	2.18	0.024
	Female	2.93	1.24		4.98	1.89		6.82	2.58		8.54	2.00	
Hometown	Rural	2.95	1.23	0.016	4.82	2.26	0.118	7.10	2.67	0.911	8.45	2.22	0.264
	Urban	2.72	1.38		5.09	1.90		7.12	2.51		8.26	1.95	
Age in years	12	2.73	1.22	0.567	5.09	2.26	0.596	7.40	2.45	0.222	8.40	1.69	0.647
	13	2.81	1.34		4.83	1.99		6.85	2.64		8.24	2.23	
	14	2.87	1.32		4.99	2.12		7.18	2.59		8.41	2.11	
Type of school	Public	2.82	1.30	0.259	4.92	2.05	0.219	7.07	2.60	0.211	8.33	2.14	0.547
	Private	3.00	1.37		5.28	2.42		7.53	2.43		8.5	1.75	
School grade	Senior 1	2.79	1.33	0.365	5.00	1.95	0.546	7.34	2.53	0.027	8.25	2.04	0.219
	Senior 2	2.88	1.30		4.89	2.25		6.88	2.62		8.46	2.15	
Religion	Catholic	2.84	1.32	0.158	4.94	2.02	0.963	7.24	2.52	0.583	8.37	2.12	0.154
	Protestant	2.91	1.27		4.97	2.18		7.00	2.49		8.44	2.01	
	Others	2.64	1.38		4.90	2.06		7.06	3.03		7.97	2.24	
Importance of religion	Not important	2.83	0.75	0.992	3.75	0.95	0.240	6.00	2.09	0.286	7.00	5.29	0.252
	(Very) important	2.83	1.31		4.98	2.09		7.13	2.58		8.38	2.07	
Economic status (Ubudehe) (n=791)	Poor (Category 1&2)	2.94	1.33	0.551	5.20	1.94	0.220	6.94	2.50	0.012	8.48	2.16	0.728
	Well off (categories 3&4)	2.88	1.28		4.97	2.10		7.52	2.57		8.42	1.99	
Parents are alive	None is alive	2.5	1.92	0.751	4.00	2.44	0.415	7.6	3.28	0.916	6.87	2.58	0.134
	One parent is alive	2.83	1.28		5.12	1.77		7.11	2.44		8.35	2.22	
	Both parents are alive	2.85	1.30		4.97	2.11		7.10	2.60		8.37	2.07	
Living with parents	None parent	2.82	1.39	0.721	5.05	1.55	0.324	6.6	2.39	0.586	8.36	2.49	0.989
	One parent	2.91	1.38		5.21	2.06		7.06	2.54		8.29	2.21	
	Both parents	2.81	1.27		4.88	2.09		7.14	2.58		8.31	2.06	
Perceived difficulty in communicating with the father	(Very) easy	2.87	1.26	0.025	4.85	2.18	0.366	7.12	2.56	0.967	8.31	2.12	0.211
	Average	2.69	1.17		5.11	1.63		7.20	2.45		8.56	1.75	
	(very) difficult	2.69	1.46		4.94	2.15		7.03	2.73		8.06	2.23	
	Do not see him	3.27*	1.38		5.37	2.20		7.22	2.67		8.75	2.18	
Perceived difficulty in communicating with the mother	(Very) easy	2.85	1.30	0.484	4.86	2.07	0.030	7.11	2.56	0.315	8.40	2.06	0.414
	Average	2.90	1.39		5.83	2.27		7.38	2.37		8.4	2.34	
	(very) difficult	2.58	1.44		5.03	1.79		6.67	2.74		8.00	2.26	
	Do not see her	3.14	1.16		4.63	1.62		6.00	2.30		7.5	1.77	
Perceived difficulty in communicating with brothers or sisters	(Very) easy	2.84	1.30	0.328	4.87	2.03	0.211	7.20	2.52	0.749	8.37	2.01	0.555
	Average	2.69	1.36		5.35	2.05		6.87	2.60		8.52	2.35	
	(very) difficult	2.91	1.19		5.18	2.35		7.02	2.74		8.00	2.41	
	Do not see them	3.33	1.32		4.31	2.75		6.82	3.22		8.08	2.64	
Father's level of education	Primary & lower	2.86	1.21	0.690	5.00		0.469	7.30	2.45	0.803	8.40	2.09	0.489
	Technical and vocational training	2.73	1.27		4.53			6.96	2.48		8.11	2.40	

		Sexuality knowledge (0-6)			Knowledge of contraceptive methods (0-12)			Condom knowledge (0-14)			HIV/AIDS & STDs knowledge (0-13)		
		Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value
Mother's level of education (n=693)	Secondary	2.93	1.29		5.03			7.14	2.49		8.30	1.97	
	Higher	2.78	1.32		4.85			7.11	2.66		8.61	1.95	
	Primary or lower	2.80	1.31	0.147	4.86	1.93	0.709	7.33	2.42	0.697	8.51	2.03	0.488
	Technical and vocational training	3.16	1.26		4.86	2.17		6.88	2.06		8.06	2.14	
	Secondary	2.99	1.26		5.08	2.05		7.13	2.52		8.30	2.06	
Has brothers or sisters	Higher	2.82	1.25		5.08	2.45		7.22	2.80		8.34	2.11	
	Yes	2.83	1.30	0.519	4.94	2.07	0.751	7.14	2.56	0.198	8.34	2.10	0.492
Ever discussed sex matters with the father	No	3.00	1.54		5.10	2.67		6.43	3.10		8.68	2.05	
	Often	2.97	1.34	0.336	5.02	1.99	0.378	7.66	2.60	0.191	7.81	2.42	0.275
	Occasionally	2.95	1.25		4.76	2.17		7.32	2.47		8.38	2.02	
	Never	2.80	1.33		5.03	2.03		7.01	2.61		8.37	2.09	
Ever discussed sex matters with the mother	Often	3.20	1.19	<0.001	5.17	1.95	0.174	7.12	2.57	0.713	8.29	2.10	0.653
	Occasionally	2.81	1.26		4.77	2.19		6.99	2.37		8.44	1.92	
	Never	2.55	1.41		4.91	2.07		7.19	2.84		8.27	2.27	
Ever discussed sex matters with brothers or sisters	Often	3.11	1.23	0.034	5.25	2.09	0.487	7.22	2.53	0.017	8.22	2.17	0.833
	Occasionally	2.92	1.29		4.88	2.20		7.59	2.35		8.35	1.95	
	Never	2.74	1.32		4.95	2.04		6.89	2.67		8.39	2.15	
Ever used a mobile phone	Yes	2.89	1.33	0.162	4.97	2.25	0.902	7.20	2.50	0.214	8.42	2.12	0.421
	No	2.75	1.27		4.95	1.70		6.92	2.71		8.26	2.04	
Ever attend parties	Yes	3.01	1.55	0.206	5.42	2.22	0.049	7.96	2.59	0.006	8.74	2.28	0.125
	No	2.81	1.29		4.88	2.07		7.02	2.56		8.32	2.07	
Ever drink alcohol	Yes	2.95	1.39	0.348	5.41	2.20	0.049	7.70	2.77	0.059	8.09	2.56	0.237
	No	2.81	1.31		4.89	2.08		7.06	2.55		8.39	2.02	
Ever smoked cigarette	Yes	3.37	1.31	0.099	5.06	2.46	0.828	7.13	2.53	0.949	8.53	1.84	0.767
	No	2.82	1.31		4.94	2.08	0.076	7.09	2.58		8.37	2.09	
use of cannabis	Yes	3.31	1.35	0.153	5.93	2.68		7.4	2.06	0.736	7.75	2.37	0.312
	No	2.83	1.32		4.95	2.08		7.12	2.59		8.37	2.10	
Ever used internet	Yes	2.88	1.31	0.309	5.11	2.35	0.118	7.30	2.44	0.101	8.57	2.14	0.010
	No	2.78	1.30		4.83	1.76		6.95	2.70		8.12	2.04	
Ever searched SRH information on the internet	Yes	3.06	1.27	0.017	5.41	2.34	0.002	7.67	2.38	<0.001	8.53	2.17	0.295
	No	2.78	1.35		4.74	1.99		6.75	2.67		8.31	2.15	
Internet apps ever used (n=329)	Facebook	2.98	1.25	0.409	5.06	2.37	0.958	7.07	2.42	0.339	8.5	2.21	0.240
	You Tube	2.95	1.57		5.26	2.25		6.98	2.85		7.92	2.25	
	Website	2.96	1.19		5.19	2.66		7.80	2.42		8.72	2.09	
	Others	3.40	1.19		5.16	2.09		7.42	2.65		8.60	1.92	
Ever caressed a boy/girlfriend/partner	Yes	2.94	1.36	0.571	5.36	2.36	0.097	8.62	1.91	<0.001	8.18	2.62	0.438
	No	2.85	1.31		4.90	2.07		6.94	2.60		8.39	2.02	
Ever kissed the boy/girlfriend/partner on the lips	Yes	2.98	1.42	0.262	5.41	2.19	0.050	8.21	2.19	<0.001	8.32	2.45	0.866
	No	2.82	1.30		4.91	2.09		6.96	2.62		8.36	2.06	
Ever touched a boy/girlfriend/partner's genitals with a hand	Yes	3.29	1.46	0.066	5.28	2.60	0.439	8.58	1.79	0.004	7.89	2.71	0.230
	No	2.84	1.31		4.96	2.08		7.04	2.61		8.38	2.06	

		Sexuality knowledge (0-6)			Knowledge of contraceptive methods (0-12)			Condom knowledge (0-14)			HIV/AIDS & STDs knowledge (0-13)		
		Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value
Frequency of ever watching pornographic films	Never	2.80	1.30	0.492	4.87	2.02	0.427	6.84	2.72	<0.001	8.38	2.12	0.987
	1-2 times	2.90	1.38		4.95	2.28		7.59	2.04		8.32	2.15	
	3-4 times	3.05	1.12		5.38	2.59		7.72	1.93		8.47	2.23	
	≥ 5 times	3.03	1.30		5.36	2.23		8.18	2.41		8.40	1.84	
Access to SRHR information	No	2.22	1.41	<0.001	4.86	1.96	0.787	5.82	3.12	<0.001	7.92	2.22	0.181
	Yes	2.88	1.29		4.96	2.10		7.22	2.51		8.38	2.08	

Table 7. 5: Attitudes towards sexuality norms and gender per early adolescents' characteristics

		Sexuality norms (9-36)			Gender attitude (10-40)		
		Mean	SD	p-value	Mean	SD	p
Variables	Categories	24.36	4.78		29.19	4.37	
Sex	Male	24.86	5.12	0.005	29.44	4.72	0.121
	Female	23.86	4.38		28.94	3.98	
Hometown	Rural	24.56	4.94	0.254	29.14	4.34	0.782
	Urban	24.15	4.62		29.23	4.40	
Age in years	12	24.19	4.35	0.239	28.91	4.38	0.624
	13	23.99	4.97		29.14	4.45	
	14	24.65	4.76		29.35	4.33	
Type of school	Public	24.57	4.52	0.216	29.37	4.06	0.238
	Private	24.12	5.05		28.98	4.69	
Grade	Senior 1	24.57	4.61	0.216	29.23	4.51	0.794
	Senior 2	24.12	4.97		29.14	4.21	
Religion	Catholic	24.60	5.00	0.268	28.95	4.50	0.221
	Protestant	24.39	4.49		29.48	4.09	
	Others	23.74	4.99		28.83	4.82	
Importance of religion	Not important	27.00	3.79	0.175	32.6	4.33	0.081
	(Very) important	24.35	4.76		29.22	4.30	
Economic status (Ubudehe) (n=791)	Poor (Category 1&2)	24.05	4.81	0.038	29.10	4.32	0.352
	Well off (categories 3&4)	24.85	4.47		29.43	4.24	
Parents are alive	None is alive	27.00	4.74	0.149	28.77	4.20	0.411
	One parent is alive	23.73	5.17		28.49	4.65	
	Both parents are alive	24.34	4.73		29.24	4.34	
Living with parents	None parent	24.07	5.49	0.904	28.59	4.22	0.681
	One parent	24.27	4.96		29.10	4.33	
	Both parents	24.41	4.67		29.29	4.46	
Perceived difficulty in communicating with the father	(Very) easy	24.38	4.54	0.775	29.30	4.32	0.507
	Average	24.69	4.54		28.98	4.13	
	(very) difficult	24.17	5.05		29.09	4.75	
	Do not see him	24.85	5.24		30.00	4.09	
Perceived difficulty in communicating with the mother	(Very) easy	24.52	4.57	0.340	29.41	4.15	0.084
	Average	23.90	5.40		28.32	4.95	
	(very) difficult	23.53	4.95		28.17	5.38	
	Do not see her	23.28	5.73		28.23	6.77	
Perceived difficulty in communicating with brothers or sisters	(Very) easy	24.62	4.49	0.006	29.39	4.17	0.008
	Average	24.00	6.12		29.44	4.68	
	(very) difficult	23.05	5.08		28.16	5.72	
	Do not see them	21.14	6.57		26.18	4.79	
Father's level of education	Primary & lower	25.00	4.88	0.274	29.33		0.906
	Technical and vocational training	24.04	5.20		29.00		
	Secondary	24.16	4.14		29.36		
	Higher	24.40	4.59		29.50		
Mother's level of education (n=693)	Primary or lower	24.69	4.80	0.535	29.18	4.54	0.605
	Technical and vocational training	24.53	4.10		29.49	3.46	
	Secondary	24.07	4.52		29.10	4.47	
	Higher	24.71	4.44		29.73	4.08	
Has brothers or sisters	Yes	24.39	4.76	0.627	29.21	4.40	0.441
	No	23.92	5.19		28.55	3.53	
	Often	24.14	4.55	0.486	28.75	4.39	0.177

		Sexuality norms (9-36)			Gender attitude (10-40)		
		Mean	SD	p-value	Mean	SD	p
Ever discussed sex matters with the father	Occasionally	24.69	4.65		29.69	4.32	
	Never	24.22	4.83		29.06	4.38	
Ever discussed sex matters with the mother	Often	24.27	4.52	0.960	29.32	4.08	0.646
	Occasionally	24.31	4.33		29.29	4.01	
	Never	24.39	5.29		28.98	4.96	
Ever discussed sex matters with brothers or sisters	Often	24.73	5.06	0.456	29.42	4.95	0.384
	Occasionally	24.58	4.02		29.55	3.83	
	Never	24.16	5.05		29.04	4.50	
Ever used a mobile phone	Yes	24.61	4.58	0.032	29.63	4.12	0.000
	No	23.77	5.23		28.15	4.55	
Ever attend parties	Yes	26.28	4.16	0.000	30.66	3.75	0.001
	No	24.14	4.80		29.04	4.38	
Ever drink alcohol	Yes	25.25	4.79	0.058	28.79	4.93	0.279
	No	24.23	4.75		29.33	4.23	
Ever smoked cigarette	Yes	24.31	3.96	0.961	28.8	3.68	0.713
	No	24.37	4.76		29.21	4.33	
use of cannabis	Yes	23.88	4.83	0.658	28.33	4.97	0.377
	No	24.40	4.77		29.25	4.35	
Ever watched pornographic films	Never	23.85	4.71	0.000	28.97	4.32	0.005
	At least once	25.56	4.62		29.96	4.20	
Ever used internet	Yes	24.55	4.54	0.322	29.84	3.92	0.000
	No	24.19	5.05		28.48	4.70	
Ever searched SRH information on the internet	Yes	24.88	4.72	0.039	29.82	4.11	0.039
	No	24.00	4.72		29.04	4.33	
Internet apps ever used (n=329)	Facebook	24.97	4.80	0.747	30.09	3.94	0.269
	You Tube	24.48	4.81		29.00	3.85	
	Website	24.73	4.49		29.87	4.05	
	Others	24.00	4.75		29.10	4.24	
Ever had to caress with a boy/girlfriend/partner	Yes	25.25	4.79	0.058	28.79	4.93	0.279
	No	24.23	4.75		29.33	4.23	
Ever kissed the boy/girlfriend/partner on the lips	Yes	26.34	4.46	0.000	29.98	3.95	0.067
	No	24.13	4.68		29.08	4.41	
Ever touched a boy/girlfriend/partner's genitals with a hand	Yes	26.54	5.34	0.007	29.34	4.35	0.843
	No	24.27	4.72		29.18	4.35	
Frequency of ever watching pornographic films	Never	23.85	4.71	0.000	28.97	4.32	0.0070
	1-2 times	24.97	4.46		29.79	3.93	
	3-4 times	26.44	6.45		28.66	5.23	
	≥ 5 times	26.87	4.10		30.93	4.46	
Access to SRHR information	No	1.9	0.3	0.835	28.5	4.8	0.245
	Yes	1.8	0.3		29.2	4.3	

7.3 CONCLUSION

This chapter focused on the SRHR knowledge and beliefs of early adolescents. It highlighted the extent to which early adolescents in Rwanda are knowledgeable about SRHR. Overall, their SRHR knowledge was found to be low (<50%) on sexuality and contraceptive methods. Participants also scored inadequately on condom knowledge (51%) and obtained the highest score on HIV/AIDS knowledge (65%). These findings suggest that, for most early adolescents,

SRHR knowledge ranged from poor (score <50%) to moderate (score of 50-79%) levels of knowledge. In contrast, most participants had favourable attitudes towards sexual norms (score >50%) and more gender-equitable attitudes (score >50%). The chapter also indicated that some participants' social-ecological characteristics were associated with their SRHR knowledge and attitudes. Health promotion activities should be undertaken to enhance SRHR knowledge and behaviours, with particular emphasis on domains with low knowledge: contraceptive methods and sexuality. Interventions should consider the social-ecological factors associated with SRHR knowledge and attitude. This suggests using a combination of strategies, including the use of comprehensive sexuality education, youth corners and youth-friendly services, as well as social media.

CHAPTER EIGHT

RELATIONSHIP BETWEEN GENDER AND SEXUALITY KNOWLEDGE, ATTITUDES AND SEXUAL EXPERIENCE

8.1 INTRODUCTION

Findings in this chapter address the fifth objective of this research, which is to determine the relationship between early adolescents' gender and sexuality knowledge and beliefs and their sexual experiences.

8.2 RESULTS

8.2.1 Non-penetrative sexual experiences

Participants reported various forms of nonpenetrative sexual experience. Participants have commonly experienced holding hands (73.6%, n=787), hugging (58.6%, n=783), kissing on the lips (13.3%, n=769), and caressing each other's body (12.1%, n=780). Concerning stroking the genitals, 23 of 757 (3%) participants indicated they have ever stroked their partner's genitals to climax, and 20 of 779 (2.6%) participants indicated their partners have ever done so for the participants. Touching the partner's genitals was reported by 34 of 773 (4.4%) participants, while 36 of 764 (4.7%) participants indicated their partners have ever done so for them. Overall, the findings show that 532 of 658 (80.9%) participants reported any of these forms of nonpenetrative sexual experiences (Table 8.1). The factors associated with non-penetrative sexual experience without adjustment for other factors included ever use of a mobile phone (OR: 1.6, 95%CI: 1.1-2.4); ever attendance of parties (OR: 9.9, 95%CI: 2.4-41.1); ever drinking alcohol (OR: 4.1, 95%CI: 1.6-10.3); ever use of internet (OR: 1.7, 95%CI: 1.1-2.5); and the father's primary and lower education level (OR: 1.9, 95%CI: 1.1-3.5) (Table 8.2). The logistic regression model was fitted to assess the relationship between nonpenetrative sexual experience and the covariates. The Hosmer-Lemeshow test yielded a p-value of 0.474, indicating no statistically significant difference between observed and predicted values. This suggests that the model provided an adequate fit to the data. Results from the adjusted logistic regression model indicated that ever attending parties where young people dance (AOR: 6.8, 95%CI: 1.6-29.2); ever using the internet (AOR: 1.9, 95%CI: 1.1-3.3); and having a father with lower education level (primary and lower: AOR=2.6, 95%CI: 1.3-5.0, and secondary: AOR=1.9, 95%CI: 1.0-3.8) were factors associated with non-penetrative sexual experience (Table 8.2).

8.2.2 Penetrative sexual experiences

The results indicate that 36 of 773 (4.6%) participants have had vaginal intercourse, and 22 of 793 (2.7%) have had anal intercourse. In addition, 21 of 796 (2.6%) participants reported they have ever had oral sex. Overall, 53 of 759 (7.0%) reported any penetrative sexual experience (oral, vaginal, anal penetration) (Table 8.1). Without adjusting for other factors, the factors associated with penetrative sexual experience included being a male (OR: 3.9, 95%CI:2.0-7.5), ever attending parties where young people dance (OR: 3.2, 95%CI: 1.6-6.4), ever drink alcohol (OR: 7.1, 95%CI: 3.8-13.2), ever smoking a cigarette (OR:16.7, 95%CI: 6.3-44.3), ever use of cannabis (OR:57.9, 95%CI: 18.0-186.3); and ever watching pornographic films (OR: 3.5, 95%CI: 1.9-6.4). In addition, participants whose none parent was alive (OR: 19.2, 95%CI: 4.9-74.4), whose perceived communication with the mother was difficult (OR: 3.4, 95%CI: 1.4-8.3), whose communication with brothers or sisters was perceived as difficult (OR: 2.6, 95%CI: 1.2-6.1) had higher odds of penetrative sexual experience. Additional factors associated with penetrative sexual experience in the bivariate analysis include ever being forced to have sexual intercourse (OR: 9.8, 95%CI: 5.1-19.0) and ever being touched on private parts (OR: 4.8, 95%CI: 2.4-9.5). Nevertheless, never discussing sex matters with the father was associated with reduced odds of penetrative sexual experience (OR: 0.3, 95%CI: 0.1-0.7) (Table 8.2). Concerning the assumptions made during the sampling process about low sexual debut among those with access (6%) and high sexual debut (18%) among those without access, we found that participants accessing SRHR information were 2.1 times more likely to experience penetrative sex than those without access (7.28% among those who access and 3.45% among those without access). However, this difference was not statistically significant (OR=2.1, 95% CI: 0.5-9.3, $p=0.272$). This could be due to factors such as social desirability. The logistic regression model was fitted to assess the factors associated with penetrative sexual experience. The Hosmer Lemeshow test had a p-value of 0.473, indicating no statistically significant difference between observed and predicted values and suggesting that the model provided a good fit to the data. The results from the multivariate logistic regression model indicated that male participants (AOR: 4.6, 95%CI: 1-8-12.4), ever drinking alcohol (AOR: 3.5, 95%CI: 1.4-8.8), ever watching pornography (3-5 times, AOR: 7.5, 95%CI: 1.6-34.9; ≥ 5 times, AOR: 5.1 (1.7-15.0); being a double orphan (AOR:17.8, 95% CI= 1.9-170.2); discussing sex matters often with one's father (AOR=6.5, 95% CI= 1.8-23.2) and ever being forced to have sexual intercourse (AOR: 8.2, 95%CI: 2.7-25.4) (Table 8.2).

Table 8. 1: Sexual experience of early adolescents by sex

Sexual experience	Gender							p-value
	Male		Female		All			
	n	%	n	%	n	%		
Non-penetrative experience								
Hugging	Yes	231	60.2	228	57.1	459	58.6	0.392
	No	153	39.8	171	42.9	324	41.4	
	Total	384	100.0	399	100.0	783	100.0	
Holding hands	Yes	290	74.9	289	72.3	579	73.6	0.393
	No	97	25.1	111	27.8	208	26.4	
	Total	387	100.0	400	100.0	787	100.0	
Caressing each other's bodies	Yes	63	16.4	31	7.8	94	12.1	<0.001
	No	321	83.6	365	92.2	686	87.9	
	Total	384	100.0	396	100.0	780	100.0	
Kissing a boy/girlfriend/partner on the lips	Yes	61	15.9	41	10.6	102	13.3	0.030
	No	322	84.1	345	89.4	667	86.7	
	Total	383	100.0	386	100.0	769	100.0	
Touching a boy/girlfriend/partner's vagina/penis with a hand	Yes	27	7.1	7	1.8	34	4.4	<0.001
	No	354	92.9	385	98.2	739	95.6	
	Total	381	100.0	392	100.0	773	100.0	
Stroking a boy/girlfriend/partner's vagina/penis so that she/he climaxed	Yes	18	4.9	5	1.3	23	3.0	0.004
	No	348	95.1	386	98.7	734	97.0	
	Total	366	100.0	391	100.0	757	100.0	
His/her boy/girlfriend/partner ever touch her/his penis/vagina with her/his hand	Yes	26	6.8	10	2.6	36	4.7	0.006
	No	354	93.2	374	97.4	728	95.3	
	Total	380	100.0	384	100.0	764	100.0	
His/her boy/girlfriend/partner ever stroke his/her penis/vagina so that you climaxed	Yes	16	4.2	4	1.0	20	2.6	0.006
	No	369	95.8	390	99.0	759	97.4	
	Total	385	100.0	394	100.0	779	100.0	
Prevalence of any form of non-penetrative sexual experience	Yes	262	81.9	270	79.9	532	80.9	0.516
	No	58	18.1	68	20.1	126	19.1	
	Total	320	100.0	338	100.0	658	100.0	
Penetrative experience								
Ever had oral sex	Yes	18	4.6	3	0.7	21	2.6	0.001
	No	373	95.4	402	99.3	775	97.4	
	Total	391	100.0	405	100.0	796	100.0	
Ever had anal intercourse	Yes	21	5.4	1	0.2	22	2.8	<0.001
	No	369	94.6	402	99.8	771	97.2	
	Total	390	100.0	403	100.0	793	100.0	
Ever had vaginal intercourse with anyone	Yes	26	6.9	10	2.5	36	4.7	0.004
	No	353	93.1	384	97.5	737	95.3	
	Total	379	100.0	394	100.0	773	100.0	
Prevalence of penetrative sexual experience	Yes	41	11.1	12	3.1	53	7.0	<0.001
	No	330	88.9	376	96.9	706	93.0	
	Total	371	100.0	388	100.0	759	100.0	

Table 8. 2: Bivariate and multivariate logistic regression analysis between participants' sexual experience and social-ecological covariates

Variable	Categories	Non-penetrative sexual experience		Penetrative sexual experience	
		COR (95%CI), p-value	AOR (95%CI), p-value	COR (95%CI), p-value	AOR (95%CI), p-value
Individual level					
School location	Rural	1		1	
	Urban	1.1(0.7-1.5), 0.797		0.5 (0.3- 1.0), 0.057	
Sex	Female	1		1	1
	Male	1.1(0.7-1.7), 0.516		3.9 (2.0-7.5), <0.001	4.6(1.8-12.4), 0.002
Age in years	12	1		1	
	13	0.8(0.5-1.6), 0.701		0.5 (0.2- 1.3), 0.164	
	14	1.1(0.6-1.9), 0.864		0.8 (0.4- 1.9), 0.779	
Type of school	Public	1		1	
	Private	0.9(0.6-1.3), 0.639		1.7 (.9- 3.0), 0.060	
Grade	Senior 1	1		1	
	Senior 2	0.7(0.5-1.1)		0.6 (0.3- 1.2), 0.210	
Religion	Catholic	1		1	
	Protestant	1.0(0.7-1.6), 0.939		0.5 (.2- 1.0), 0.053	
	Others	0.8(0.4-1.4), 0.369		0.7 (0.3-1.6), 0.499	
Ever used a mobile phone?	Yes	1	1	1	
	No	0.6(0.4-0.9), 0.023	1.0 (0.6-1.8), 0.999	1.0 (0.5-1.8), 0.970	
Ever attend parties where young people dance	No	1	1	1	1
	Yes	9.9(2.4-41.1), 0.002	6.8 (1.6-29.2), 0.010	3.2 (1.6-6.4), 0.001	0.9(0.3-3.0), 0.982
Ever drink alcohol	No	1	1	1	1
	Yes	4.1(1.6-10.3), 0.003	1.9 (0.6-5.8), 0.217	7.1 (3.8-13.2), <0.001	3.5(1.4-8.8), 0.008
Ever smoked cigarette	No	1		1	1
	Yes	omitted		16.7 (6.3-44.3), <0.001	2.4(0.3-19.5), 0.415
use of cannabis	No	1		1	1
	Yes	3.2(0.4-25.2), 0.253		57.9(18.0-186.3), <0.001	5.1(0.7-38.8), 0.111
Ever used internet	No	1	1	1	
	Yes	1.7(1.1-2.5), 0.010	1.9 (1.1-3.3), 0.023	1.1 (0.6-1.9), 0.722	
Ever searched SRH information on the internet	No	1		1	
	Yes	1.4(0.8-2.2), 0.154		0.7 (0.3-1.4), 0.292	
Internet apps ever used	Facebook	1		1	
	You Tube	0.9(0.4-2.2), 0.955		1.8 (0.6- 5.6), 0.263	
	Website	1.1(0.4-2.5), 0.850		0.3 (.04-2.7), 0.301	
	Others	0.9(0.3-2.6), 0.865		1.2 (0.2-6.2), 0.785	
Frequency of ever watching pornographic films	Never	1		1	1
	1-2 times	1.6(0.9-2.8), 0.062		2.4 (1.2-4.9), 0.012	1.9(0.7-5.4), 0.193
	3-4 times	1		10.1 (3.5-29.0), <0.001	7.5(1.6-34.9), 0.010
	≥ 5 times	1		4.7 (2.0-10.9), <0.001	5.1(1.7-15.0), 0.003
Family level					
Parents are alive	None is alive	1		19.2 (4.9-74.4), <0.001	17.8(1.9-170.2),0.013
	One parent is alive	0.8(0.4-1.6), 0.667		1.7 (0.7-4.11), 0.185	2.6(0.8-8.5),0.118
	Both parents are alive	1		1	

Variable	Categories	Non-penetrative sexual experience		Penetrative sexual experience	
		COR (95%CI), p-value	AOR (95%CI), p-value	COR (95%CI), p-value	AOR (95%CI), p-value
Living with parents	None parent	0.5(0.2-1.2), 0.115		2.6 (0.8-8.0), 0.090	
	One parent	1.1(0.6-1.7), 0.835		1.2 (0.6-2.6), 0.497	
	Both parents	1		1	
Perceived difficulty in communicating with the father	(Very) easy	1		1	
	Average	0.8(0.5-1.5), 0.640		0.9 (0.4-2.5), 0.953	
	(very) difficult	1.8(0.9-3.4), 0.088		1.4 (0.6-3.5), 0.446	
	Do not see him	1.0(0.5-2.1), 0.088		2.1 (0.8-5.4), 0.141	
Perceived difficulty in communicating with the mother	(Very) easy	1		1	1
	Average	0.8(0.5-1.6), 0.640		1.7 (0.7-4.4), 0.236	1.5(0.4-5.9), 0.535
	(very) difficult	4.0 (0.9-16.9), 0.059		3.4 (1.4-8.3), 0.006	2.7(0.8-8.8), 0.101
	Do not see her	0.7(0.2-2.6), 0.610		1	1.1(0.1-14.8), 0.955
Perceived difficulty in communicating with brothers or sisters	(Very) easy	1		1	1
	Average	0.5(0.3-1.0), 0.051		1.4 (0.5-3.6), 0.529	1.5 (0.4-5.5), 0.535
	(very) difficult	1.0(0.5-2.2), 0.942		2.6 (1.2-6.1), 0.020	2.7 (0.8-8.7), 0.101
	Do not see them	0.5(0.2-1.5), 0.242		3.2 (0.8-11.4), 0.077	1.1(0.07-14.8), 0.955
Father's level of education	Primary & lower	1.9(1.1-3.5), 0.025	2.6 (1.4-5.0), 0.003	2.0 (0.6-6.2), 0.230	
	TVET	0.9(0.4-1.9), 0.854	1.4 (0.6-3.1), 0.389	0.8 (0.2-4.7), 0.853	
	Secondary	1.4(0.7-2.6), 0.255	1.9 (1.0-3.8), 0.039	2.6 (0.8-8.3), 0.090	
	Higher	1	1	1	
Mother's level of education	Primary or lower	0.9(0.5-1.6), 0.727		0.8 (0.3-1.9) 0.650	
	TVET	0.9(0.4-2.4), 0.930		1.8 (0.6-5.1), 0.220	
	Secondary	0.8(0.4-1.6), 0.578		0.4 (0.1-1.3), 0.136	
	Higher	1		1	
Has brothers or sisters	Yes	1		1	
	No	2.0(0.6-6.8), 0.254		0.9 (0.2-4.2), 0.966	
Ever discussed sex matters with the father	Often	0.6(0.3-1.2), 0.121		3.5(1.5-8.2), 0.004	6.5(1.8-23.2), 0.004
	Occasionally	0.8(0.5-1.3), 0.385		1.9(1.0-3.6), 0.046	1.7(0.7-4.3), 0.202
	Never	1		1	1
Ever discussed sex matters with the mother	Often	1		1	
	Occasionally	1.2(0.7-1.8), 0.528		0.6 (0.3-1.4), 0.221	
	Never	1.2(0.7-1.9), 0.456		1.6 (0.8-3.2), 0.188	
Ever discussed sex matters with brothers or sisters	Often	1		1	
	Occasionally	0.7(0.3-1.5), 0.417		1.2 (0.4-3.3), 0.775	
	Never	0.6(0.3-1.3), 0.201		0.9 (0.4-2.5), 0.931	
Community level					
Economic status	Poor (Category 1-2)	1		1	
	Well-off (Category 3-4)	1.4(0.8-2.1), 0.163		0.7 (0.4-1.4), 0.370	
	Do not know	1.3(0.7-2.4), 0.370		2.3 (1.1-4.6), 0.019	
	No	1		1	

Variable	Categories	Non-penetrative sexual experience		Penetrative sexual experience	
		COR (95%CI), p-value	AOR (95%CI), p-value	COR (95%CI), p-value	AOR (95%CI), p-value
Access to SRHR information	Yes	1.2(0.6-2.5), 0.542		2.2 (0.5-9.3), 0.284	
Ever been forced to have sexual intercourse	No	1		1	
	Yes	2.5(0.9-7.3), 0.079		9.8 (5.1-19.0), <0.001	8.2(2.7-25.4), <0.001
Ever touched on private parts (breast, etc.) without their willingness	No	1		1	
	Yes	1.8(0.7-4.4), 0.183		4.8 (2.4-9.5), <0.001	0.8(0.2-2.9), 0.736

*COR: crude odds ratio; AOR: adjusted odds ratio

8.2.3 Relationship between gender and sexuality knowledge, attitudes and sexual experience

The findings also indicated that non-coital (non-penetrative) ($p<0.001$) and coital (penetrative) experiences ($p=0.007$) were associated with higher scores on the participants' knowledge about condoms as compared to others. Similarly, non-coital ($p<0.001$) and coital experience ($p=0.001$) were associated with higher scores on attitudes towards sexual norms. In addition, the non-coital experience was significantly associated with a higher score on participants' attitudes towards gender as compared to others ($p<0.001$). In contrast, participants with coital experience scored significantly lower as compared to others on their knowledge about HIV/AIDS and other sexually transmitted diseases ($p=0.019$). Participants' scores were not statistically different for the remaining domains of SRHR knowledge (Table 8.4).

Table 8. 3: Gender and sexuality knowledge, attitudes and sexual experience of early adolescents

SRH knowledge and beliefs			Sexual experience					
Domain	Minimum score	Maximum score	Nonpenetrative sexual experience			Penetrative sexual experience		
			No	Yes	p-value	No	Yes	p-value
Knowledge about sexuality	0	6	2.67	2.91	0.078	2.83	2.97	0.490
Knowledge of contraceptive methods	0	12	4.57	5.06	0.060	4.92	5.22	0.408
Knowledge about condom	0	14	5.88	7.38	<0.001	7.06	8.20	0.007
Knowledge about	0	13	8.25	8.33	0.743	8.43	7.60	0.019

HIV/AIDS and STDs								
Attitudes towards gender	10	40	27.18	29.67	<0.001	29.14	29.69	0.409
Attitudes towards sexual norms	9	36	21.43	25.02	<0.001	24.20	26.4	0.001

8.3 CONCLUSION

A high proportion of participants were engaged in nonpenetrative sexual experience, and a non-negligible proportion reported penetrative sexual experience. Some social-ecological factors were associated with sexual experience. Permissive attitudes were associated with participants' nonpenetrative sexual experiences. There is a need to consider multiple levels of the social-ecological environment of early adolescents' health to improve early adolescents' SRHR knowledge, attitudes and sexual experience.

CHAPTER NINE

EARLY ADOLESCENTS' SEXUAL BEHAVIOURS AND HEALTH OUTCOMES

9.1 INTRODUCTION

This chapter provides the findings on early adolescents' sexual behaviours and their health outcomes. By doing this, we respond to the sixth objective of our research: to determine the relationship between early adolescents' gender and sexuality knowledge, beliefs and behaviours and specific health outcomes. This was achieved by analysing data from the survey on health outcomes and conducting qualitative interviews (FGDs) with the study participants, as specified in Chapter 3.

9.2 RESULTS

9.2.1 Quantitative findings

9.2.1.1 Sexual behaviours of early adolescents

The results on sexual behaviours of early adolescents indicate that 297 (36.6%) have ever used a contraceptive method, with 55.7% (n=142) who practised periodic abstinence while 20% (n=51) used condoms. This proportion of lifetime users of contraceptive methods includes 17% of girls (n=138) and 19.6% of boys (n=159). Early adolescents have also used other methods, including withdrawal (5.5%), pills (1.9%), emergency contraceptive pills (1.6%), and injections (1.8%). Concerning being in relationships, 245 of 788 (31%) reported ever having a boyfriend, girlfriend or partner. The mean age of the partner was 13.8 ± 1.9 , and girls had a significantly older partner (14.6 ± 1.7 versus 13.3 ± 1.3) compared to boys ($p < 0.001$). Nearly five per cent (n=39) of 783 participants reported ever being attracted to people of the same sex, and 60 of 750 participants (8%) reported ever being forced to have sexual intercourse against their will. The average number of sexual partners for the 28 participants was 2.5 ± 1.97 and 62 out of 739 participants (8.4%) reported ever being touched on private parts unwillingly, but this rarely happened for 23 participants (57.5%, n=40), sometimes for 9 participants (22.5%, n=40) and often for eight participants (20%, n=40).

Concerning sexual intercourse in exchange for money or any other gift, 32 of 719 (4.5%) reported 'yes' to this question, and 25 of 451 participants (5.5%) indicated ever receiving money or gifts for sexual intercourse. Three of 12 participants (25%) indicated that they never did anything to avoid pregnancy during sexual intercourse, while the remaining nine participants indicated using condoms (n=5) and pills (n=4).

Concerning regretting having intercourse, eight of them (61.5%) did not regret while five (38.5%) regretted having intercourse. Participants reported on their first-time sexual intercourse (n=13) and said they forced (n=2), persuaded (n=2), the partner persuaded (n=2), they forced (n=4), and both willing (n=3). In addition, their first sex partner was non-intimate (stranger/relative/another person, one nightstand or commercial sex), seven participants (n=10), while three of these ten participants indicated that the first sex partner was intimate (boy/girlfriend). Four boys reported that the mean age for their first sex partner was 12.75 ± 2.5 years, and girls did not report anything on this question. The mean age for six participants at the first sexual intercourse was 12.0 ± 0.9 in general, 12.5 ± 0.9 for boys and 11.5 ± 0.7 for girls.

Concerning ever discussing contraception before or after their sexual intercourse, participants (n=13) reported never (n=5), before first intercourse (n=5) and after first intercourse (n=3). Concerning the participants' plans for sexual intercourse, 504 of 715 participants (70.5%) reported waiting until marriage, 148 participants (20.7%) reported waiting for engagement, 55 participants (7.7%) waiting for someone they love, and 8 participants (1.1%) plan to have sexual intercourse when an opportunity comes along.

About experiencing any pressure to have sexual intercourse, 661 of 711 participants (92.9%) reported no pressure, while 35 of them (4.9%) reported little pressure, but 15 participants (2.1%) indicated a great deal of pressure. The sources of pressure reported by participants (n=33) include friends (57.5%), partners/special friends (18.2%), others (18.2%) and relatives (6.1%).

Concerning sexual intercourse as a good experience, 50 of 656 participants (7.6%) reported that sexual intercourse could be a positive experience, including a significantly higher proportion of boys compared to girls. (6.4%, n=42 versus 1.2%, n=8), $p < 0.001$ (Table 9.1).

Table 9. 1: Early adolescents' sexual behaviours by sex of participants

Variables	Categories	Total		Sex		
		Frequency	Per cent	Male N(%)	Female N(%)	p-value
Have you ever used any of the contraceptive methods? (n=255)	Pill	5	1.96	0 (0.00)	5 (1.96)	<0.001
	Injection	4	1.57	0 (0.00)	4 (1.57)	
	Condom	51	20.00	38 (14.90)	13 (5.10)	
	Emergency contraceptive Pills	4	1.57	0 (0.00)	4 (1.57)	
	Withdrawal	14	5.49	7 (2.75)	7 (2.75)	
	Periodic abstinence	142	55.69	65 (25.49)	77 (30.20)	
	Other	35	13.73	14 (5.49)	21 (8.24)	
Do you have or have you ever had a girl/boyfriend/partner (n=788)	Yes	245	31.09	130 (16.50)	115 (14.59)	0.163
	No	543	68.91	259 (32.87)	284 (36.04)	

How old was/is your boy/girlfriend/partner? (n=223)	M ±SD	13.87±1.94		13.21±1.30	14.60±1.78	<0.001
How many people have you had sexual intercourse with? (n=28)	M ±SD	2.5±1.97		2.66±1.71	2.2±2.44	0.558
Some young people/females are touched on the breast or some other part of the body when they do not want to be, by a stranger, a relative or an older person. Has this ever happened to you? (n=739)	Yes	62	8.39	29 (3.92)	33 (4.47)	0.888
	No	677	91.61	323 (43.71)	354 (47.90)	
Frequency of being touched unwillingly (n=40)	Often	8	20.0	4 (10.00)	4 (10.00)	0.374
	Sometimes	9	22.5	2 (5.00)	7 (17.50)	
	Rarely	23	57.5	11 (27.50)	12 (30.00)	
Some young people pay money or gifts in exchange for sexual intercourse. Has this ever happened to you? (n=719)	Yes	32	4.5	21 (2.92)	11 (1.53)	0.050
	No	687	95.5	329 (45.76)	358 (49.79)	
Some people receive money or gifts in exchange for sexual intercourse. Has this ever happened to you? (n=451)	Yes	25	5.54	14 (3.10)	11 (2.44)	0.308
	No	426	94.46	194 (43.02)	232 (51.44)	
Did you or the sexual partner do anything to avoid pregnancy on these occasions? IF YES, Always or sometimes? (n=12)	Always	4	33.33	2 (16.67)	2 (16.67)	0.091
	Sometimes	5	41.67	1 (8.33)	4 (33.33)	
	Never	3	25.00	3 (25.00)	0 (0.00)	
What method was used the last time you had sexual intercourse? (n=9)	Condom	5	55.56	1 (11.11)	4 (44.44)	0.343
	Pill	4	44.44	2 (22.22)	2 (22.22)	
Did you regret having intercourse that first time? (n=13)	Yes, regretted	5	38.46	4 (30.77)	1 (7.69)	0.279
	No, not regretted	8	61.54	4 (30.77)	4 (30.77)	
Think back to the first time you had sex with your boy/girlfriend/partner - I mean the first time that the penis was in the vagina (n=13)	(a)I forced	2	15.38	1 (7.69)	1 (7.69)	0.513
	(b)I persuaded	2	15.38	2 (15.38)	0 (0.00)	
	(c)He/she persuaded	2	15.38	1 (7.69)	1 (7.69)	
	(d)He/she forced	4	30.77	1 (7.69)	3 (23.08)	
	(e) Both willing	3	23.08	2 (15.38)	1 (7.69)	
First sex partner (n=10)	Non-intimate	7	70.00	3 (30.00)	4 (40.00)	0.091
	Intimate(boy/girlfriend)	3	30.00	3 (30.00)	0 (0.00)	
How old was the first person you had sexual intercourse with? (n=4)	M ±SD	12.75 ±2.5		12.75 ±2.5	- (n=0)	-
How old were you the first time you had sex? (n=6)	M ±SD	12.0±0.89		12.25±0.95	11.5±0.70	0.391
Did you ever discuss contraception with your boy/girlfriend? IF YES Did you discuss contraception before or after you first had intercourse? (n=13)	Before first intercourse	5	38.46	4 (30.77)	1 (7.69)	0.144
	After first intercourse	3	23.08	2 (15.38)	1 (7.69)	
	Never	5	38.46	1 (7.69)	4 (30.77)	
	Wait until marriage	504	70.49	239 (33.43)	265 (37.06)	<0.001

Plans about sexual intercourse. Which of these statements best describes your plans (n=715)?	Wait until I am engaged to be married	148	20.70	64 (8.95)	84 (11.75)	
	Wait until I find someone I love	55	7.69	38 (5.31)	17 (2.38)	
	Have sexual intercourse when an opportunity comes along	8	1.12	8 (1.12)	0 (0.00)	
Do you feel any pressure from others to have sexual intercourse? IF YES, A great deal or a little? (n=711)	A great deal	15	2.11	10 (1.41)	5 (0.70)	0.284
	A little	35	4.92	19 (2.67)	16 (2.25)	
	None	661	92.97	317 (44.59)	344 (48.38)	
From whom do you feel pressure? (n=33)	Friends	19	57.58	11 (33.33)	8 (24.24)	0.134
	Relatives	2	6.06	0 (0.00)	2 (6.06)	
	Partner/special friend	6	18.18	5 (15.15)	1 (3.03)	
	Other	6	18.18	2 (6.06)	4 (12.12)	
Do you think that sexual intercourse could be a positive experience? (n=656)	Yes	50	7.62	42 (6.40)	8 (1.22)	<0.001
	No	606	92.38	279 (42.53)	327 (49.85)	

9.2.1.2 Health outcomes of early adolescents

Concerning the participants' health outcomes, four of 311 boys (1.3%) reported having ever made a girl/woman pregnant, and nearly 88% responded that they never made a woman/girl pregnant, while 35 participants (11.3% were not sure). On the other hand, none of the 321 girls reported ever pregnancy, while 31 of them (9.7%) were not sure. Nearly 31% of the 706 participants reported ever testing for HIV, and nearly 3% of 720 participants reported ever having a sexually transmitted disease (Table 9.2).

Table 9. 2: Health outcomes among early adolescents

Items	Categories	Frequency	Per cent
Have you ever made a girl or woman pregnant (For boys only) (n=311)	Yes	4	1.3
	Never	272	87.5
	Not sure	35	11.3
Have you ever been pregnant (for girls only) (n=321)	Yes	0	0.0
	Never	290	90.3
	Not sure	31	9.7
Have you ever done an HIV test (n=706)	Yes	218	30.9
	No	488	69.1
Have you ever had a sexually transmitted disease (n=720)	Yes	21	2.9
	No	699	97.1

9.2.1.3 Association between SRHR knowledge, beliefs and health outcomes

The assessment of participants' SRHR knowledge, beliefs and health outcomes is depicted in Table 9.3. The results indicated significantly higher scores on the knowledge about sexuality ever doing an HIV/AIDS test (3.1 ± 1.4 , $p=0.001$) as compared to others. For the knowledge of contraceptive methods, significantly higher scores were obtained by participants who ever did an HIV test (5.3 ± 2.1) as compared to others (4.7 ± 2.1 , $p=0.014$). In addition, participants who ever had an HIV test significantly scored higher on knowledge about condoms (7.7 ± 2.2) as compared to those who had not tested for HIV (6.8 ± 2.6), $p<0.001$. Concerning participants' attitudes towards gender, those who had ever done an HIV test (29.8 ± 3.8 , $p=0.036$) scored significantly higher as compared to others. Finally, participants' attitudes towards sexual norms indicated that there were significantly higher scores ($p<0.001$) for those who ever did an HIV test (25.4 ± 4.8) compared to the remaining ones (23.9 ± 4.6). Other associations between participants' SRHR knowledge, beliefs and health outcomes were not statistically significant, and no association test was conducted between domains of SRHR knowledge and ever impregnating a girl/woman due to low frequency. Similarly, it is essential to note that we did not test the association between being pregnant and participants' SRHR knowledge and beliefs because no single participant reported this outcome.

Table 9. 3: Relationship between early adolescents' knowledge, beliefs and their health outcomes

Knowledge domain	Health outcomes					
	Ever done an HIV test (mean $\pm$ SD)			Ever had a sexually transmitted disease (mean $\pm$ SD)		
	Yes	No	p	Yes	No	p
Knowledge about sexuality (0-6)	3.1 $\pm$ 1.4	2.7 $\pm$ 1.3	0.001	2.8 $\pm$ 1.1	2.8 $\pm$ 1.3	0.895
Knowledge of contraceptive methods (0-13)	5.3 $\pm$ 2.1	4.7 $\pm$ 2.1	0.014	4.7 $\pm$ 2.4	4.9 $\pm$ 2.1	0.750
Knowledge about condoms (0-14)	7.7 $\pm$ 2.2	6.8 $\pm$ 2.6	<0.001	7.4 $\pm$ 2.4	7.1 $\pm$ 2.5	0.676
Knowledge about HIV/AIDS and STDs	8.4 $\pm$ 2.1	8.3 $\pm$ 2.1	0.614	7.8 $\pm$ 2.1	8.3 $\pm$ 2.1	0.275
Attitudes towards gender (10-40)	29.8 $\pm$ 3.8	29.1 $\pm$ 4.4	0.036	28.8 $\pm$ 4.4	29.3 $\pm$ 4.3	0.666
Attitudes towards sexual norms (9-36)	25.4 $\pm$ 4.8	23.9 $\pm$ 4.6	<0.001	25.4 $\pm$ 5.7	24.4 $\pm$ 4.7	0.335

9.2.2 Influence of SRHR information and knowledge and beliefs on early adolescents' sexual and reproductive health outcomes: qualitative findings

Through the focus group discussions, we asked participants how different kinds of information from various sources contribute to their SRHR knowledge and how they affect their behaviours and health outcomes. The findings relate to the risks associated with accessing inappropriate information, the consequences of misbehaving, the adoption of healthy behaviours, and raising early adolescents' awareness about some essential sexual and reproductive health issues.

9.2.2.1 Access to inappropriate SRHR information and misinformation

Participants highlighted the risks associated with inappropriate information from some sources, such as the internet, where some of them access pornography. They noted that some information was dangerous and could lead to temptations. They said that they would avoid watching pornography rather than being pregnant because of watching it.

“Watching pornographic films is very dangerous because you may be tempted into sexual intercourse without thinking and deciding about it.” (FGD 2)

“I have never watched pornography and will never do it because peers say it has nothing good. It is not appropriate to watch it with a boy because I may be tempted to have sex with him, and this may result in an unplanned pregnancy. I would avoid pornography rather than being pregnant.” (FGD 12)

Participants indicated that the risks of misinformation were high and noted that they needed reliable information, that the risks were also extant, and that wrong information could negatively affect them.

“We need reliable information to protect ourselves. However, some people may give us information which is not true and which may negatively affect our lives.” (FGD 8)

Participants indicated that the internet provides them with information they do not request, which is inappropriate and kills their minds.

“Sometimes, the internet gives us the information we did not request. For example, you may search for reproductive health information, and it gives you pornographic images and videos which you cannot get rid of immediately. This kills our minds because we may be tempted to do what we watch in these films.” (FGD 6)

Furthermore, accessing inappropriate information from the internet creates risks for practising what they watched, like sexual activity.

“There are times when you go to the internet and see naked boys and girls, or you find your elder sister/brother watching them. You also watch that sexual activity. Back to school, you start dating a girl and requesting her to do what you watched earlier.” (FGD 7)

Some participants said they choose not to use the internet to protect their minds and avoid temptations from its use.

“I do not use the internet to protect my mind and avoid the temptations of having sex. It may cause me to try what I watch, which may result in an unplanned pregnancy and other sexually transmitted diseases.” (FGD 13)

9.2.2.2 Consequences of inappropriate behaviours

Participants discussed the consequences of inappropriate behaviours, including early pregnancy, school dropout and poverty.

“Unsafe sexual intercourse may lead to pregnancy, school dropout and poverty. The parents' resources spent on schooling become null, and other children laugh at you because you did not hear your parents' advice of abstaining from sex and other bad behaviours. Drinking alcohol is risky and leads to inappropriate behaviours. Parents advise us not to drink alcohol, and we should follow their advice. We cannot drink alcohol from the parental advice, and we stop relationships between people who want us to drink alcohol.” (FGD 4)

Participants noted that knowing the consequences of inappropriate behaviours allows them to avoid these behaviours and protect them against these consequences.

“No single boy can indulge me in sex because I have learnt about protecting myself. I cannot accept early sexual activity because I am very aware of its consequences, including leaving me alone and a lack of adequate capacity and parenting skills. I can prevent the consequences when I am aware of them. I can manage peer pressure and avoid its consequences because I was taught about them.” (FGD 13)

“When we hear about the consequences of misbehaving, we try to avoid the pathways that lead to those consequences and live a better life.” (FGD 4)

9.2.2.3 Adopting healthy behaviours

Participants discussed how received information shaped their behaviours and helped them to adopt healthy ones. These include avoidance of unsafe sexual intercourse and the prevention of early pregnancy because they are still too young to get pregnant, give birth to children and care for them. They tell them to wait until they become adult people. They include hygienic practices about the appropriate use of pads, cutting hair in private parts, washing underwear, and creating safe relationships with peers. They indicated that information helps them to run away from bad friends, those with bad influences related to sexual intercourse and drug use, and those who want sex in exchange for gifts. They indicated refusing these gifts because they may be a way to unplanned sexual intercourse.

“That is why they tell us to avoid early sexual activity. We are still young and are not able to build a family. That is why they tell us to wait until we are grown, to focus on schooling until its end and secure our future.” (FGD 11)

“It gave me knowledge about how a girl behaves during the menstruation period and how to use sanitary pads.” (FGD 8)

“A grown person must be hygienic by cutting hair, washing underwear, avoiding those who mislead him/her and having good friends.” (FGD 11)

“Bad friends lead us into bad behaviours, and we should avoid bad peer influences related to sexual intercourse and drug use. Bad friends want sex and might give us gifts to have sex, and they leave you alone when you tell them you are pregnant.” (FGD 11)

“Some girls misguide others and tell them to accept gifts and engage in commercial sex to have money. We need to avoid this, know bad friends who can lead us into sex, and avoid such friends.” (FGD 11)

“I avoid meeting unnecessary needs such as shoes and other gifts from men who want sex in exchange. Some peers may tell me to accept these gifts as they do. They have sex after receiving these gifts, which they also want me to do.” (FGD 11)

Participants noted that SRHR information gives them a sense of responsibility for their behaviours.

“It gives me a sense of responsibility and helps me to avoid peers with bad behaviours such as liking gifts, drinking alcohol and other drugs, temptations of all kinds, which is not good.” (FGD 10)

In addition, participants highlighted that they use the received information to avoid sexual violence, touching people's private parts unwillingly, using a condom, and avoiding dating girls. They indicated that they prevent sexual violence by not visiting friends in a private place and believe that those who are not aware may suffer the dangers and may not be rescued from violence. Furthermore, participants indicated that girls are physically weak to resist coerced sex and should not visit boys in private places.

"I use the information I receive to avoid sexual violence. I teach my colleagues about avoiding sexual violence and unwanted touching on them, and using a condom before any sexual intercourse." (FGD 11)

"My father told me it is not good to date girls because I am still young. You may tell her that you like her and suggest having sex, which she might probably immediately accept. This may result in an unplanned pregnancy or sexually transmitted infection. I need to abstain from early sexual activity and wait until I grow into an adult." (FGD 11)

"Parents warn us about people who invite you to visit them tonight in private places. However, uninformed adolescents accept such invitations, and the consequences are enormous: rape and violence. Informed people shout for rescue, and such people are arrested. If not informed, you may have an unplanned pregnancy and suffer violence." (FGD 6)

"Girls are physically weak, and boys are stronger than girls. A visit to a boy who lives alone may result in coerced sex, early pregnancy, and sexually transmitted diseases. The consequences are many. Therefore, we do not accept visiting boys who live alone in ghettos." (FGD 6)

Furthermore, participants indicated that they receive information about being satisfied with what their parents offer them within their capabilities, which helps them to live safe health.

"They tell us to avoid people who misguide us and want to give us gifts and money. We must be satisfied with what parents give us within their capabilities and accept ourselves and the way we live." (FGD 12)

In addition, participants revealed that the information received helps them to foster their decision-making about sexual and reproductive health and show parents that they give value to their advice and take it seriously. It also allowed them to decide to abstain from sex and to wait for marriage to have sexual intercourse.

“We need to think thoroughly about everything we do and its consequences. We also think about the parental advice we received and how they may feel when I did not respect their advice. What will brothers and sisters and friends say? They may take me as someone who did not hear them and did not take their information seriously.” (FGD 12)

“I decided to abstain from sex and wait for marriage to have sexual intercourse.” (FGD 7)

Participants further highlighted that early adolescents who do not respect their parents’ advice may be subject to family rejection, especially when they fall pregnant after being warned by their parents.

“The information allows us to think first about the possible consequences and stay away from them. Girls may face early pregnancy and subsequently rejection by family members because of not valuing parental advice. We learn we can use condoms or emergency pills to prevent pregnancy.” (FGD 12)

Furthermore, participants revealed that SRHR knowledge gives them opportunities to change their behaviours and that uninformed ones can be easily misled and cannot resist temptations. They noted that SRHR information helps them escape temptations and eliminate misinformation, analyse information from various sources, and rely on what is trustworthy. They indicated that informing them changes their lives.

“I use this information to change my future behaviour. I can reject any solicitation from different people. I can be misled anywhere in drug use or early sexual activity when I am not informed.” (FGD 2)

“Some boys want to misguide us with their gifts of money and mobile phones. Adolescents who are not well-informed are easily tempted to accept these gifts and have to pay them back through sexual intercourse. Those who are well-informed can reject those gifts from people other than their parents because consequences may follow.” (FGD 3)

“The information helps me to run away from temptations and misinformation.” (FGD 7)

“The information we receive changes our lives because we learn to avoid misbehaving and peer influence.” (FGD 3)

“It allows us not to trust everyone, to rely on what we are very sure of from parents, schoolteachers and government figures.” (FGD 2)

In addition, female participants revealed that SRHR information allows them to protect themselves against boys' false declarations about love, temptations and traps of going out with people of the opposite sex and drinking alcohol. It allows them to identify the preferences of their peers and choose among those they can benefit from.

“It protects us against false statements of love, various temptations and traps that may result in rape, and early and unplanned sexual activity. We may believe boys’ statements about love are true while they are not. Their [boys] traps include going out with them and drinking alcohol. They aim to have sexual intercourse. We can identify the preferences of our peers and choose those that benefit us.” (FGD 9)

Participants indicated that the information they receive helps them to change their behaviours about using social media by avoiding watching pornography and sending images of sexual activity. They indicated that it helps them regulate their behaviours with peers, keep their distance when necessary, and learn how to behave appropriately. The acquired knowledge helps them to avoid sexual intercourse and makes them aware of their bodies. They, therefore, consider developmental changes as normal when they occur.

“The information helps us to change behaviours, particularly on the use of social media. We avoid watching sexual activity and sending images of sexual activity and human trafficking. It teaches us how to regulate behaviours with boys and keep our distance towards them and self-respect. The knowledge helps us to avoid sexual intercourse, be aware of body changes, and abstain from sex.” (FGD 9)

“It helps me to abstain from early sexual activity, knowing my body changes and abstain from sex.” (FGD 2)

“Information gives me knowledge about what is happening to me and how to behave appropriately.” (FGD 3)

“I take wet dreams as normal because I have been informed about them.” (FGD 5)

They said they should not be surprised by the occurrence of developmental changes, and girls specifically need to know precisely when they should expect their periods to be prepared and prevent unplanned pregnancy. They also indicated that girls need to learn that they have grown and can be pregnant if they have unprotected sex and learn to be careful in their relationships with boys.

“Being informed is good and very important. Teen girls should be curious to know more about periods and their implications. She does not have to be surprised by seeing them happening and should know when to expect them and prevent unplanned pregnancies. Whether ever had periods or not, I should be careful about unprotected sex.” (FGD 5)

“When I was around 11-12, my mum told me I was growing and my body was changing. She said that I should be careful in my relationships with boys because I need to know when my period is and prevent unplanned pregnancy.” (FGD 5)

They revealed that being informed gives them more confidence and positive feelings about sexual and reproductive health because they have adequate knowledge and can prevent the consequences related to the lack of information.

“It gives more confidence and positive feeling about life when you have adequate knowledge and means for prevention compared to those who are not informed.” (FGD 2)

According to the participants, they learn to avoid unprotected sex, which may result in diseases and unplanned pregnancy, use a condom to prevent HIV and other sexually transmitted infections and get circumcised. They believe all of this is beneficial to their sexual and reproductive health.

“I received information that unprotected sex may result in diseases. My parent advised me to use a condom to prevent HIV and sexually transmitted infections. I was also asked to go for circumcision, which is beneficial for my sexual and reproductive health.” (FGD 7)

Participants also indicated that SRHR information makes them grow and allows them to advise their peers about good conduct and the consequences of inappropriate behaviours.

“The information I receive has made me an old person. It also allows us to advise peers about what we learn on not having sexual activity and teach them about the possible consequences of early sexual activity, including early pregnancy, HIV/AIDS, and other sexually transmitted infections.” (FGD 7)

9.2.2.4 Raising SRHR awareness

Participants noted that SRHR information raises their awareness related to sexual and reproductive health issues such as menstruation, pregnancy, HIV/AIDS and other sexually transmitted infections. They believe that information is to make them awake so that they start thinking like adult people.

“It helped me to be aware of HIV/AIDS and other sexually transmitted diseases and various ways of preventing them. I know that the only way to prevent them is avoiding sexual intercourse.” (FGD 5)

“Parents give us information and want us to be awake and start thinking much more like adults.” (FGD 8)

They think that information allows them to be aware of the consequences, think deeply about them and act appropriately to prevent them.

“Many girls fell pregnant during the COVID-19 lockdown, and many others got HIV/AIDS. It is important to prevent them because they have sexual intercourse without in-depth thinking. They would have avoided them if they knew and thought deeply before engaging in sexual activity.” (FGD 8)

SRHR information also contributed to participants’ knowledge of condoms, the risks associated with having sexual intercourse with an HIV/AIDS-infected person and the benefits of circumcision.

“(…) For example, we are aware of condoms; we know the risks associated with having sex with an HIV/AIDS-positive person and the benefits of circumcision. All of this allows me to improve my sexual and reproductive health.” (FGD 7)

They also noted that the information allows them to seek further information to respond to other questions about sexual and reproductive health.

“The information we obtain gives us more new knowledge and keeps us searching for much more knowledge and makes us able to respond to many questions related to sexual and reproductive health.” (FGD 9)

9.3 CONCLUSION

This study provides an overview of sexual behaviours among early adolescents and the linkage between these behaviours and their health outcomes in Rwanda. The study found that early adolescents report a lifetime use of contraceptive methods, mainly abstinence and condoms. Some participants also reported relationships with a boy/girlfriend or other partners. The study also indicated that some participants are touched unwillingly either often, sometimes or rarely on private parts, and the first sex happened mostly with a non-intimate partner and by force. These findings suggest the experience of child sexual abuse among participants. Some other participants also report paying or receiving money in exchange for sexual activity. Participants

also never discuss contraception or discuss it after first intercourse. However, the majority of participants indicated not regretting having their first intercourse.

Furthermore, some participants report pressure to have sex, mainly from their friends. Participants also plan to wait for their marriage for first sexual intercourse, and some others believe sexual intercourse might be a positive one. Testing for HIV is associated with the participants' knowledge about sexuality, contraceptive methods, and condoms, and attitudes towards gender and sexual norms. Impregnating a girl/woman was associated with knowledge about HIV/AIDS, sexuality and attitudes towards gender. These findings complement those on sexual behaviours in Chapter six, where we demonstrated that sexuality education for early adolescents does not adequately address topics related to violence and staying safe, skills for health and wellbeing, sexuality and sexual behaviour and relationships. Specific SRHR programmes for early adolescents must focus jointly on promoting healthy behaviours, enhancing existing legal frameworks on sexual and gender-based violence, preventing child abuse practices at all levels and other unhealthy behaviours, and improving their health outcomes. Community, school settings, and healthcare institutionsa and other stakeholders in Rwanda should focus on the importance of consent, mutual respect in relationships, preventing and reporting forced sexual activities and unwanted touching to existing bodies such as Isange One-Stop Centre, and seeking related help and medical treatment.

CHAPTER TEN

RELATIONSHIP BETWEEN SOURCES OF SRHR INFORMATION AND EARLY ADOLESCENTS' GENDER AND SEXUALITY KNOWLEDGE, BELIEFS AND BEHAVIOURS

10.1 INTRODUCTION

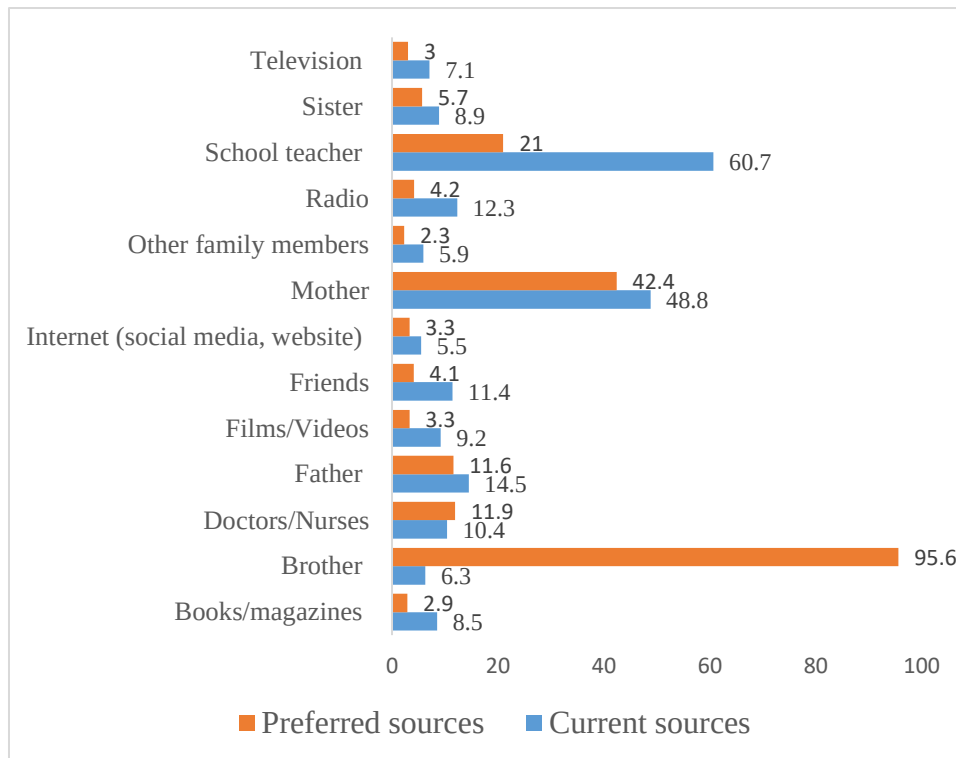
This chapter addresses the seventh study objective, which consists of determining the relationship between different sources of information and early adolescents' gender and sexuality knowledge, beliefs and behaviours. The chapter focuses on current and preferred sources of gender and sexuality information for early adolescents (quantitative data), justifications for these preferences, and the contribution of each of these sources to early adolescents' knowledge, beliefs, and behaviours (qualitative data from focus group discussions with early adolescent). Further details on research methods are provided in Chapter 3.

10.2 RESULTS

10.2.1 Current and preferred sources of information about puberty

The findings showed that early adolescents had schoolteachers (60.7%, n=732) and mothers (48.8%, n=731) as their primary sources of information on puberty. However, early adolescents indicated that brothers (95.6%, n=688) and mothers (42.4%, n=687) were preferred over other sources of information on puberty (Figure 10.1). A cross-tabulation of the sources of information on puberty indicated that compared to girls, a significantly higher proportion of boys had school teachers (32.2%), fathers (8.20%), and brothers (4.4%) as their sources of information. Similarly, more girls than boys reported mothers (32%), sisters (7.4%), and other family members (4.4%) as their sources of information on puberty (Table 10.3).

Concerning the preferred sources of puberty information, a significantly higher proportion of boys preferred schoolteachers (12%), brothers (3.6%), films/videos (2.5%), internet (2.6%), and television (2.2%) as compared to girls. Similarly, more girls than boys reported mothers (26.6%), sisters (4.9%), and other family members (1.9%) as their preferred sources of information on puberty (Table 10.1).

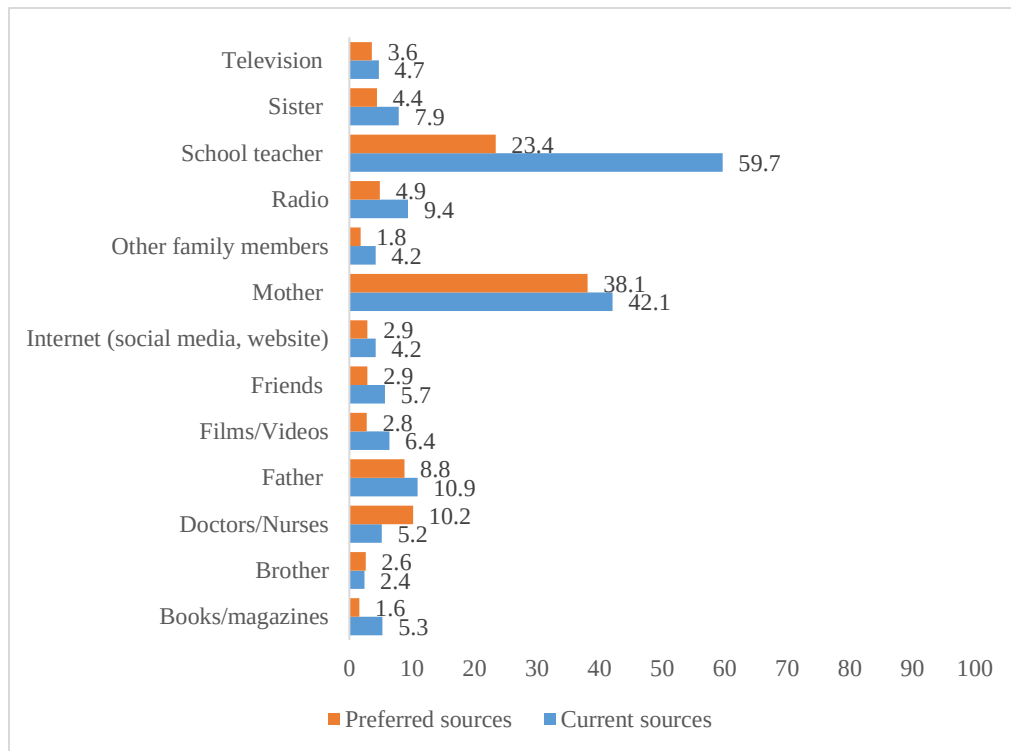


Note: multiple answers were allowed.

Figure 10. 1: Sources of information about puberty

10.2.2 Current and preferred sources of information about reproduction

Participants indicated that schoolteachers (59.7%) and their mothers (42.1%) were, respectively, the primary sources of information on reproduction. Mothers (38.1%), however, were referred to other sources of information on reproduction (Figure 10.2). The second preferred source was schoolteachers (23.4%), and doctors and nurses (10.2%) were the third preferred source.



Note: multiple answers were allowed.

Figure 10. 2: Current and preferred sources of information about reproduction

The analysis of the sources of information on reproduction by the sex of the participants showed that a significantly higher proportion of boys reported schoolteachers (32.8%) and fathers (6.4%) as their sources of information. Similarly, a higher proportion of girls indicated their mothers (29.5%) and sisters (6.5%) as their sources of information on reproduction compared to boys. Concerning the participants' preferences, 13.9% of the 144 (23.4%) participants who preferred schoolteachers were boys ($p < 0.001$), and 34 (5.52%) of 54 (8.7%) participants who preferred receiving information from the father were boys ($p = 0.011$). In addition, a higher proportion of boys preferred obtaining information on reproduction from films/videos (2.1%, $p = 0.012$) and the internet (2.7%, $p = 0.007$) as compared to girls. On the other hand, a significantly higher proportion of girls reported their mothers (24.5%, $p < 0.001$), sisters (3.4%, $p = 0.010$), and other family members (1.6%, $p = 0.012$) as their preferred sources of information on reproduction. There were no significant differences in participants' proportions based on sex (Table 10.2).

Table 10. 1: Sources of information on puberty by sex of participants

		Current sources				Preferred sources			
		Sex of respondent				Sex of respondent			
Sources		Male N(%)	Female N(%)	Total N(%)	χ^2 , p-value	Male	Female	Total	χ^2 , p-value
Schoolteachers	Yes	236 (32.24)	208 (28.42)	444 (60.66)	13.56, <0.001	83 (12.01)	62 (8.97)	145 (20.98)	5.82, 0.019
	No	113 (15.44)	175 (23.91)	288 (39.34)		251 (36.32)	295 (42.69)	546 (79.02)	
Mothers	Yes	123 (16.83)	234 (32.01)	357 (48.84)	49.39, <0.001	108 (15.72)	183 (26.64)	291 (42.36)	24.76, <0.001
	No	226 (30.92)	148 (20.25)	374 (51.16)		223 (32.46)	173 (25.18)	396 (57.64)	
Fathers	Yes	60 (8.20)	46 (6.28)	106 (14.28)	3.95, 0.047	45 (6.53)	35 (5.08)	80 (11.61)	2.36, 0.125
	No	289 (39.48)	337 (46.04)	626 (85.52)		287 (41.65)	322 (46.73)	609 (88.39)	
Brothers	Yes	32 (4.37)	14 (1.91)	46 (6.28)	9.42, 0.002	25 (3.63)	5 (0.73)	30 (4.36)	15.45, <0.001
	No	317 (43.31)	369 (50.41)	686 (93.72)		307 (44.62)	351 (51.02)	658 (95.64)	
Sisters	Yes	11 (1.50)	54 (7.38)	65 (8.88)	27.04, <0.001	5 (0.73)	34 (4.93)	39 (5.66)	20.70, <0.001
	No	338 (46.17)	329 (44.95)	667 (91.12)		327 (47.46)	323 (46.88)	650 (94.34)	
Other family members	Yes	11 (1.50)	32 (4.38)	43 (5.88)	8.99, 0.003	3 (0.44)	13 (1.89)	16 (3.33)	5.65, 0.017
	No	338 (46.24)	350 (47.88)	688 (94.12)		328 (47.67)	344 (50.00)	672 (97.67)	
Friends	Yes	34 (4.65)	49 (6.70)	83 (11.35)	1.72, 0.189	11 (1.60)	17 (2.47)	28 (4.06)	0.92, 0.336
	No	315 (43.09)	333 (45.55)	648 (88.65)		321 (46.59)	340 (49.35)	661 (95.94)	
Doctors/nurses	Yes	35 (4.75)	41 (5.60)	76 (10.38)	0.08, 0.764	38 (5.53)	44 (6.40)	82 (11.94)	0.10, 0.744
	No	314 (42.90)	342 (46.72)	656 (89.62)		292 (42.50)	313 (45.56)	605 (88.06)	
Books/magasines	Yes	31 (4.25)	31 (4.25)	62 (8.49)	0.14, 0.701	13 (1.89)	7 (1.02)	20 (2.91)	2.35, 0.125
	No	317 (43.42)	351 (48.08)	668 (91.51)		318 (46.22)	350 (50.87)	668 (97.09)	
Films//videos	Yes	39 (5.34)	28 (3.83)	67 (9.17)	3.23, (0.072)	17 (2.47)	6 (0.87)	23 (3.34)	6.34, 0.012
	No	310 (42.41)	354 (48.43)	664 (90.83)		314 (45.64)	351 (51.02)	665 (96.66)	
Internet	Yes	22 (3.01)	18 (2.46)	40 (5.47)	0.92, (0.336)	18 (2.61)	5 (0.73)	23 (3.34)	8.62, 0.003
	No	326 (44.60)	365 (49.93)	691 (94.53)		314 (45.57)	352 (51.09)	666 (96.66)	
TV	Yes	24 (3.28)	28 (3.83)	52 (7.11)	0.05, 0.812	15 (2.18)	6 (0.87)	21 (3.05)	4.68, 0.030
	No	325 (44.46)	354 (48.43)	679 (92.89)		317 (46.01)	351 (50.94)	668 (96.95)	
Radio	Yes	39 (5.34)	51 (6.99)	90 (12.33)	0.77, 0.379	13 (1.90)	16 (2.33)	29 (4.23)	0.13, 0.718
	No	309 (42.33)	331 (45.34)	640 (87.67)		317 (46.21)	340 (49.56)	657 (95.77)	

Table 10. 2: Sources of information about reproduction by sex of participants

		Current sources				Preferred sources			
		Sex of respondent				Sex of respondent			
Sources		Male N(%)	Female N(%)	Total N(%)	χ^2 , p-value	Male N(%)	Female N(%)	Total N(%)	χ^2 , p-value
Schoolteachers	Yes	217 (32.78)	178 (26.89)	395 (59.67)	24.89, <0.001	86 (13.96)	58 (9.42)	144 (23.38)	13.35, <0.001
	No	94 (14.20)	173 (26.13)	267 (40.33)		200 (32.47)	272 (44.16)	472 (76.62)	
Mother	Yes	83 (12.58)	195 (29.55)	278 (42.12)	55.50, <0.001	84 (13.64)	151 (24.51)	235 (38.15)	17.43, <0.001
	No	226 (34.24)	156 (23.64)	382 (57.88)		202 (32.79)	179 (29.06)	381 (61.85)	
Father	Yes	42 (6.35)	30 (4.54)	72 (10.89)	4.24, 0.039	34 (5.52)	20 (3.25)	54 (8.77)	6.50, 0.011
	No	268 (40.54)	321 (48.56)	589 (89.11)		252 (40.91)	310 (50.32)	562 (91.23)	
Brothers	Yes	7 (1.06)	9 (1.36)	16 (2.42)	0.06, 0.798	12 (1.96)	4 (0.65)	16 (2.61)	5.40, 0.020
	No	303 (45.84)	342 (51.74)	645 (97.58)		272 (44.44)	324 (52.94)	596 (97.39)	
Sisters	Yes	9 (1.36)	43 (6.51)	52 (7.87)	19.84, <0.001	6 (0.97)	21 (3.41)	27 (4.38)	6.65, 0.010
	No	301 (45.54)	308 (46.60)	609 (92.13)		280 (45.45)	309 (50.16)	589 (95.62)	
Other family members	Yes	9 (1.36)	19 (2.88)	28 (4.24)	2.52, 0.112	1 (0.16)	10 (1.62)	11 (1.79)	6.27, 0.012
	No	300 (45.45)	332 (50.30)	632 (95.76)		285 (46.27)	320 (51.95)	605	
Friends	Yes	16 (2.42)	22 (3.33)	38 (5.75)	0.37, 0.542	6 (0.98)	12 (1.95)	18 (2.93)	1.29, 0.256
	No	294 (44.48)	329 (49.77)	623 (94.25)		280 (45.53)	317 (51.54)	597 (97.07)	
Doctors/nurses	Yes	17 (2.58)	17 (2.58)	34 (5.16)	0.13, 0.709	33 (5.35)	30 (4.86)	63 (10.21)	0.97, 0.325
	No	292 (44.31)	333 (50.53)	625 (94.84)		254 (41.17)	300 (48.62)	554 (89.79)	
Books/magasines	Yes	15 (2.27)	20 (3.03)	35 (5.30)	0.24, 0.622	6 (0.97)	4 (0.65)	10 (1.62)	0.74, 0.389
	No	295 (44.63)	331 (50.08)	626 (94.70)		281 (45.54)	326 (52.84)	607 (98.38)	
Films//videos	Yes	23 (3.48)	19 (2.88)	42 (6.36)	1.09, 0.296	13 (2.11)	4 (0.65)	17 (2.76)	6.27, 0.012
	No	287 (43.48)	331 (50.15)	618 (93.64)		274 (44.48)	325 (52.76)	599 (97.24)	
Internet	Yes	16 (2.42)	12 (1.82)	28 (4.24)	1.21, 0.270	14 (2.27)	4 (0.65)	18 (2.92)	7.32, 0.007
	No	294 (44.55)	338 (51.21)	632 (95.76)		272 (44.16)	326 (52.92)	598 (97.08)	
TV	Yes	17 (2.58)	14 (2.12)	31 (4.70)	0.84, 0.359	14 (2.27)	8 (1.30)	22 (3.57)	2.66, 0.103
	No	292 (44.24)	337 (51.06)	629 (95.30)		273 (44.32)	321 (52.11)	594 (96.43)	
Radio	Yes	26 (3.93)	36 (5.45)	62 (9.38)	0.67, 0.411	14 (2.27)	16 (2.60)	30 (4.87)	0.0007, 0.979
	No	284 (42.97)	315 (47.66)	599 (90.62)		272 (44.16)	314 (50.97)	586 (95.13)	

10.2.3 Relationships between SRH Sources of information and early adolescents' SRHR knowledge and beliefs

10.2.3.1 Sources of information about puberty and SRHR knowledge and attitudes

This section describes the results of the study on the linkage between the sources of SRHR information and the participants' SRHR knowledge and beliefs about gender and sexuality.

Concerning the participants' knowledge about sexuality, only those who reported their mothers as the source of information about puberty had a significantly higher mean (3.05 ± 1.3), $p < 0.001$. There was no association between participants' scores on their knowledge about sexuality and the remaining sources of information on puberty (Table 10.3).

Table 10. 3: Sources of information about puberty and sexuality knowledge

Sources of information	Sexuality knowledge scores (0-6)						
	Total		Yes		No		p
	n	Mean±SD	n	Mean±SD	n	Mean±SD	
Schoolteachers	669	2.87 (1.31)	418	2.80 (1.31)	251	2.98 (1.30)	0.087
Mother	668	2.87 (1.31)	321	3.05 (1.28)	347	2.71 (1.32)	<0.001
Father	669	2.87 (1.31)	99	3.03 (1.26)	570	2.84 (1.32)	0.206
Brothers	669	2.87 (1.31)	44	2.68 (1.25)	625	2.88 (1.32)	0.311
Sisters	669	2.87 (1.31)	61	2.85 (1.31)	608	2.87 (1.31)	0.883
Other family members	668	2.87 (1.31)	43	2.79 (1.38)	625	2.88 (1.31)	0.661
Friends	668	2.88 (1.31)	78	2.82 (1.31)	590	2.88 (1.31)	0.669
Doctors/Nurses	669	2.87 (1.31)	71	3.15 (1.29)	598	2.84 (1.31)	0.058
Books/magazines	667	2.87 (1.31)	59	3.05 (1.20)	608	2.85 (1.32)	0.284
Films	668	2.87 (1.31)	63	2.85 (1.28)	605	2.87 (1.32)	0.906
Internet	668	2.87 (1.31)	38	2.89 (1.20)	630	2.87 (1.32)	0.927
TV	668	2.87 (1.31)	51	3.05 (1.28)	617	2.86 (1.31)	0.301
Radio	667	2.87 (1.31)	88	2.87 (1.31)	579	2.87 (1.31)	0.978

Concerning the knowledge of contraceptive methods by sources of information about puberty, participants who indicated doctors and/or nurses as their sources of information on puberty scored significantly higher (mean: 5.6 ± 2.26) as compared to others (mean: 4.90 ± 2.08), $p = 0.027$. Surprisingly, participants who did not report their fathers as the sources of information on puberty

scored higher on the knowledge of contraceptive methods (mean: 5.06 ± 2.05) than those who did (mean: 4.45 ± 2.36), $p=0.021$. Concerning other sources of information on puberty, there were no significant differences in participants' scores on the knowledge of contraceptive methods (Table 10.4)

Table 10. 4: Sources of information about puberty and contraceptive knowledge

	Contraceptive knowledge scores (0-12)						
Sources	Total		Yes		No		p
	n	Mean (SD)	n	Mean (SD)	n	Mean (SD)	
Schoolteachers	505	4.97 (2.11)	319	4.89 (2.23)	186	5.10 (1.89)	0.287
Mother	504	4.98 (2.11)	247	5.02 (2.19)	257	4.94 (2.03)	0.677
Father	505	4.97 (2.11)	73	4.45 (2.36)	432	5.06 (2.05)	0.021
Brothers	505	4.97 (2.11)	35	4.82 (2.21)	470	4.98 (2.10)	0.668
Sisters	505	4.97 (2.11)	46	4.56 (2.21)	459	5.01 (2.10)	0.167
Other family members	504	4.97 (2.11)	32	4.71 (2.73)	472	4.99 (2.06)	0.474
Friends	505	4.97 (2.11)	50	4.9 (2.50)	455	4.98 (2.07)	0.788
Doctors/Nurses	505	4.97 (2.11)	50	5.6 (2.26)	455	4.90 (2.08)	0.027
Books/magazines	503	4.97 (2.11)	36	4.72 (2.71)	467	4.99 (2.06)	0.452
Films	504	4.97 (2.11)	41	5.12 (2.62)	463	4.96 (2.06)	0.650
Internet	504	4.97 (2.11)	27	5.00 (2.54)	477	4.97 (2.09)	0.952
TV	504	4.97 (2.11)	33	4.90 (2.55)	471	4.98 (2.08)	0.846
Radio	503	4.97 (2.11)	57	5.24 (2.67)	446	4.93 (2.03)	0.304

Concerning the participants' knowledge about condoms, except for schoolteachers (Mean: 7.32 ± 2.49), higher scores on the knowledge about condoms were obtained by participants who indicated that the remaining sources were not their sources of information on puberty. Specifically, significantly higher scores were recorded for the participants who did not indicate that mother (mean: 7.43 ± 2.52), sisters (mean: 7.26 ± 2.51), other family members (mean: 7.25 ± 2.50), and internet (mean: 7.25 ± 2.47) as their sources of information on puberty. Other participants' scores on knowledge about condoms were not statistically different compared to their information sources on puberty (Table 10.5).

Table 10. 5: Sources of information about puberty and condom knowledge

Sources	Condom knowledge scores (0-14)						
	Total		Yes		No		p
	n	Mean±SD	n	Mean±SD	n	Mean±SD	
Schoolteachers	545	7.19 (2.52)	341	7.32 (2.49)	204	6.97 (2.55)	0.117
Mother	544	7.19 (2.52)	264	6.93 (2.50)	280	7.43 (2.52)	0.022
Father	545	7.19 (2.52)	80	6.72 (2.48)	465	7.27 (2.52)	0.071
Brothers	545	7.19 (2.52)	39	6.76 (2.60)	506	7.22 (2.51)	0.275
Sisters	545	7.19 (2.52)	46	6.39 (2.51)	499	7.26 (2.51)	0.024
Other family members	544	7.18 (2.52)	36	6.30 (2.68)	508	7.25 (2.50)	0.029
Friends	544	7.20 (2.50)	68	6.72 (2.52)	476	7.27 (2.50)	0.086
Doctors/Nurses	545	7.19 (2.52)	56	6.85 (2.26)	489	7.23 (2.55)	0.291
Books/magazines	543	7.19 (2.52)	47	7.12 (2.65)	496	7.19 (2.51)	0.856
Films	544	7.19 (2.52)	49	6.95 (2.79)	495	7.22 (2.49)	0.490
Internet	545	7.19 (2.52)	32	6.18 (3.11)	513	7.25 (2.47)	0.019
TV	544	7.18 (2.52)	41	6.95 (2.73)	503	7.20 (2.50)	0.530
Radio	543	7.18 (2.52)	71	6.87 (2.56)	472	7.23 (2.51)	0.260

The findings on the association between the sources of information about puberty and the knowledge about HIV/AIDS and other STDs indicate that except for father and brother, participants with other sources of information had higher scores compared to those who did not indicate these sources. Significantly higher scores were obtained for the following sources of information: sisters (mean: 9.05±2.01, p=0.010), other family members (mean±2.13, p=0.032), friends (mean: 8.90±2.33, p=0.021), books/magazines (mean: 9.35±2.10, p<0.001), television (mean:8.95±1.99, p=0.047). and radio (mean:9.25±1.98, p<0.001). There were no significant differences in participants' scores as per their sources of information on puberty (Table 10.6).

Table 10. 6: Sources of information about puberty and HIV/AIDS & STDs knowledge (0-13)

	HIV/AIDS & STDs knowledge scores (0-13)						
Sources	Total		Yes		No		p
	n	Mean (SD)	n	Mean (SD)	n	Mean (SD)	
Schoolteachers	566	8.37 (2.09)	369	8.45 (2.11)	197	8.21 (2.03)	0.184
Mother	566	8.36 (2.08)	268	8.47 (2.06)	298	8.27 (2.10)	0.267
Father	566	8.37 (2.09)	83	8.18 (2.18)	483	8.40 (2.07)	0.365
Brothers	566	8.37 (2.09)	39	8.35 (2.50)	527	8.37 (2.05)	0.965
Sisters	566	8.37 (2.09)	56	9.05 (2.01)	510	8.29 (2.08)	0.010
Other family members	565	8.36 (2.09)	37	9.08 (2.13)	528	8.32 (2.08)	0.032
Friends	566	8.37 (2.09)	72	8.90 (2.33)	494	8.29 (2.04)	0.021
Doctors/Nurses	566	8.37 (2.09)	62	8.83 (2.10)	504	8.31 (2.08)	0.062
Books/magazines	565	8.36 (2.09)	56	9.35 (2.10)	509	8.26 (2.06)	<0.001
Films	565	8.36 (2.08)	55	8.49 (2.37)	510	8.35 (2.05)	0.641
Internet	566	8.37 (1.91)	37	8.81 (1.91)	529	8.34 (2.10)	0.187
TV	565	8.36 (2.09)	46	8.95 (1.99)	519	8.31 (2.09)	0.047
Radio	565	8.36 (2.09)	75	9.25 (1.98)	490	8.23 (2.07)	<0.001

Participants' gender attitudes scores were significantly higher for those who reported schoolteachers (29.65 ± 4.13) as their sources of information on puberty compared to those who did not (28.43 ± 4.52), $p < 0.001$. In addition, those who had books/magazines as their sources of information had significantly higher scores (30.32 ± 3.55) than those who did not (29.09 ± 4.37), $p = 0.037$. Results for other sources are not statistically different, as reflected in Table 10.7.

Table 10. 7: Sources of information about puberty and gender attitude score (10-40)

	Gender attitude score (10-40)						
Sources	Total		Yes		No		p
	n	Mean (SD)	n	Mean (SD)	n	Mean (SD)	
Schoolteachers	651	29.19 (4.32)	407	29.65 (4.13)	244	28.43 (4.52)	<0.001
Mother	650	29.19 (4.31)	312	29.05 (4.20)	338	29.32 (4.42)	0.424
Father	651	29.19 (4.32)	93	29.23 (3.82)	558	29.18 (4.40)	0.923
Brothers	651	29.19 (4.32)	42	30.23 (3.45)	609	29.12 (4.36)	0.106
Sisters	651	29.19 (4.32)	62	29.27 (3.79)	589	29.18 (4.37)	0.882
Other family members	650	29.19 (4.32)	39	29.79 (3.65)	611	29.15 (4.36)	0.373
Friends	650	29.20 (4.31)	78	29.50 (4.01)	572	29.16 (4.35)	0.524
Doctors/Nurses	651	29.19 (4.32)	69	29.69 (3.79)	582	29.13 (4.37)	0.310
Books/magazines	649	29.20 (4.32)	58	30.32 (3.55)	591	29.09 (4.37)	0.037
Films	650	29.19 (4.32)	61	29.09 (4.02)	589	29.20 (4.35)	0.851
Internet	650	29.19 (4.32)	39	30.30 (4.06)	611	29.12 (4.33)	0.098
TV	650	29.19 (4.32)	47	29.53 (3.65)	603	29.17 (4.37)	0.581
Radio	649	29.18 (4.31)	82	29.35 (4.07)	567	29.16 (4.35)	0.705

The participant's scores on sexual norms attitudes show that participants who reported schoolteachers as their sources of information on puberty had significantly higher scores (24.84 ± 4.61) than those who did not (23.69 ± 4.86), $p=0.003$. Other scores were not statistically different for the remaining sources (Table 10.8).

Table 10. 8: Sources of information about puberty and sexual norms attitudes (9-36)

	Sexual norms attitude score (9-36)						
Sources	Total		Yes		No		p
	n	Mean (SD)	n	Mean (SD)	n	Mean (SD)	
Schoolteachers	644	24.42 (4.73)	409	24.84 (4.61)	235	23.69 (4.86)	0.003
Mother	644	24.41 (4.72)	309	24.10 (4.45)	335	24.69 (4.96)	0.114
Father	644	24.42 (4.26)	94	23.88 (4.26)	550	24.51 (4.81)	0.232
Brothers	644	24.42 (4.73)	39	24.00 (3.70)	605	24.44 (4.79)	0.566
Sisters	644	24.42 (4.73)	60	23.56 (4.28)	584	24.51 (4.77)	0.142
Other family members	643	24.42 (4.74)	39	24.00 (4.07)	604	24.45 (4.78)	0.565
Friends	643	24.43 (4.72)	76	23.76 (4.28)	567	24.52 (4.78)	0.186
Doctors/Nurses	644	24.42 (4.73)	68	23.86 (4.91)	576	24.48 (4.71)	0.307

Books/magazines	642	24.42 (4.74)	57	24.47 (4.42)	585	24.42 (4.77)	0.941
Films	643	24.41 (4.74)	60	25.10 (4.57)	583	24.34 (4.75)	0.243
Internet	643	24.41 (4.74)	38	24.52 (4.94)	605	24.41 (4.73)	0.886
TV	643	24.42 (4.74)	48	24.33 (3.89)	595	24.43 (4.80)	0.891
Radio	643	24.42 (4.74)	85	24.07 (4.63)	558	24.47 (4.76)	0.462

10.2.3.2 Sources of information about reproduction and SRHR knowledge and attitudes

The findings indicate that participants who indicated mothers (mean: 3.11±1.26) and radio (mean = 3.29±1.14) as their sources of information on reproduction scored higher on the knowledge about sexuality compared to other participants who did not. On the other hand, the findings indicate that participants who reported schoolteachers (mean: 2.83±1.29) and other family members (mean:2.34±1.29) as their sources of information about reproduction scored significantly lower compared to those who did not. The remaining participants' scores were not statistically different (Table 10.9).

Table 10. 9: Sources information on reproduction and sexuality knowledge

	Sexuality knowledge scores (0-6)						
Sources of information	Total		Yes		No		p
	n	Mean (SD)	n	Mean (SD)	n	Mean (SD)	
Schoolteachers	608	2.91 (1.29)	374	2.83 (1.29)	234	3.05 (1.28)	0.047
Mother	606	2.91 (1.29)	245	3.11 (1.26)	361	2.77 (1.29)	0.001
Father	607	2.91 (1.29)	65	3.13 (1.35)	542	2.89 (1.28)	0.149
Brothers	607	2.91 (1.29)	16	2.93 (1.65)	591	2.91 (1.28)	0.954
Sisters	607	2.91 (1.29)	50	2.78 (1.13)	557	2.93 (1.31)	0.428
Other family members	606	2.91 (1.29)	26	2.34 (1.19)	580	2.94 (1.29)	0.021
Friends	607	2.91 (1.29)	36	2.80 (1.26)	571	2.92 (1.29)	0.587
Doctors/Nurses	605	2.92 (1.29)	31	3.29 (1.32)	574	2.90 (1.29)	0.103
Books/magazines	607	2.91 (1.29)	33	3.27 (1.17)	574	2.89 (1.30)	0.107
Films	606	2.92 (1.29)	38	2.84 (1.10)	568	2.92 (1.30)	0.693
Internet	606	2.91 (1.29)	27	2.88 (1.28)	579	2.91 (1.29)	0.906
TV	606	2.92 (1.29)	29	3.20 (1.29)	577	2.90 (1.29)	0.227
Radio	607	2.91 (1.29)	61	3.29 (1.14)	546	2.87 (1.30)	0.016

The participants' knowledge of contraceptive methods varied significantly for those who reported the internet (mean:6.00±2.67), TV (mean:5.90±3.09), and radio (mean:5.53±2.60) as their sources of information on reproduction compared to those who did not. Participants' scores on their knowledge of contraceptive methods were not statistically different for the remaining sources of information (Table 10.10).

Table 10. 10: Sources information on reproduction and knowledge of contraceptive methods

	Knowledge of contraceptive methods (0-12)						
Sources of information	Total		Yes		No		p
	n	Mean (SD)	n	Mean (SD)	n	Mean (SD)	
Schoolteachers	469	4.92 (2.13)	286	4.91 (2.22)	183	4.93 (2.00)	0.941
Mother	468	4.92 (2.14)	196	4.74 (2.05)	272	5.05 (2.19)	0.126
Father	469	4.92 (2.13)	53	4.52 (2.23)	416	4.97 (2.12)	0.151
Brothers	469	4.92 (2.13)	14	4.85 (2.90)	455	4.92 (2.11)	0.903
Sisters	469	4.92 (2.13)	43	4.62 (2.20)	426	4.95 (2.13)	0.339
Other family members	468	4.92 (2.14)	22	4.68 (2.66)	446	4.93 (2.11)	0.585
Friends	469	4.92 (2.13)	29	5.51 (2.39)	440	4.88 (2.11)	0.124
Doctors/Nurses	468	4.92 (2.14)	21	4.90 (2.38)	447	4.92 (2.13)	0.960
Books/magazines	469	4.92 (2.13)	21	4.57 (2.74)	448	4.94 (2.10)	0.438
Films	468	4.92 (2.13)	27	5.29 (2.64)	441	4.89 (2.10)	0.348
Internet	468	4.92 (2.14)	20	6.00 (2.67)	448	4.87 (2.10)	0.021
TV	469	4.92 (2.13)	20	5.90 (3.09)	449	4.88 (2.08)	0.037
Radio	469	4.92 (2.13)	45	5.53 (2.60)	424	4.86 (2.07)	0.044

The participant's knowledge about condoms was significantly lower for the participants who reported father (6.22±2.73 versus 7.31±2.43), brother (5.84±2.47 versus 7.22±2.48), and other family members (5.78±2.59 versus 7.25±2.47) as their sources of information on reproduction as compared to the participants who did not. The participant's knowledge about condoms was not different from the remaining sources of information on reproduction (Table 10.11).

Table 10. 11: Participants' knowledge about condoms by sources of information on reproduction

	Knowledge about condoms (0-14)						
Sources of information	Total		Yes		No		p
	n	Mean (SD)	n	Mean (SD)	n	Mean (SD)	
Schoolteachers	487	7.18 (2.49)	307	7.14 (2.49)	180	7.26 (2.49)	0.625
Mother	485	7.19 (2.49)	196	7.05 (2.54)	289	7.29 (2.46)	0.300
Father	486	7.19 (2.49)	57	6.22 (2.73)	429	7.31 (2.43)	0.002
Brothers	486	7.19 (2.49)	13	5.84 (2.47)	473	7.22 (2.48)	0.048
Sisters	486	7.19 (2.49)	34	6.44 (2.46)	452	7.24 (2.49)	0.069
Other family members	485	7.18 (2.49)	23	5.78 (2.59)	462	7.25 (2.47)	0.005
Friends	486	7.19 (2.49)	29	6.51 (2.62)	457	7.23 (2.48)	0.133
Doctors/Nurses	484	7.19 (2.49)	24	7.08 (2.37)	460	7.19 (2.50)	0.830
Books/magazines	486	7.19 (2.49)	29	7.20 (2.48)	457	7.19 (2.49)	0.972
Films	485	7.18 (2.49)	29	7.20 (2.28)	456	7.18 (2.51)	0.965
Internet	486	7.19 (2.49)	20	7.10 (2.82)	466	7.19 (2.48)	0.867
TV	485	7.18 (2.49)	25	7.36 (2.56)	460	7.18 (2.49)	0.726
Radio	486	7.19 (2.49)	50	7.10 (2.58)	436	7.20 (2.48)	0.784

The participant's knowledge about HIV/AIDS & STDs was reported to be significantly higher for those who reported friends (9.32 ± 2.32 versus 8.31 ± 2.10), books/magazines (9.93 ± 1.52 versus 8.27 ± 2.12), internet (9.30 ± 1.74 versus 8.32 ± 2.13), TV (9.40 ± 1.55 versus 8.32 ± 2.13) and radio (9.54 ± 1.75 versus 8.22 ± 2.12) as their sources of information on reproduction than those who did not. However, the participants' knowledge about HIV/AIDS and STDs was not statistically different from the remaining sources of information on reproduction, as reflected in Table 7.12.

Table 10. 12: HIV/AIDS and STDs knowledge by the sources of information on reproduction

	HIV/AIDS and STDs knowledge scores						
Sources of information	Total		Yes		No		p
	n	Mean (SD)	n	Mean (SD)	n	Mean (SD)	
Schoolteachers	519	8.36 (2.12)	324	8.32 (2.16)	195	8.44 (2.06)	0.526
Mother	517	8.36 (2.12)	213	8.55 (2.01)	304	8.23 (2.19)	0.091

Father	518	8.37 (2.12)	56	8.66 (2.32)	462	8.33 (2.10)	0.280
Brothers	518	8.37 (2.12)	14	9.21 (3.26)	504	8.34 (2.08)	0.132
Sisters	518	8.37 (2.12)	46	8.91 (2.20)	472	8.31 (2.11)	0.070
Other family members	518	8.37 (2.12)	22	9.13 (2.18)	496	8.33 (2.12)	0.084
Friends	518	8.37 (2.12)	28	9.32 (2.32)	490	8.31 (2.10)	0.014
Doctors/Nurses	517	8.36 (2.12)	26	8.92 (2.46)	491	8.34 (2.10)	0.174
Books/magazines	518	8.37 (2.12)	30	9.93 (1.52)	488	8.27 (2.12)	<0.001
Films	517	8.36 (2.12)	33	8.81 (2.09)	484	8.33 (2.12)	0.206
Internet	517	8.36 (2.12)	23	9.30 (1.74)	494	8.32 (2.13)	0.031
TV	517	8.37 (2.12)	25	9.40 (1.55)	492	8.32 (2.13)	0.013
Radio	518	8.37 (2.12)	57	9.54 (1.75)	461	8.22 (2.12)	<0.001

As indicated in Table 10.13, the participants' gender attitudes did not vary significantly regarding various sources of information about reproduction.

Table 10. 13: Attitude towards gender by the sources of information on reproduction

	Gender attitude scores (10-40)						
Sources of information	Total		Yes		No		p
	n	Mean (SD)	n	Mean (SD)	n	Mean (SD)	
Schoolteachers	586	29.31 (4.19)	355	29.52 (4.23)	231	29.00 (4.11)	0.142
Mother	584	29.32 (4.18)	240	29.46 (4.11)	344	29.23 (4.24)	0.514
Father	585	29.33 (4.18)	63	29.63 (4.13)	522	29.29 (4.19)	0.543
Brothers	585	29.33 (4.18)	15	30.13 (3.24)	570	29.31 (4.20)	0.452
Sisters	585	29.33 (4.18)	44	28.65 (4.02)	541	29.38 (4.19)	0.268
Other family members	584	29.32 (4.18)	25	30.00 (3.89)	559	29.29 (4.19)	0.407
Friends	585	29.33 (4.18)	33	29.72 (3.84)	552	29.30 (4.20)	0.576
Doctors/Nurses	583	29.32 (4.18)	31	29.58 (4.08)	552	29.31 (4.19)	0.730
Books/magazines	585	29.33 (4.18)	32	30.65 (3.43)	553	29.25 (4.21)	0.065

Films	585	29.33 (4.18)	38	29.78 (3.67)	547	29.29 (4.21)	0.486
Internet	584	29.32 (4.18)	26	30.65 (3.73)	558	29.26 (4.19)	0.097
TV	584	29.33 (4.18)	28	29.78 (3.67)	556	29.31 (4.21)	0.559
Radio	585	29.33 (4.18)	56	29.60 (3.54)	529	29.30 (4.24)	0.604

The participants' scores on attitudes towards sexual norms were not statistically different for various sources of information about reproduction, as indicated in Table 10.14.

Table 10. 14: Sexual norms and attitudes by the sources of information on reproduction

	Attitudes towards sexual norms scores (9-36)						
Sources of information	Total		Yes		No		p
	n	Mean (SD)	n	Mean (SD)	n	Mean (SD)	
Schoolteachers	588	24.55 (4.69)	359	24.71 (4.69)	229	24.31 (4.67)	0.315
Mother	586	24.55 (4.69)	246	24.48 (4.44)	340	24.61 (4.88)	0.745
Father	587	24.55 (4.69)	64	24.09 (4.61)	523	24.61 (4.70)	0.405
Brothers	587	24.55 (4.69)	16	24.56 (4.28)	571	24.55 (4.70)	0.995
Sisters	587	24.55 (4.69)	47	23.82 (4.32)	540	24.61 (4.72)	0.269
Other family members	586	24.54 (4.69)	26	23.57 (4.33)	560	24.58 (4.70)	0.282
Friends	587	24.55 (4.69)	35	23.91 (3.74)	552	24.59 (4.74)	0.405
Doctors/Nurses	586	24.55 (4.69)	30	24.43 (4.96)	556	24.56 (4.68)	0.884
Books/magazines	587	24.55 (4.69)	32	25.56 (3.95)	555	24.49 (4.73)	0.212
Films	586	24.56 (4.69)	39	25.89 (3.99)	547	24.46 (4.72)	0.066
Internet	586	24.55 (4.69)	26	26.30 (4.53)	560	24.46 (4.69)	0.051
TV	586	24.55 (4.69)	31	25.64 (4.46)	555	24.49 (4.70)	0.185
Radio	587	24.55 (4.69)	59	24.86 (4.27)	528	24.52 (4.74)	0.594

10.2.4 Justifications for early adolescents' preferred sources of sexual and reproductive health information

This section provides an overview of the justifications for early adolescents' preferred sources of sexual and reproductive health information. The findings indicate that early adolescents prefer a variety of sources for different reasons.

10.2.4.1 Parents

The findings indicate that participants prefer their parents to offer them all information related to sexual and reproductive health and rights. They indicate that information from parents is reliable and truthful compared to other sources of information, which may misinform them. They believe they should reduce the risks of misinformation by seeking information from their parents.

“Information from peers is questionable, not reliable, and not true. However, information from parents is reliable and incontestable.” (FGD 4)

“Sometimes internet and social media provide incorrect information. Other people can lie to us, but our parents cannot lie to us.” (FGD 1)

“Other people can lie to us, but parents cannot. It is better to rely on parents rather than the internet or peers because they can disseminate wrong information that may negatively affect our health, such as early sexual activity, early pregnancy with a high risk of death and sexually transmitted diseases.” (FGD 12)

Participants also indicated that their parents know them well and can advise them adequately based on their children's behaviours. Furthermore, participants believe they can benefit from their parents' childhood experiences.

“I would prefer being informed by parents because they know me and can advise me according to how they know me. They are advisors on our good and bad behaviours.” (FGD 2)

“I would prefer parents because they have once been children like me and have had the experience of childhood.” (FGD 3)

Participants highlighted that either parent can provide them with information, specifically for those children who do not live with their parents of the same sex.

“I can ask for information from either parent. Girls who do not live with their mums can ask their dads anything related to menstruation and request hygienic pads. It is necessary to ask him for assistance. Of course, seeking information from a parent of the opposite sex is not comfortable, but it is sometimes necessary.” (FGD 6)

Nevertheless, participants indicated their preferences for their mothers as the sources of information on sexual and reproductive health and rights.

10.2.4.2 Mothers as the commonly preferred source of information.

Participants indicated various reasons for preferring their mothers to other sources of sexual and reproductive health information. These reasons include closeness, comfortability, commonalities (experience and characteristics), availability (time spent with them), truth, and completeness of the information.

Closeness and comfortability: Concerning closeness, participants indicated they prefer receiving information from their mothers because they feel very close and comfortable with them compared to their fathers. They feel more comfortable with their mother than with any other source of information. In addition, participants believe that their mothers are kind, treat their children with kindness and cannot do anything wrong to their children.

“I would prefer my mum because I am very close to her and she is always ready to give me information. She understands me better than my dad. I can tell and ask her everything about my life.” (FGD 2)

“We feel very close to our mums and fear our dads to whom we cannot tell everything.” (FGD 6)

“She [mum] is very kind to me and can tell you well with kindness.” (FGD 8)

“Our mum cannot do anything bad to us.” (FGD 9)

Furthermore, participants indicated they feel little or no shame in communicating with their mothers compared to their fathers.

“It is shameful to ask my dad. My mum cannot laugh at me because she knows I can benefit from the information she gives me.” (FGD 10)

Completeness of information: Participants noted that their mothers could provide a complete package of information on sexual and reproductive health and respond to all questions asked by their children.

“She [my mum] is the one who can give us a complete package of information we need, given their life experience.” (FGD 2)

“She tells me everything I ask her.” (FGD 5)

Lived experience: They indicated their mothers' experience could be examples of appropriate behaviours during menstruation and that no one else can advise them better than their mothers.

“I ask my mum because she lived that experience and knows how to explain it better. My mum is the one who can assist me during menstruation and can advise on how to behave, but the dad does not experience this event and cannot explain it well to me.” (FGD 2)

“My mum has passed through this developmental stage. Therefore, she has to tell me much more about it. That is why I prefer her.” (FGD 8)

Participants note that this experience of their mothers gives them a more understanding of their children than others. They believe mothers' experiences can be used to shape their own lives.

“She is old, a woman who can understand me more than others and has lived my age before becoming an adult person.” (FGD 2)

“My mum may have come across people who wanted to tempt her. She can warn us about her experience to prevent such temptations.” (FGD 11)

Mothers are truthful: Participants highlighted that mothers are truthful as reasons for their preference. They believe mums cannot lie to their children and wish them well in the future. They added that information from their mother is reliable compared to other sources and that they were very aware that their mothers think they deserve good things, not bad ones. Participants reported that they trust their mothers and that the information delivered satisfies their children.

“Mums cannot lie anything to us, but friends can indulge us in unprotected sex.” (FGD 4)

“My mum carried me in her womb and wishes me a brighter future.” (FGD 11)

“I would prefer obtaining information from my mum because she tells me the truth about sexual and reproductive health. Other people can lie to me, but my mum cannot because she is my mother.” (FGD 7)

“Mum wishes you well-being and a good future. She is the one whom to ask everything.” (FGD 10)

“Mum is the one who gives me reliable information. Other people can give me wrong and unreliable information. They know the good thing we deserve and the bad thing that should not happen to us.” (FGD 12)

“We trust our mums, and we cannot lose hope in them. Our mum educates us and cannot wish that bad things happen to their children.” (FGD 13)

“My mum gives me substantive information that satisfies me. I trust her; she is my mother and cannot lie to me” (FGD 12)

Availability: Participants indicated that they prefer their mothers because they are available at home and spend much more time with their children than their fathers, who care for them and respond to their daily needs.

“Dads are rarely available, but we mums are always available at home, and they ask us how we feel every day.” (FGD 6)

“I am very close to my mum, and she is the one near me. I do not communicate with dad most often because he is not available to me. He comes home late in the evening and leaves early in the morning.” (FGD 9)

“We ask our mums because they are always available at home, care for us and respond to all our needs.” (FGD 10)

Keeping secrets: participants indicated that they keep secrets of their children and cannot reveal them to others.

“Mums keep our secrets of life and cannot reveal them to other people.” (FGD 6)

Similar biological characteristics: female participants noted that they have some biological characteristics in common that allow them to prefer their mothers to their fathers. The findings show that girls prefer communicating with their mothers because of their experience of girlhood.

“I have the same sex as my mum, and she has gone through this stage; she knows all the changes happening to girls. That is why I prefer asking my mum. I am very comfortable with her, and she is the one I trust.” (FGD 10)

“We have common characteristics of a girl. I cannot ask my brother about how to put on pads because he is a boy.” (FGD 2)

On the other hand, some boys prefer seeking information from their fathers because of their experience of boyhood on wet dreams during puberty and other life events such as coerced sex and its consequences.

“I would ask my dad because he experienced a similar life and had wet dreams during his puberty. He can tell me better that it will happen to me too, that I should take it as normal, and that I have grown up.” (FGD 3)

“I would first rely on information from my parents, my dad because he had a similar experience of a boy.” (FGD 5)

“I would prefer my dad because he can share his experience with me. For example, he can advise me on preventing coerced sex and its consequences.” (FGD 11)

Generally, girls prefer asking for sexual and reproductive health information from their mothers, while boys prefer talking to their fathers because of the similarity of their biological sex. For example, participants highlighted that experiences to be shared between girls and their mothers can be related to the prevention of early pregnancy and the management of menstruation. On the other hand, participants indicated that boys need their fathers’ experience of not impregnating girls.

“Girls feel they can talk to their mums while boys prefer talking to their dads. The reason is that their sex is the same as their parents, and therefore, people of the same sex can share their common experience. For example, mums need to teach girls how to avoid pregnancy and manage menstruation while dads should teach boys about not impregnating girls.” (FGD 6)

10.2.4.3 Schoolteachers

Participants indicated that they consider schoolteachers to be their parents and, therefore, they prefer receiving information from them.

“I prefer receiving information from parents and schoolteachers. I do what my mum tells me easily because I consider it true, correct and beneficial. Schoolteachers tell us things that promote our health like do our parents. All of them tell us the truth and we consider them as our parents”. (FGD 4)

Another reason for preferring the schoolteachers is that they take participants to a higher level of understanding, and participants respect their advice.

“What we learn from schoolteachers takes us to another step, and we respect their advice.” (FGD 4)

In addition, participants believe the school setting is the most appropriate venue to learn about sexual and reproductive health because all the information is there, and they have enough time to learn with their close friends and in groups (clubs). The school setting offers opportunities for discussion between teachers and students.

“The school is where most information is available. It is the most appropriate venue to learn about sexual and reproductive health compared to the home setting. Teachers take their time to teach, but many tasks in our families cannot allow you much time.” (FGD 6)

“We are with our close friends in schools. We can learn in groups of girls where everyone feels free to discuss with others.” (FGD 6)

“I like receiving information from school because it allows more discussion between teachers and students.” (FGD 7)

Participants believe that children who do not have opportunities to obtain information from their parents and relatives may prefer learning in groups (clubs). They also noted that groups allow children to discuss openly important issues such as reproductive health. They also believe that every group member can learn something from the group discussion.

“Children who do not access information from their parents and siblings can obtain information from their colleagues in these clubs. Clubs provide an opportunity for many people to discuss openly important issues.” (FGD 7)

“Groups are good because every member can learn something from it.” (FGD 3)

Furthermore, participants prefer schoolteachers because they have been trained to deliver information on sexual and reproductive health and can explain it better. In addition, participants believe that schoolteachers have adequate resources such as books, have lived through childhood and know how it goes. Schoolteachers have adequate knowledge and expertise and, therefore, offer all kinds of information without being shy, as said by the participants.

“I prefer receiving information from trained teachers, like those of Biology subject. They can explain it better than parents who were not trained.” (FGD 8)

“Teachers also have been trained, have lived it and know how it goes. They are more knowledgeable and use books to teach us.” (FGD 8)

“The reason we prefer the schoolteachers is that we are very close to them, and they can tell us everything without being shy.” (FGD 10)

“It is better being informed from the school because teachers have adequate knowledge about it. They were trained and know well what to teach. They are experts.” (FGD 13)

Female schoolteachers are operational in some subjects where sexual and reproductive health is taught and are mainly preferred by girls, and some participants consider them like their mothers.

“I would prefer obtaining information from a female schoolteacher because she looks like my mum. She is a woman and can answer my queries.” (FGD 8)

“The subject of Biology is taught mostly by female teachers. They are very aware of what girls are experiencing and have had a similar experience. That is why we are very close to them and ask them everything we want to know.” (FGD 8)

10.2.4.4 Health facility

Participants indicated that they prefer obtaining information from the health facility for various reasons, including their expertise in caring for the youth’s sexual and reproductive health and their professional code of conduct, such as adequate training and confidentiality.

“It would be better for me to obtain information from the health facility because they have people in charge of youth.” (FGD 2)

“People from the health facility are trustable. They cannot lie to me, and they have been trained.” (FGD 2)

“I would prefer going to the health facility because I am more comfortable there, and they have an obligation of confidentiality.” (FGD 2)

In addition, participants believe that they can obtain much more information from the health facility compared to other sources of information on sexual and reproductive health.

“It is better to obtain information from the health facility because they have much more information than other sources. They have witnessed girls with early pregnancy and related consequences.”(FGD 7)

10.2.4.5 Participants’ siblings

The study participants provided justifications for preferring their relatives, including brothers or sisters, as their sources of information on sexual and reproductive health. They indicated that the relatives are almost the same age as the participants and spend much time with them when their parents leave home to work.

“I prefer fetching information from my elder brother because he is the one I mainly stay with when my parents have gone to work. We are the same age, and I ask him whatever I wish to ask, and he responds well.” (FGD 2)

10.2.4.6 Television

Some participants indicated they prefer television because it offers an opportunity to use both voice and image about sexual and reproductive health.

“I think using television is better because it has both voice and images. We understand better when we hear and see.” (FGD 3)

10.2.4.7 Radio

Participants believed that radio provides reliable information and is accessible to many people, especially when they cannot meet physically to learn about sexual and reproductive health.

“I prefer the radio because it is accessible to many people and therefore it cannot lie to them.” (FGD 4)

“Radio broadcasts to a wider audience. People who cannot meet physically others can listen to the radio.” (FGD 7)

10.2.4.8 Internet

Some participants said they prefer being informed by the internet because they think they can have answers to all of their questions on sexual and reproductive health.

“Internet has answers to everything we ask.” (FGD 2)

Participants recognised, however, that using the internet may be problematic through watching pornography. Still, they also believe the internet can help them solve the problems arising from using it.

“You can watch pornography from the internet, but you can also seek information on how to avoid watching pornography from the internet.” (FGD 9)

10.2.4.9 Church

One participant in a focus group discussion insisted that the church is preferred to other sources because, through prophecy, God illuminates it and provides trustworthy information.

“I would prefer receiving information from the church, from the prophet illuminated by God and who is truthful.” (FGD 11)

10.3 CONCLUSION

This study indicated that schoolteachers and mothers are the primary and preferred sources of information on puberty and reproduction for early adolescents. Participants’ brothers (sisters) were also preferred sources of information on puberty. The sources of information for boys and girls are different. Contrary to current practices, healthcare providers (from health facilities: Doctors/nurses) were not preferred sources of SRH information. Social media sources (films/videos, internet, TV) were preferred SRH sources for boys but not for girls. In addition, boys and girls prefer receiving SRH information from people of the same sex. The study also indicated that some SRHR sources were associated with higher SRHR knowledge among early adolescents than others. Early adolescents provide different reasons for preferring some sources to others. Efforts to educate early adolescents on SRHR should target preferred sources and those that positively impact the participants’ knowledge, beliefs, and behaviours. Teacher and family members' training might contribute to enhancing early adolescents' SRHR knowledge and attitudes. Findings suggest that healthcare providers should review strategies to attract early adolescents and gain their trust.

Schools may invite and involve healthcare providers regularly in delivering comprehensive sexuality education in the school settings, which might increase interactions between early adolescents and healthcare providers, reduce fearing healthcare providers, and increase trust in them. Findings also suggest cultural norms and gender preferences should be considered while delivering SRHR education to early adolescents. One of the possible strategies may consist of separating girls and boys during the sexuality education class time and encouraging sexuality education delivery by same-sex teachers. Finally, renovating the teaching of sex education and shifting from traditional teaching to role-playing mode might contribute to overcoming cultural norms and gender barriers related to sex education for early adolescents. Research indicates that this mode of teaching is more engaging and allows all learners to share their views, and therefore, breaking cultural restrictions [300]. Additionally, theatre-based programs can help early adolescents develop knowledge, attitudes, and intentions that may prevent future sexual risk behavior [301].

CHAPTER ELEVEN

INTEGRATED DISCUSSION

11.1 INTRODUCTION

This chapter reflects on the integration and overall discussion of the findings. This research aimed to answer the following research question: how does early adolescents' SRHR environment in Rwanda address their specific information needs in general and explore the extent to which their SRHR knowledge influences sexual behaviours, sexual experiences and health outcomes among this age group (12-14 years)? To achieve this, we used the social-ecological framework to understand the interaction between several factors affecting adolescent sexual and reproductive health and rights, enabling access to SRHR information, affecting their SRHR knowledge and attitudes, sexual experiences and health outcomes. We conducted the study in three phases consisting of the desk review (phase 1), the survey of 811 early adolescents (phase 2) and 13 focus group discussions with 108 early adolescents (phases 2 and 3). We presented the findings in a narrative form using a contiguous approach, whereby the findings from each phase were presented in different sections, and a visual display was used to represent the overall findings in one display in Appendix 34 [302].

11.2 APPROACHES TO INTEGRATION OF FINDINGS

The literature guided the integration of findings from this research. Skamagki et al. indicate that in a specific mixed methods design, integration is a dynamic and interactive process of mixing or integrating qualitative and quantitative strands of the study [303]. Integration can be conducted at three levels: study design level, methods level, and interpretation and reporting level [302]. In this research, the integration of qualitative and quantitative findings was achieved at the level of interpretation and reporting of findings. Literature indicates three approaches to achieving integration: narrative, data transformation and joint displays [256, 304]. Integration through narrative may consist of writing both qualitative and quantitative findings together (weaving approach), presenting qualitative and quantitative findings in a single report but in different sections (contiguous approach), or, in a multistage mixed method study, reporting results in stages (staged approach) [256]. Integration through data transformation consists of converting a type of data into another one, e.g. qualitative into quantitative or vice versa, or integrating transformed data with untransformed data [256]. Integration through joint displays allows data to be brought

together using visual means such as figures, tables, matrices, or graphs and generates new insights from qualitative and quantitative results [256, 305]. In the current research, we presented findings from each study objective in different sections, thus using a contiguous approach, and then used joint displays to integrate findings.

Three outcomes were possible to assess the coherence of findings in this study: confirmation, expansion, or discordance. Confirmation was when qualitative and quantitative findings were in agreement; expansion was when findings from both sources diverged and expanded insights of the studied phenomenon; and discordance occurred when qualitative and quantitative findings disagreed [256, 304].

11.3 INTEGRATED RESEARCH PROCESS

This section describes how the research process enabled the research objectives to be reached. Conducted in three phases, this research gathers findings from seven objectives. The first phase allowed us to achieve three first objectives (objectives 1-3), and it is within this phase that this research explored contextual issues related to sexual and reproductive health and rights (SRHR) for early adolescents in Rwanda. Findings from the first objective provide an understanding of SRHR policy and laws in the international, regional and local contexts. The second objective's findings expand findings from objective 1 and contribute to a further understanding of the SRHR context by exploring key stakeholders' perspectives on factors enabling or hindering early adolescents' access to SRHR information in Rwanda. SRHR context influences comprehensive sexuality education (CSE) programmes for early adolescents, particularly its content. Therefore, findings from the third objective build on those from two previous objectives (one and two), help to explore major orientations of the CSE curriculum for early adolescents, and provides significant topics covered by the curriculum, which also contributes to a further understanding of the environment of sexuality education, where some topics are more emphasised than others. In the second phase of this research, this research provides a real picture of SRHR knowledge, beliefs, behaviours, sexual experiences, health outcomes, and sources of SRHR information of early adolescents in Rwanda. These findings are presented in achieving objectives 4-7 and reflect on the outcomes of existing initiatives in Rwanda to inform early adolescents about their SRHR and improve their adolescent sexual health. They provide the current status of early adolescents' SRHR knowledge, beliefs, behaviours, sexual experiences, and health outcomes, as well as the influences

of SRHR knowledge on these behaviours and experiences. Findings in objective 7 indicate how early adolescents access SRHR information and justifications for their preferences. Finally, in phase 3, results from focus group discussions (FGDs) with early adolescents were useful for expanding the findings from the survey.

Therefore, phase one of this research allowed us to understand the context of early adolescent sexual and reproductive health, which, in return, allowed us to explore the levels of SRHR knowledge, beliefs, behaviours, sexual experiences and health outcomes of early adolescents, as well as their means of accessing SRHR information (phase two and three).

11.4 OVERALL DISCUSSION OF FINDINGS

11.4.1 SRHR policy and laws during early adolescence

Policies shape the development of sexual and reproductive health globally and in Africa in particular [306]. Policy is key to promoting and including early adolescents' SRHR in national programmes. This research explored the extent to which gender and sexuality policies promote early adolescents' SRHR needs, especially those related to access to gender and sexuality information, knowledge and, ultimately, their sexual health in Rwanda. We anticipated that policies underscore the unique needs of early adolescents, especially those related to gender and sexuality knowledge, beliefs and behaviours, and health outcomes. We used the policy triangle framework to examine the context, content, process and actors within reviewed policies.

The review exercise focused on how the policy addresses the needs of early adolescents in Rwanda, especially their access to gender and sexuality information, to raise their SRHR knowledge. The findings from this review indicate that policies on SRHR for adolescents in Rwanda are informed by international and regional commitments for promoting adolescent health. The review of the policy triangle framework described the context of SRHR for early adolescents in Rwanda, as reflected in most policies reviewed. We found that economic, health sector system, population, education, gender and ASRHR factors shape the context of early adolescents' sexual health and, therefore, their access to gender and sexuality health information in Rwanda.

The international context of policies was dominated by the government's political will to comply with the global developmental agenda, including conventions, declarations, commitments, agenda

and guidelines. Among these include the sustainable development goals (SDGs) and the Agenda 2063. In the SDG 3, target 3.7 consists to “ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes”, by 2030 [93]. Furthermore, Agenda 2063 converges with SDG 3 by envisioning “healthy and well nourished citizens”, where “Health and Nutrition”, and “Sustainable and Inclusive Economic Growth” are highlighted as priority areas of the agenda . In addition, Agenda 2063 aim to promote “Full gender equality in all spheres of life” (Goal 17) with “Violence and discrimination against women and girls” as a priority area [285]. Finally, Goal 18 of Agenda 2063 is about “Engaged and empowered youth and children” and prioritises “Youth empowerment and children’s rights” [283, 285]. This highlights the extent to which the global community through the SDG and the African Union Commission, through Agenda 2063, are concerned about facilitating access to SRHR information and education at all stages, including early adolescence. In addition, the review indicates that policies describe the context in which policies were developed in the country.

Despite providing the country’s context, we found that policies have no clear indication of the specific context surrounding the sexual health of early adolescents in Rwanda. Even where the policies refer to youth and adolescents (10-19 years), they fail to recognise the specific needs of this age group (10-14 years). We found a lack of youth-friendly facilities and cultural difficulties for parents, teachers, and partners to engage with children about sexuality education. The policy also highlights the need to support parents (guardians), teachers, community and religious leaders, and youth-friendly centres to communicate with adolescents. The SRHR policy also gives room to community health workers, local authorities, the private sector, and other literacy centres to deliver SRHR information to adolescents, which raises concerns related to the coordination of these actors in delivering information and the universality and quality of such information. Early adolescents are most often considered together with older adolescents aged 15-19 and other older populations of reproductive age while setting policies. The result is that they overlook the specific needs of early adolescents, which might not be adequately addressed in SRHR programmes, especially regarding sexual and reproductive health (SRH) services, including access to SRHR information. On this note, we found that, despite equal SRHR rights to all people, early adolescents were not eligible for SRH services until they were 18 years old, the age of majority, to decide about reproductive health matters. This requires parental consent, resulting in a lack of privacy

and confidentiality when receiving SRHR services. Likewise, the content of reviewed policies overlooks focusing on early adolescents by considering adolescents and youth altogether. However, the review indicated that the policy was clear about addressing sexual and gender-based violence, including the provision of medical, psychosocial and legal support to victims of sexual and gender-based violence (SGBV) in Isange One-Stop Centres. We found that the health system faces insufficiently qualified personnel and inadequate skills, a situation that may be extended to limited access to SRHR information to early adolescents. This finding is consistent with Mokitimi et al., who suggest that lack of staff capacity and staff shortage are the main barriers to policy development and implementation in Low- and Middle-income countries [269].

We also found that the policy targets access to quality and comprehensive SRHR information in a youth-friendly environment and highlights various ways adolescents access SRHR information: schools, mass media, and youth-friendly centres, and stipulates areas of focus by SRHR information. This finding was supported by SRHR stakeholders, the CSE review and during the survey and FGDs with early adolescents.

Concerning the process and actors, policies mention various mechanisms of developing, implementing, monitoring and evaluating the policies and the actors involved in these processes. The success of these processes is assured by the collaboration between several actors, including agencies for international development such as USAID and others, United Nations agencies, government agencies at central, intermediate (district) and local community levels, the non-governmental organisations, faith-based organisations, and actors from the private sectors. Government agencies include, for example, various ministries concerned by the policies, while the UN agencies include the UNFPA, WHO, UNICEF, and WFP. Sometimes, different actors from the various institutions/agencies team up and create working groups for the success of a specific policy. Examples include the Development Partners Coordination Group (DPCG), the Budget Support Harmonization Group (BSHG), and the Family Planning Technical Working Group (FPTWG). Early adolescents are minimally involved in this process. On this note, Campos et al. suggest the need to manage six groups of stakeholders: beneficiaries, administrators from multiple layers of organisations (bureaucracies), interest groups that may facilitate or inhibit the policy implementation in the protection of their interests, financial decision-makers, political leaders, and external actors for funding and influencing implementation, especially in low and middle-income

countries [307]. In another study, stakeholder participation and consultation contributed to the successful development of health policy [270].

Furthermore, studies highlight the importance of involving partners in policy development to ensure the resulting documents are comprehensive [270]. Some policies are initiated after collecting data from adolescents from some parts of the country. On this point, Mukanu et al. argue that this helps the government lobby for support and collaboration from various partners and may result in increased funding [270]. Despite this involvement of multiple stakeholders, the role of early adolescents in establishing a policy or as policy actors remains unclear. On this note, Chandra-Mouli et al. suggest that adolescents (including the young ones) be involved in national and local actions to address their needs, such as policy development, designing, implementation, monitoring and evaluating programmes and projects [308]. This involvement may contribute to achieving the sustainable development goals (SDGs) 3, 4 and 5 [26].

11.4.2 Perceived determinants of early adolescents' access to SRHR information

Informed by the social-ecological framework of adolescent health, this research explored participants' perspectives on the enablers and barriers to young adolescents' access to SRHR information in Rwanda. The social-ecological framework describes multiple interacting levels of interventions to enable adolescent SRHR [246], especially in terms of access to SRHR information by young adolescents. Participants in this study perceived that young adolescents' access to SRHR information consists of interrelated individual, relationship, community and societal factors.

The study found that individual factors include the young adolescents' SRHR curiosity and age, determining the exact time to initiate sexual information. The study found that young adolescents ask SRHR-related questions to know more about SRHR, but these questions show they have inadequate SRHR knowledge and suggest their need for more knowledge. Limited knowledge was further confirmed by findings from the policy review and survey in this study and predisposed early adolescents to risks related to HIV, AIDS, and substance and alcohol use. Previous research also highlighted that young adolescents in Rwanda receive partial and inaccurate SRHR information [309]. A recent scoping review concluded that young adolescents in low- and middle-income countries have inadequate SRHR knowledge, especially regarding puberty and menstruation [310]. Young adolescents' SRHR knowledge in Rwanda is inadequate, as in many

other settings such as Sub-Saharan Africa [64, 75], Guangzhou City in China [311], Korea [14] and Indonesia [199]. The age of initiating sex education was another perceived determinant of access to SRHR information by young adolescents. However, participants disagreed on the exact age at which such education should be delivered. Kingori et al. suggest that the age of receiving SRHR information may influence people's sexual health education [268]. Other literature suggests that sexuality education must be age-appropriate and start at an early stage [137], specifically in early childhood [312]. Sometimes, young age is considered a barrier to sexual communication [313] because it is thought that it is too early for young adolescents to receive SRHR information [313, 314]. Still, other studies conclude that young adolescents have insufficient SRHR knowledge [14].

The relationship-level factors influencing access to SRHR information included parent-child interaction and peer norms. Similar to other studies [315], the current study found that sexuality is not openly discussed with parents but that it is sometimes discussed with members of the extended family [316]. However, young adolescents often perceive parents as the primary sources of SRHR information [316, 317], but many parents do not discuss sex with their children. There is limited communication with parents because parents lack the skills and time to engage with young adolescents, have negative attitudes towards SRHR information, and face language-related barriers and cultural norms at the family level. In other studies, parents also had limited resources, including knowledge [315], negative attitudes [315] and sociocultural norms [315, 318] as barriers to SRHR communication with (young) adolescents. The belief that parents are worried that SRH education will stimulate sexual activity among young adolescents is echoed in other studies [198, 313]. Usually, parents perceive sexual activity as bad, shameful, and morally reprehensible, which impedes the discussion of sexual health topics with young adolescents [48]. The study found, like other studies, that parents send young adolescents to members of extended family (aunts, uncles, and grandparents) for sexual socialisation [85, 314, 319].

The participants thought that educated parents are more likely to discuss sexuality with young adolescents than uneducated parents. Another study in Iran reported that parental education, specifically the mother's education, influenced young adolescents' SRHR knowledge [320]. In addition, while young adolescents need adults who spend time with them [314, 321], this study shows that parental absence from the home reduces parental monitoring and opportunities to

deliver SRHR information. Furthermore, this study revealed that, for SRHR stakeholders, the language used to engage with young adolescents about sexual information in local terms is culturally inappropriate and embarrassing. In contrast, early adolescents in focus group discussions prefer learning Kinyarwanda over English when learning SRHR. However, a booklet in the local language, Kinyarwanda, is available to facilitate SRHR communication between parents and young adolescents [322].

Similar to a previous study in Tanzania [323], this study highlighted the role of peers in delivering SRHR information. Peer norms do not allow girls to access SRHR information and encourage silence about sexuality fully, and this is similar to findings from Vietnam [324] and Ethiopia [314]. Silence about SRHR implies that young adolescents cannot access a full range of SRHR information, which might affect girls' SRHR information-seeking behaviour [314]. Furthermore, the SRHR messages from peers are contradictory, calling for both sexual abstinence and intercourse. This finding aligns with previous research indicating (young) adolescents follow contradictory peer norms [72].

Access to SRHR information requires using relevant sources at the community level. Echoing other studies [64, 315], this study revealed that young adolescents' access SRHR information from multiple sources. The current study found that structured programs such as school-based sexuality education, youth-friendly corners at health facilities, Urunana and Ni Nyampinga radio shows, and (m4RH) provide reliable SRHR information to young adolescents. However, the study found that schoolteachers face limitations such as beliefs, attitudes, and lack of skills when delivering SRHR information. In addition, some sources provide SRHR information based on the gender of the recipients. For example, Ni Nyampinga was created by girls for girls, and this radio show targets only girls provides information about health and relationships and depicts ideal girlhood for young female adolescents [325, 326]. This suggests that SRHR information should be customised to boys or girls to respond effectively to their needs. m4RH is a text message-based platform that sends SRH information to young adolescents in Kinyarwanda [327]. However, m4RH reaches a limited number of young adolescents because of the low mobile phone ownership of young adolescents. Furthermore, the findings suggest that young adolescents access less reliable and unprofessional SRHR information sources, including friends, social media platforms (Facebook and WhatsApp)

and mobile phones. This raises concerns about the quality of messages delivered, leading to calls for harmonisation of SRHR information.

The study highlighted the influence of culture and gender norms on delivering SRHR information to young adolescents because of taboos. The study corroborated findings from other studies that sexuality is a taboo and embarrassing subject to discuss with young adolescents in many societies [198]. Sexuality taboos also influence the design and implementation of sex education programmes [328]. Sexuality taboos suggest that providing and seeking sexual information sounds unacceptable to many young adolescents.

Like other studies [12, 85], the current study found differences in boys' and girls' gender roles, suggesting a different socialisation process that affects access to SRHR information. We found that the community expects girls to remain submissive, ambivalent or silent about sexual matters but that boys are expected to enjoy their sexual powers and freedom; this is also reported in previous studies [314, 329].

In addition, the findings from this study suggest that religious beliefs play an important role in determining the content of SRHR information in Rwanda [96], similar to other studies [330-332]. Participants from FBOs espoused preserving morality among young adolescents by focusing mainly on the moral values of sexual abstinence and virginity. In contrast, participants from public institutions advocate for safe sex and modern contraception. These findings suggest that, like another study [274], all education stakeholders must suggest consistent content of SRHR information. In addition, the study found no agreed-upon definition of "gender" applicable to the Rwandan context. Gender significantly influences sexuality [84]; hence, well-defined content is a foundation for determining what, how, when, and to whom to provide it best [333].

This study found that factors at the societal level also influence access to SRHR information. These factors include inadequate resources, policy-setting processes and SRHR laws. Concerning the resources, the study noted, like others [153], limited means to develop teaching aids and a shortage of trained employees (including schoolteachers) to deliver SRHR. In this regard, inadequate resources constitute challenges to implementing sex education in Rwanda [96] and other resource-poor settings [157, 174, 334].

This study also identified the challenges of inadequate SRHR education policy-making processes and laws that do not involve local stakeholders. Participants highlighted the need for research before initiating SRHR policy-making and involving local stakeholders. These findings underscore the perceived importance of research and the involvement of stakeholders from different backgrounds to develop universal and culturally relevant SRHR content [274]. Additionally, this study's findings suggest revising adolescent SRHR laws to enable adolescents to access to SRHR services and information without parental consent, as recommended by the World Health Organization [335].

11.4.3 Content of SRHR messages to early adolescents

The current study reviews CSE's content, which is reflected in Rwanda's competence-based curriculum for early adolescents. It assesses which aspects of international guidelines on sexuality education are represented in this curriculum of CSE in Rwandan schools. The literature indicates that sex education may be delivered as a stand-alone or integrated subject [142, 146]. In this review, the competence-based curriculum integrates CSE into existing subjects. In other settings, sexuality education is delivered on the subject of Biology to emphasise biological aspects of sexuality [143, 152, 160, 336] rather than focusing on human rights and skills development. As the selection of such subjects depends on the country, the types of schools, and other conditions [146, 336], the findings from this study highlighted that the subjects of Social Studies, Science and Elementary Technology, and Knowledge of the Environment were the ones that accommodate CSE in Rwanda in addition to other subjects mentioned in the current study.

Integrating CSE into extant subjects is preferred in Sub-Saharan Africa. It can reduce the pressure of an additional subject on students and teachers and the need for a specially trained teacher [337]. However, studies indicate that CSE may be given inadequate weight when integrated into other subjects because it is perceived as diluted by other subjects [100, 174]. In addition, this integration may result in allocating a limited budget to CSE for some schools and the development of inadequate teaching materials by untrained teachers [143]. Finally, when CSE is integrated into elective and/or non-examinable subjects, students may miss some CSE content, or some teachers may pay little attention to these subjects that are not examinable [174, 338]. It is, however, essential to note that the competence-based curriculum in Rwanda indicates that the subjects in which CSE is integrated are mandatory and examinable [182]. A standalone CSE subject provides

opportunities for monitoring and evaluating programming and revising the curriculum when necessary [142]. Therefore, delivering CSE as a standalone or integrated subject, or a combination of both in Rwanda, has implications beyond this research's scope.

This study showed that the competence-based curriculum integrates sex education at the pre-primary level, which echoes the recommendations to initiate CSE in childhood, including kindergarten and preschool [17]. The number of CSE competences in the curriculum increases progressively by age, with a small amount of CSE competences in lower grades and a high number of competences in lower-secondary education (12-14 years). This echoes sexuality education guidelines indicating that CSE should be age- and developmentally appropriate [17, 137, 138, 145, 339].

The Government of Rwanda recognises that CSE should cover the eight key areas recommended by ITGSE [180]. However, this review of the competence-based curriculum in Rwanda indicates that CSE emphasises some key concepts and overlooks some equally important others of the 58 CSE competences identified through all reviewed CSE curricula, many of them about the key concept of sexual and reproductive health. CSE competences related to understanding, recognising and reducing the risk of STIs, including HIV, and those related to pregnancy and its prevention were respectively the most frequent in the competence-based curriculum. Keogh et al. [153] indicate that imbalances in the coverage of CSE are due to the prioritisation of certain areas over others. HIV and other STDs and pregnancy prevention were also the main focus of sex education programs in the United States of America (USA) [340], which contrasts with current findings.

Similarly, in Mexico [341], CSE emphasises topics related to the human body and development, such as sexual and reproductive health anatomy, physiology, and puberty. Qualitative findings from the current study showed that the main reason for the Rwandan competence-based curriculum to focus on aspects of reproductive health anatomy and physiology is to teach early adolescents to protect themselves and reduce risks related to unsafe sexual activity, like the sex education in several settings, including the USA [147]. Furthermore, while the participants indicate that CSE focuses on preventing sexual violence among early adolescents, the results from the curriculum review show that this area is the least represented in CSE competences, which suggests a further elaboration of this area in the curriculum.

Although the competence-based curriculum defines the CSE content for early adolescents in Rwanda, it is crucial to provide a reference book for teachers of the pre-primary and primary levels to standardise and optimise the implementation of the CSE program in Rwanda. In 2018, the Rwanda Education Board published a teachers' reference book on CSE at the secondary education level [180]. This book aims to help teachers address their value conflicts and build learners' knowledge, skills and attitudes related to sexuality, reproductive health and communication. However, this book does not allocate the content to each intended education level nor guide CSE for the pre-and primary levels, suggesting different implementation pathways.

Globally, despite the existence of sexuality education standards [145-148, 342], the content of CSE programs is dissimilar across countries [340]. For example, contrary to Ghana, where most of the sexuality topics are taught [153], this review of the competence-based curriculum shows that the prescribed contents of the CSE programme for early adolescents in Rwanda do not address all fundamental concepts and topics suggested by UNESCO's ITGSE [145]. This study aligns with the findings from other settings that there are differences and gaps in sexual health education curriculum content within and across countries, namely in the USA, United Kingdom, Mainland China, Hong Kong, and Taiwan [138]. While sexual health education in Kenya puts little emphasis on gender and sexual and reproductive rights [153], this study indicated the need to emphasise the key concepts that were not sufficiently reflected in the CSE programme for early adolescents in Rwanda. These key concepts include violence and staying safe (key concept 4), skills for health and wellbeing (key concept 5), sexuality and sexual behaviours (key concept 7), and relationships (key concept 1). In addition, these key concepts have limited CSE competences in the competence-based curriculum. In addition, eight of the 27 CSE topics suggested by UNESCO's ITGSE [145] are not addressed by the CSE programme for early adolescents, as indicated in this study. These findings suggest that early adolescents officially receive little or no information about the following important topics: long-term commitment and parenting; cultural aspects of sexuality; bodily integrity; safe use of information and communication; negotiation of safe sex; effective use of media for better sexual health, seeking help and body image. Furthermore, six recommended CSE topics appear only once in the competence-based curriculum in Rwanda, which suggests a further representation of these topics in the curriculum. These topics include families and tolerance, inclusion, and respect in key concept 1; social construction of gender and gender norms

and gender-based violence in key concept 3; norms and peer influence on sexual behaviour in key concept 5; and sex, sexuality and sexual life cycle in key concept 7.

Qualitative findings suggested additional CSE topics to the competence-based curriculum in Rwanda, such as safe sex, sexual pleasure, desire, and sexual orientation. This study noted that the CSE curriculum tends to focus more on the consequences of unprotected sexual activity and fails to consider safer and more pleasurable sex topics. Despite being controversial [160], a previous qualitative study indicates that discourse around pleasured sex is often associated with adverse outcomes such as not using condoms, rushing into sex, regretting sex, pregnancy or sexually transmitted diseases [343]. However, many scholars advocate that this topic be included in CSE content [147, 158, 160, 339, 344], as CSE on sexual expression and pleasure yielded more favourable outcomes [157]. Integrating sexual pleasure into CSE offers a positive approach to adolescents' sexuality, leading to increased contraceptive use and sexual agency [336].

Although mentioned by only one participant in this study, teaching young adolescents about controversial topics such as sexual orientation, namely about lesbian, gay, bisexual, transgender, or intersex (LGBTI), is an important topic that aligns with international guidance on sexuality education [145]. This finding echoes the recommendations from Crockett and Deardorff [152] to prevent associated harassment and discrimination against LGBTI people. In this perspective, scholars in Sub-Saharan Africa advocate for including in the curriculum and teaching culturally controversial topics such as abortion, homosexuality, and masturbation because these topics are avoided, skipped in the CSE programs or discussed in a negative light [337]. According to the UNFPA, sexual diversity is part of how children and young people should acquire accurate information [144]. In addition, the need to extend CSE to practical skills related to contraceptives was documented in Ghana [345].

Due to anticipating the consequences of an unexpected pregnancy, participants in the current study perceived that CSE for early adolescents focuses on pregnancy prevention more for girls than for boys. A study on young Romanian people indicated that, at the family level, girls get involved most often in sexual and reproductive health education compared to boys to prevent the harmful effects of sexual activity, including early pregnancy [346]. In addition, research evidence on gender norms and sexuality of young adolescents in Uganda indicated that, compared to boys, adolescent girls experience more challenges in their sexual health and need more protection and

supervision [107]. A previous study depicts girls as more vulnerable to unwanted sexual behaviour [347]. This study found that the competence-based curriculum focuses narrowly on violence and staying safe (key concept 4) and stresses the need to educate early adolescents, especially girls, on this topic, as they are more prone to physical and sexual assault than boys [340].

Participants from the current study disagree about the presence of some topics in the CSE programme for early adolescents in Rwanda, such as abstinence and birth control methods, including condoms. Participants from FBOs rely on Biblical virtues and support content encouraging abstinence, while public institutions aim to introduce birth control methods to prevent early pregnancy. FBOs argue that some content of CSE, especially condom use, compromises moral values and may lead to initiating early sexual activity among adolescents. Studies indicate that CSE has significant positive results on adolescents' behaviours [171, 348] and increases condom or contraceptive use [349]. Furthermore, evidence from a cluster randomised trial in Uganda concluded that delivering CSE to early adolescents does not result in early initiation of sexual activity [155].

This study highlights the influence of FBOs on the content of CSE programs. Notably, the Rwandan population is highly religious, as 93% are affiliated with different religions, dominated by Christianity [253]. Research in East and Southern Africa indicates that religious leaders are willing to provide and influence CSE programmes for children in Africa because of the presence of religious institutions in most communities and their authority [350]. It is equally important to note that effective CSE should be broader and provide a wide range of possibilities for safe sexual practices and should not be limited to promoting abstinence-only [351]. Regrettably, studies on sexuality education in four low- and middle-income countries highlight that contraception methods are neglected [153] or less emphasised [160, 330], and CSE focuses only on abstinence as the main method of preventing pregnancy [337]. The ITGSE suggests that engaging with religious leaders may help resolve these different views on the content of CSE programmes and conciliate what religions teach, scientific evidence, and the lived reality of young adolescents [145].

Despite little explicit focus on early adolescents in the SRHR policies, findings from key stakeholders and the CSE curriculum review highlighted coverage of early adolescents. They indicated that this age group was learning about SRHR.

11.4.4 SRHR knowledge, beliefs, behaviours and sexual experiences

This study aimed to examine the extent to which early adolescents were knowledgeable about sexuality, modern contraceptive methods, HIV/AIDS and other STDs, condoms, sexual norms and gender attitudes. Of concern are participants' low scores on knowledge about modern contraceptive methods, sexuality and condoms. Bergström et al. indicate that SRHR knowledge plays a crucial role in people's sexual behaviours [193]. Lee et al. indicate that the accumulation of knowledge results in beliefs and attitudes that inform behaviours [196]. Early adolescents need this knowledge to decide, for example, on being in romantic relationships, with whom to initiate these relationships, having sex and protecting themselves against pregnancy and sexually transmitted diseases, including HIV [64, 196]. The findings indicated most participants had poor knowledge (<50% score) of modern contraceptive methods and moderate knowledge (50-79% score) of HIV/AIDS and STDs and condoms. In addition, one out of two participants (50%) had moderate knowledge (50-79% scores), while four out of ten participants had poor knowledge (<50% score) about sexuality. These findings are consistent with other research indicating that many adolescents have inadequate SRHR knowledge [352]. A limited proportion of participants exhibited excellent knowledge of these topics. However, this study found that most participants exhibited favourable attitudes (>50% score) towards sexual norms and more gender-equitable attitudes. Adesina et al. indicate that SRHR knowledge is important in making informed decisions. Still, most young people lack this knowledge [172], which may be associated with involvement in risky behaviours [198]. In another study, Bankole et al. indicated that early adolescents had high awareness but limited in-depth knowledge about HIV/AIDS and pregnancy [64]. On this note, Hong et al. found that the sexual knowledge of early adolescents in South Korea was also poor [14]. Nasution et al. found a low to moderate knowledge of reproductive health among participants involving early adolescents in Indonesia [353]. Similarly, Kemigisha et al. found that SRHR knowledge was low among early adolescents in Uganda [75]. In addition, a scoping review indicates that early female adolescents have poor knowledge about menstruation and puberty, which leaves them unprepared for menarche [310, 352]. In addition, Fasil et al. found that comprehensive knowledge about HIV was shallow in girls in rural Eastern Ethiopia [354]. While Rwandan adolescents believe that condoms are the most suitable contraceptive method [355], only 63% of early adolescents in the current study had moderate knowledge about condoms. Bergström et al. also found poor knowledge about contraceptive methods in a study involving early

adolescents in Nicaragua [193]. This study also indicates that the lowest participants' knowledge score was obtained on modern contraceptive methods. Nevertheless, this knowledge is a determinant of contraceptive usage by adolescents in Low- and Middle-Income Countries [197]. Furthermore, Guzzo et al. indicate that adolescents' attitudes and knowledge about reproduction predict short-term fertility behaviours [356].

Participants in this study exhibited the highest knowledge score on HIV/AIDS and other STDs, with 67% of them having moderate knowledge. This finding is consistent with Finlay et al. who indicate that knowledge about HIV /AIDS is widespread in adolescents from Sub-Saharan Africa. Still, early adolescents in this part of the world lack knowledge about other aspects of SRHR [192]. However, research indicates that some early adolescents are highly aware of HIV/AIDS with limited in-depth knowledge [26, 357]. In contrast, research indicates poor knowledge about HIV/AIDS and STDs among primary school students in Malaysia [196] and early adolescents in West Java Province (Indonesia) [358]. Poor knowledge about HIV/AIDS was also found among participants aged 11-19 years (including early adolescents) in Nicaragua [193].

This study also highlighted variations in SRHR knowledge based on the participant's characteristics and behaviours. Boys scored significantly higher than girls on knowledge about condoms and significantly lower on HIV/AIDS and STDS than girls. Furthermore, the study showed that those from a rural setting scored higher than those in an urban setting on sexuality knowledge, and those in lower school grades (senior 1) scored higher than those in higher grades (senior 2) on knowledge about condoms. Being well-off was also associated with higher scores on knowledge about condoms than being poor. Perceived difficulty in communicating with the father was associated with scores about sexuality, while perceived difficulty in communicating with the mother was associated with scores on knowledge of contraceptive methods. In addition, discussing sex matters with the mother was associated with higher scores on sexuality, while discussion of sex with sisters was associated with higher scores on sexuality and condoms. Another association was found between attendance of parties and participants' scores on contraceptive methods and condoms. Drinking alcohol was associated with higher scores on modern contraceptive methods, while high frequency of watching pornography was associated with higher scores on knowledge about condoms. Searching SRHR information from the internet was associated with higher scores on sexuality, modern contraceptive methods and condom knowledge. Experience of caressing,

kissing, and touching genitals with hands was also associated with higher scores of knowledge about condoms. Finally, access to SRHR information (puberty and reproduction) was associated with higher scores of sexuality and condom knowledge.

Furthermore, associations were found between the following variables and sexual norms and gender attitudes: perceived difficulty to communicate with brothers or sisters; use of mobile phone; attendance of parties; high frequency of watching pornography and searching SRHR information on the internet. Other factors associated with sexual norms attitudes included ever kissing on the lips and ever touching genitals with a hand. Ever use of the internet was also associated with higher scores than non-use. Hong et al. found in South Korean early adolescents that factors associated with sexual attitudes and knowledge were embedded in Bronfenbrenner's social-ecological framework [14]. These included media such as the internet and pornography influences [14]. Research indicates that family-level factors, such as communication with parents (and, of course, other family members, including brothers or sisters, and other people in the school environment, such as comprehensive sexuality education), were associated with increased sexual knowledge and attitudes [14, 216]. In the current study, participants in the lower school grade (senior 1) exhibited higher knowledge about condoms relative to higher school grade (senior 2). This finding contrasts with Hong et al., who found that younger adolescents have low knowledge and susceptibility to HIV infection as compared to older ones [14]. Furthermore, boys in this study had higher knowledge of condoms and lower knowledge of HIV/AIDS and STDs than girls. On this note, Hong et al. note that evidence is mixed, whereby some studies indicate that girls have greater knowledge and awareness of risks than boys, while other findings suggest no sex differences [14]. Along the same line, another study suggests that boys have less SRHR knowledge than girls [328].

The findings on sexual experience indicated that more than four out of five early adolescents (81%) have started engaging in at least one of the romantic activities related to non-penetrative sexual experience, including hugging, holding hands, caressing, and touching or being touched genitals. Concerning being touched genitals, the prevalence ranged from 0.5 to 1.3% for girls in the current study, which corroborates the findings from Maina et al., who found a prevalence of 1% among very young adolescent girls in Nairobi, Kenya [226]. However, the prevalence of caressing in this study was 4% among girls, which Maina et al. [226] did not include. Furthermore, this study found a higher prevalence of hugging (29.1%) and holding hands (36.7%) than found by Maina et al.,

which were respectively 6% and 9% among very young adolescent girls in Nairobi, Kenya [226]. In addition, kissing was higher (5.3%) in the current study, while Maina et al. found 2% in young adolescents in Nairobi, Kenya [226]. In a different study in Kenya, Kagesten et al. indicated that most early adolescents have not engaged in romantic and sexual activities [24].

Concerning the factors associated with non-penetrative sexual experience, this study found in the logistic regression analysis that attendance of parties involving other young people, use of the internet, and primary and secondary levels of the father's education were independent predictors of non-penetrative sexual experience among the participants. Furthermore, this study indicated that non-penetrative sexual experience was associated with higher knowledge about condoms, attitudes towards gender and sexual norms. These findings contrast with what is generally expected, that higher knowledge is associated with healthy sexual behaviours.

Furthermore, nearly 7% of all early adolescents, including 11% of boys and 3% of girls, reported penetrative sexual experience, including oral sex, anal and/or vaginal intercourse. Jing et al. found a similar estimate (6.9%) of lifetime sexual intercourse among young adolescents (12-15 years) from Low and Middle-income countries (LMICs) [359]. Similarly, Markham et al. found that 6.5% of American Indian and Alaska Native youth aged 12-14 years have had sexual experience [28]. In another study, Roman et al. found that the prevalence of sexual initiation among Brazilian adolescents aged 12-14 years was lower in girls (7%) than in boys (18%) [227], which has a similar gender trend in this study and others in LMICs and Korea [359, 360]. However, Maina et al. found that the proportion of girls (10-14 years) with sexual intercourse was 2% in Nairobi, Kenya [226].

The prevalence of sexual experience was, however, higher than in this study when 17% of adolescents indicated being younger than 15 years at first sexual intercourse in a study done by Magnusson et al. [361]. Similarly, Hellerstedt et al. found that 42% of American Indian Youth aged 13-15 years reported ever having sexual intercourse [362].

For the lifetime penetrative sexual experience, the study found that being a male participant, drinking alcohol, having a high frequency of watching pornographic films (3 times and above), being forced to have sex, being a double orphan, and discussing sex matters with one's father were factors associated with a higher risk of lifetime penetrative sexual experience. Experience of forced sexual intercourse confirms the presence of sexual and gender-based sexual violence found in policy review. On this point, the literature indicates that early sexual experience among adolescents

occurs in the context of sexual coercion and violence [26, 105, 363]. This study also found that a high frequency of ever watching pornographic films was associated with penetrative sexual experience, which is consistent with literature indicating that exposure to pornography may have harmful effects on sexual maturation and behaviours of adolescents [364, 365] and that first sex was associated with exposure to pornography [366-368]. Furthermore, pornography use by adolescents results in unprotected penetrative and oral sex, a high frequency of casual sex, and an earlier onset of sexual activity [369]. The current study also highlighted that male participants were more likely to experience penetrative sexual experience, which is consistent with findings from Reis et al. [134] and Roman et al. [227] and may be due to masculinity encouraging boys to early sexual initiation for boys [134]. Furthermore, ever drinking alcohol in the current study predicted penetrative sexual experience among the study participants. In a study of the factors associated with sexual initiation among participants, including early adolescents in Brazil, it was found that the use of alcoholic beverages explained early sexual initiation [227, 370]. However, never discussing sex matters with the father protected participants in this study from penetrative sexual experience. This contrasts the knowledge that parent-child communication about sexual issues enhances healthy sexual behaviours among adolescents [317, 321, 371, 372]. Furthermore, improved communication between parents and adolescents contributes to healthy sexual behaviours [321, 373, 374], and parents' education may be beneficial in promoting adolescent reproductive health [375]. These findings suggest that addressing sexual experiences among early adolescents requires multi-level interventions in the social-ecological framework of their environment.

Smoking and ever-drinking alcohol in the present study were associated with penetrative sexual experiences. This finding is consistent with other research indicating that smoking cigarettes and using alcohol and other drugs were associated with sexual intercourse among in-school adolescents from five sub-Saharan African countries [230] and among older adolescents and youths [376].

Regarding the relationship between penetrative sexual experience and participants' SRHR knowledge, the study found that penetrative sexual experience was associated with higher scores of knowledge about condoms and attitudes towards sexual norms. Furthermore, reporting non-penetrative sexual experience was associated with higher scores of knowledge about condoms and greater scores on sexual norms and gender attitudes. On this note, Hong et al. suggest that more

sexually experienced youth may become more desensitised to sexual risk over time [14]. Similarly, Olaleye et al. found that having knowledge of modern contraceptive methods was associated with engaging in transactional sex [231]. Furthermore, participants with non-penetrative sexual experience recorded greater scores on knowledge about condoms. Nevertheless, as expected, higher scores on knowledge about HIV/AIDS were associated with a lack of penetrative sexual experience among the participants.

11.4.5 Sexual Health Outcomes

This chapter reflects on early adolescents' sexual behaviours and health outcomes and how their knowledge influences these behaviours and health outcomes in Rwanda.

This study found that 3.7% of early adolescents were involved in transactional sex in exchange for money or any other gift. This proportion is, however, lower than the proportion in a study of street-involved young people 10-24 years, which was found to be 22.8% (Olaleye et al., 2020), and this difference may be explained by the inclusion of older adolescents and youths (15-24 years) who get involved in sexual activity as they grow up. On this point, research indicates that sexual behaviours as a function of age [234] and sexual experience increase with age.

Concerning the number of sexual partners, the findings from the current study indicated nearly three sexual partners for the 28 early adolescents who responded to this question. Olaleye et al. found that most participants in their study (56%) had more than one sexual partner [231]. In addition, findings on sexual behaviours of early adolescents are lower than those from older adolescents. For example, a study conducted by Lyu et al. among undergraduate students (15-24 years) in China indicated that 41.8% of males and 28.8% of females had more than one sexual partner [209].

Concerning being in relationships, the current study found that 31% reported ever having a boy/girlfriend/sexual partner, while this proportion was higher at 56.1% among older adolescents and youths [209]. Similarly, research found that most early adolescents from the Global Early Adolescent Study (GEAS) had at least one friend [377]. This study also showed that participants had friends of their age (mean, 13.8 years) and girls' friends/partners were significantly older than boys' friends/partners (14.6 versus 13.2 years), which is consistent with findings from Antfolk et al. among older women [378]. The age at first-time sex in this study was 12 years for the six

participants who responded. Lyu et al. also found that this age was less than 18 years for 15.3% of the participants aged 15-24. However, this age was 14.6 years, according to a study conducted by Senn and Carey [379]. Concerning the reasons for first intercourse, participants indicated forced sexual intercourse, which is in contrast with the findings from older adolescents and youth, who indicated that they were both willing to have sexual intercourse [209].

Concerning the current use of contraception, the current study found that 297 early adolescents (36.6%) (of whom 17% of girls and 19.6% of boys) had ever used a contraceptive method, with periodic abstinence and condoms as the most common options. Similarly, another study indicated that the proportion of older adolescent girls (15-19 years) in Rwanda was 17.4% [380]. However, the predominant options for these older adolescents were respectively implants and condoms [380]. In addition, Olaleye et al. found that 31% of the sexually active street-involved young people aged 10-24 years in Nigeria had never used any form of modern contraception with condoms as their primary option [231]. However, this proportion rises to 30.8% among sexually active adolescents (14-18 years) from Bolivia and Ecuador [84].

Regarding the use of contraception at first sex, three (25%) of 13 participants who responded in the current study indicated no use of means to avoid pregnancy, and condoms and pills were the most commonly used methods of contraception mentioned by participants. On this note, research indicates that sexual activity and pregnancy during early adolescence are less frequent than during late adolescence and that girls who initiate sex before 15 years are less likely to use a contraceptive method [381]. Furthermore, though the number of respondents was small (n=12), the proportion of non-users of contraception during last sexual intercourse was higher in this study (25%) than in New Mexico and the United States (16% and 14%, respectively) [175]. Furthermore, most of these participants indicated no regret for having sex for the first time. These findings are far different from those for older adolescents and youth, which indicated that nearly 74% of them used contraception methods for their first sexual intercourse [209].

In this study, participants report some sexual violence because 8% indicate ever being touched unwillingly, and this rarely happens for most of the 40 participants (57.5%) who responded to this question. Furthermore, for ten respondents in the current study, first-sex partners are non-intimate and sexual intercourse is forced for most of the participants involved, as reported earlier. Such findings are consistent with those from the policy review and those on sexual experiences

previously reported in the current research and highlight again the presence of sexual and gender-based violence among early adolescents. These findings are consistent with literature suggesting that sexual activity among early adolescents is nonconsensual [105, 381]. Consistent with this, De Meyer et al. reported the lack of mutual initiative to have sexual intercourse the last time for the majority (55.6%) of older adolescents (14-18 years) [84]. Sexual violence for adolescents may include any of the following acts: unwanted touching, attempted sexual intercourse, forced or coerced sexual intercourse [26].

Regarding pressure to have sexual intercourse, the findings indicated that around 7% of participants feel this pressure from a little to a great deal and that this pressure originated mainly from their friends. De Meyer et al. indicate that this proportion was 14.4% and 10.7%, respectively, for sexually and non-sexually active older adolescents (14-18 years) in Bolivia and Ecuador [84].

Concerning plans for sexual intercourse, more than seven out of ten participants plan to wait until marriage, and more than one out of five will wait until they are engaged to be married. However, around one per cent of the participants plan to have sexual intercourse when opportunities come along. Furthermore, more than nine out of ten participants indicated that sexual intercourse might not be a positive experience, against eight per cent of them who said this could be a positive experience. De Meyer et al. report that 23% of older non-sexually active adolescents (14-18 years) believe that sexual intercourse could be a positive experience. In contrast, the sexually active adolescents were more likely to describe the last sexual intercourse as a positive experience. On this note, Vasilenko indicates that adolescents may have different perceptions of their sexual behaviours, including positive and negative feelings such as guilt, shame or sexual satisfaction [234].

Concerning participants' health outcomes, the findings from this study suggest low involvement of boys in pregnancy (1.3%) and no pregnancy for girls. These findings are consistent with literature suggesting low sexual activity and pregnancy among early adolescents [2, 64, 381]. However, nearly 3% of the participants reported ever having an STD, and nearly 31% of them indicated ever testing for HIV. Gabster, Pascale [235] provide the prevalence of various STIs (such as HIV, syphilis, and Hepatitis B) among school-going indigenous adolescents (14-19 years) reporting sexual experience in Panama but do not provide an overall estimate of STIs and HIV test in their study [235]. Similarly, Aguirrebengoa et al. report estimates of the prevalence of various

STIs among adolescents (10-19 years) in Madrid and do not provide an overall picture of the participants' HIV and STIs testing in general [236]. In contrast, Monteiro found that 32% of 196 adolescents aged 14-19 had at least one STI (Monteiro et al., 2023), an estimate far greater than 2.9% of the current study.

Kyilleh et al. indicate that adequate knowledge is needed to prevent the consequences of premarital sex, including unwanted pregnancies, unsafe abortion, and STDs [123]. The findings from the current study showed that SRHR knowledge plays a crucial role in early adolescents' sexual behaviours and health outcomes. Quantitative findings suggest that early adolescents with high knowledge tend to undergo an HIV test. Furthermore, qualitative findings helped to explore how early adolescents benefit from the information and knowledge obtained about SRHR. These benefits include better management of risks associated with access to inadequate information and misinformation, adopting healthy sexual behaviours and avoiding unhealthy ones, and raising their awareness about some essential sexual and reproductive health issues, including menstruation, pregnancy, HIV/AIDS and other sexually transmitted diseases. Research indicates that SRHR knowledge and attitudes affect sexual behaviours. On these notes, Lyu et al. found that low levels of SRHR knowledge were associated with risky sexual behaviours among Chinese undergraduate students [209]. Tumwakire et al. indicated that youth (15-24 years) in Uganda with low knowledge tend to engage in risky sexual behaviours [382]. Furthermore, Guan found an association between sexual and reproductive health knowledge and behaviours among university students in Beijing [207]. Likewise, Kim et al. found that among female university students, sexual knowledge and attitudes affected sexual behaviours with the mediation of sexual attitudes [383]. In contrast, Lou et al. found that sexual knowledge did not affect the safe sex behaviours of adolescents in Taiwan [384].

11.4.6 Current and preferred sources of SRHR information and their relationships with adolescent health

This study aimed to assess the sources of SRHR information, the preferred ones and how these sources were associated with participants' SRHR knowledge and attitudes. Understanding how early adolescents acquire SRHR is crucial to determining which sources they like for better intervention [63, 76]

Current sources of SRHR information

Consistent with previous research in Four Sub-Saharan African countries [64], early adolescents in this study receive SRHR information from multiple sources. The findings from the current study showed that community- (parents, mother, father, siblings, other family members) and school (schoolteachers) based sources were reported as the main sources of SRHR information on puberty and reproduction by early adolescents in Rwanda. Specifically, Schoolteachers and participants' mothers were the main sources of SRHR information about puberty and reproduction for early adolescents. Similarly, literature shows that early adolescents identify their parents as primary sources of SRHR information [3, 129, 316, 317] and would prefer receiving SRHR information from these parents [198]. On this note, Kennedy et al. highlight parents' responsibility in providing SRHR information to children [128]. Furthermore, parents perceive themselves as important sources of SRHR information [125]. However, some parents lack the self-efficacy to provide this information, which leaves peers, media and siblings as necessary and preferred sources of SRHR information [121]. Mothers in this study were also highlighted as the main sources of SRHR information. This finding is consistent with Coast et al. confirming in a scoping review that mothers provided information to adolescents, including the younger ones (13-16 years) in Low- and Middle-income countries (LMICs) [310]. However, Onyeonoro et al. found that families and schools were not the main sources of sexuality education for in-school adolescent girls in East Nigeria [120].

Schoolteachers were also the main sources of SRHR information, consistent with another study by Deshmukh et al. [191]. A study conducted with youths (10-24 years) in Rwanda highlighted schoolteachers as the main sources of SRHR information [355]. Furthermore, Bankole et al. found that early adolescents in Malawi and Uganda have schools and friends among the leading sources of SRHR information [64]. Essop et al. reported that teachers are the common information sources for early adolescents in rural Mpumalanga, South Africa [122]. Media sources such as TV, radio and the Internet were less common sources of information for early adolescents in this study. Still, this finding contrasts with Bankole et al., who found that mass media was a common source for early adolescents in Burkina Faso and Ghana [64]. Similarly, Onyeonoro et al. also found that media was a primary source of sexual information for adolescents aged 10-18 years in South East Nigeria [120]. Media was also important SRHR information for early adolescents in Uganda [75]. The Internet is a source of information for many adolescents because of the vast amount of

information on SRHR, and it uses images to reflect on some important aspects, including sexually transmitted diseases [129]. Nevertheless, Nwagwu indicates that the Internet was not the prime source of reproductive health information for in-school adolescent girls in Nigeria [34].

Concerning the participants' preferences, early adolescents in this study preferred receiving SHRH information on puberty mainly from their brothers, mothers and schoolteachers (respectively) and information on reproduction mainly from their mothers and schoolteachers. This finding highlights how early adolescents feel comfortable with these sources, particularly their mothers. The participants indicated they trust their parents and, therefore, cannot suffer harm from their parents. Another study highlighted that adolescents in Rwanda feel comfortable discussing sex issues with their mothers [355]. Furthermore, adolescents in another study feel more comfortable with informal sources, including their mothers [63]. Participants in the current study noted that they prefer their mothers because they tell them the truth, are available to talk to them and feel no shame talking with their mothers. However, qualitative findings in the current study noted that either parent can provide early adolescents with SRHR information. Furthermore, the literature is inconsistent about these preferences, and Cost et al. found that girls do not prefer their mothers as sources of information on menstruation in LMICs [310]. However, other studies indicate that mothers are the preferred sources of SRHR information.

Participants also had justifications for preferring professional sources such as school-based (schoolteachers) and health facility-based sources (doctors/nurses). Doctors/nurses were associated with delivering greater knowledge than other sources, including media, peers and sexual partners [76]. Furthermore, Whitfield et al. note that adolescents prefer school-based sources [63] because the school setting offers a more conducive environment to discuss SRHR with adequate/qualified personnel, time, resources and opportunities. Lagus et al. also believe that teachers are a preferred source of sexual information for young people [125]. Furthermore, participants preferred the health facility-based sources (doctor/nurse) because of their expertise in caring for adolescents and specific code of conduct, including confidentiality and a significant amount of information compared to other sources. Trust in these sources of SRHR information has also been expressed in research conducted by Kennedy et al. [128]. Adolescents also preferred school and health facility-based sources in a study conducted by Khurana et al. [76]

This study highlighted gender and age differences in current sources of SRHR information. Schoolteachers, fathers, and brothers were the main sources for male participants, while mothers, sisters, and other family members were the main sources of information about puberty. Furthermore, male participants preferred schoolteachers, brothers, films/videos, internet and TV as sources of information about puberty. In contrast, female participants preferred their mothers, sisters, and other family members as their sources of information about puberty. Regarding reproduction, schoolteachers and fathers were the primary and preferred sources of information for male participants. Male participants also preferred films/videos and internet sources of information about reproduction.

On the other hand, female participants had mothers and sisters as their primary sources of information about reproduction, and these sources were the preferred ones in addition to other family members. Literature highlights gender and age differences in current and preferred sources of SRHR information [78]. In this study, female participants noted preferring their mothers and female school teachers because of similar biological characteristics and, therefore, similar experiences. On this note, Baheiraei et al. found that adolescents prefer same-sex friends as their sources of health information [78]. Furthermore, younger adolescents prefer parents, while older adolescents prefer friends as sources of information about their health concerns [78, 129]. On the other hand, boys in this study noted preferring their fathers because they can provide information on important life events they have experienced, such as wet dreams, coerced sex and its consequences.

Justifications for preferring media sources (TV, radio, Internet) were also provided, and these include the use of both hearing and sight (TV), reaching a wider audience (radio), and having all their questions answered on the Internet. For example, the main reason for using media, specifically the internet, in Kenya is to use sound and images to illustrate some aspects of SRHR, including sexually transmitted diseases [129]. Furthermore, adolescents may use internet sources to complement other sources to compensate for gaps from other SRHR informational sources [129, 385]

Influence of SRHR Sources on participants' SRHR knowledge, attitudes and behaviours

Despite early adolescents' preferences about obtaining SRHR information, some of these sources may positively or negatively affect their SRHR knowledge, beliefs, and behaviours. Overall, this

study also found that some sources of SRHR information contributed more to shaping early adolescents' knowledge and attitudes. Quantitative findings showed that participants who had their mothers as sources of information on puberty exhibited higher knowledge of sexuality. Furthermore, this study found that doctors/nurses contributed more to the modern contraceptive knowledge level of participants and that, on this topic, fathers were associated with less knowledge. Concerning HIV/AIDS and STDs knowledge, books/magazines and radio were associated with a higher level of knowledge about puberty than did other sources of information. In addition, schoolteachers shaped more participants' attitudes towards gender and sexual norms than other sources. Concerning the participants' knowledge about reproduction, radio was associated with higher scores on participants' knowledge about sexuality and HIV/AIDS & STDS. In contrast, books/magazines were associated with higher scores on HIV/AIDS and other STDS only. In contrast, fathers were associated with less knowledge about condoms. Qualitative findings showed how each source (parents, schoolteachers, doctor/nurse, siblings, television, radio, internet and church) affects participants' sexual knowledge, beliefs or behaviours.

It is very important to be aware of the effects of these different sources of sexual information on early adolescents' knowledge, beliefs and behaviours to identify which sources impact positively (or negatively) their sexual health. On this note, Bleakley et al. found that some sources of information for older adolescents (parents, grandparents, religious leaders) were associated with delaying sex. In contrast, other sources such as friends, cousins and media increased the likelihood of having sexual intercourse [386]. Research indicates that parents as a source of sexual information associated with an increase in condom and contraceptive use and positive attitudes towards condom use, sexual intentions and behaviours [133, 373]. However, other studies associate parents with sexual behaviours, probably because communication with parents occurs after sexual initiation [133]. Furthermore, research from Bleakley et al. indicates that exposure to sexual content from media is associated with increased sexual activity, early sexual initiation and unplanned pregnancy [131]. Onyeonoro et al. also found that media had a role to play in the sexual exposure of in-school girls and their sexual behaviours [120]. Kemigisha et al. also point out that media plays a role in providing inappropriate sexual information to early adolescents in Uganda [75]. Learning from peers also may affect adolescents' positive behavioural beliefs about having sex and higher frequency of peers engaging in risky sexual behaviours, which results in performing risky sexual behaviours [133]. Concerning SRHR knowledge, Kyilleh et al. indicate that some

sources may be associated with misinformation [123]. In addition, professional sources such as doctors/nurses have been associated with greater knowledge about contraceptive use and efficacy [76]. The use of the internet to look for sexuality-related information was associated with a decrease in the risk of poor sexuality knowledge [387]. However, AlQuaiz et al. indicate that the internet is a risk factor for poor sexual knowledge and appears to be harmful to young adolescents because of the lack of explanation for better understanding [132].

11.4.7 Challenges and strategies to develop culturally and age-appropriate SRHR intervention

Good quality CSE is age- and developmentally- and culturally relevant and context-appropriate. Developing culturally and age-appropriate SRHR interventions for early adolescents presents various challenges. The first challenge is cultural sensitivity and variability. Culture has been reported in research as a challenge to delivering sexuality education [388-390]. A strategy to address cultural challenges may involve conducting assessments and community consultations to understand specific attitudes, values, and concerns related to sexuality. This would require engaging local leaders, community members, and cultural mediators to ensure the intervention aligns with the cultural context [138]. Religious beliefs have also been highlighted as challenges to appropriate sex education [100, 138]. A strategy to overcome religious challenges may involve framing CSE intervention regarding public health, human rights, and safety rather than promoting particular moral or lifestyle choices. Another challenge is the stigma and taboos around sexuality [388], where discussions on sexuality, especially among young people, are viewed as taboo [389, 391]. A strategy to overcome this stigma might involve normalising conversations on sexuality by framing them in terms of health, well-being, and empowerment. Using non-threatening language and approaches (e.g., focusing on health outcomes, family planning, or reproductive health) might mitigate cultural resistance. In addition, age is a challenge that reflects different needs, and many people are left out [391]. Age groups require distinct approaches to sexuality education and intervention. Younger children need basic information on body awareness and safety, while adolescents require more in-depth discussions on consent, relationships, and reproductive health. Tailoring content to developmental stages can be challenging. A strategy to align sexuality education to age is to organise its content by the age of the learners and define specific teaching methods to impart this content. There is guidance on what to teach at what ages, including the

International Technical Guidance on Sexuality Education [145], the “Standards for Sexuality Education in Europe”[146] and the one provided by the Rwanda Education Board in Rwanda [180, 392]. Furthermore, research highlights parental and community resistance as challenges to developing adolescent SRHR interventions [100]. They oppose the teaching of some topics and believe that some adolescents are too young to discuss sexual matters and that SRHR information may induce adolescents into sexual behaviours [100]. Therefore, interventions should involve parents and community members early in the process. Parents should be provided with clear information about the objectives and content of the intervention and demonstrate how the program fosters healthy development rather than promoting sexual activity. Offering parent education workshops and informational sessions can help ease concerns. Furthermore, technological and resource barriers challenge the development of SRHR intervention [389]. Access to resources such as textbooks, trained professionals, or digital technology may be limited, which affects the development, implementation and effectiveness of sexuality interventions. A strategy to overcome this challenge may involve using low-cost, community-based methods such as peer education, printed materials, or radio programs when resources are scarce. When technology is accessible, use interactive platforms like mobile apps or online workshops for engagement, particularly for adolescent populations. Finally, legal and policy restrictions have been included as challenges to developing SRHR interventions for adolescents by enabling or hampering information delivery [138, 286, 389-391]. A strategy to address this challenge may consist of revisiting legal frameworks to provide evidence-based education that promotes adolescent sexual and reproductive health and rights. Where possible, advocate for policy change by highlighting the importance of comprehensive sexuality education in reducing unintended pregnancies, sexually transmitted infections (STIs), and sexual violence.

11.5 STRENGTHS AND LIMITATIONS OF THE RESEARCH

SRHR policy and laws

The desk review focused on the content of policy documents, not on how the policy provisions are implemented. Therefore, there might be differences in policy content and its implementation because this review does not assess the implementation of this gender and sexuality policy. In addition, the review was conducted from 2008 to 2018, and therefore, we might have missed some other vital documents arising after the year 2018 or might not have exhausted eligible documents. Despite such limitations, this review provides a policy situation of early adolescents' SRHR in Rwanda, especially regarding gender and sexuality issues for this age group.

Perceived determinants of access to SRHR information

The results could have been enriched by perspectives from various additional participants, including young adolescents' parents, healthcare providers and schoolteachers; hence the limited generalisation of the findings. Furthermore, this research relies solely on the SRHR stakeholders' perspectives collected using a qualitative approach. Quantitative studies are important to ascertain the importance of each discussed factor in supporting or hindering access to SRHR information among young adolescents. Despite these limitations, the study gives insights from a broader perspective on the factors influencing access to SRHR information among young adolescents in Rwanda.

Content of SRHR messages

Concerning the content of messages conveyed to early adolescents, this research does not claim to have exhausted the analysis of all topics covered by comprehensive sexuality education as reflected in the competence-based curriculum in Rwanda. It focused only on the competence-based curriculum published by the Rwanda Education Board, the only institution mandated to develop and distribute curricula documents to Rwandan public schools. Private international schools' curricula were not included in this study. Despite this limitation, this study provides an overview of the scope of the CSE programme for early adolescents for safe sexual and reproductive health and the extent to which the competence-based curriculum aligns with international guidelines on sexuality education. Further studies would assess the quality and challenges of implementing CSE

among early adolescents. There is also a need to extend this study to early out-of-school adolescents.

Furthermore, this review was limited to the curriculum designed for public schools, although some private schools use the same curriculum. Future research would also aim to understand how private schools using other international curricula in Rwanda meet the education needs of early adolescents regarding CSE coverage, which would provide additional findings to reflect on the overall content of CSE for early adolescents in general. Finally, there is a need to understand how implementing the Rwandan competence-based curriculum influences learning about CSE for early adolescents. Specifically, studies should assess whether CSE competences described in the curriculum correspond to what early adolescents learn in their schools or represent their actual CSE competences and what factors influence the implementation of the CSE curriculum in Rwanda.

SRHR knowledge, beliefs, behaviours and sexual experience

This study has some limitations. One of them is the use of cross-sectional data to conclude causality. Another limitation of this study is the generalizability of the findings to participants from secondary schools under the international curricula in Rwanda. However, the selected number of participants was representative of the study population and their data provided insights into the SRHR knowledge, beliefs, behaviours and sexual experience of early adolescents. In addition, the findings were obtained based on participants' self-reports about sexuality, which might have been affected by social desirability (underreporting for girls and over-reporting for boys), especially when reporting sexual experiences [77, 192]. We minimised this limitation through privacy and voluntary participation. Finally, there is the possibility of recall bias because participants had to remember and report about their sexual health. Despite the limitations, this research contributes to the existing body of knowledge by providing an in-depth description of the factors associated with early adolescents' SRHR knowledge, attitudes and sexual experience in Sub-Saharan Africa, specifically Rwanda. The study enriches the body of literature and provides baseline information for SRHR intervention to improve sexual health for early adolescents in Rwanda and elsewhere.

Furthermore, this research provides an overview of sexual behaviours and health outcomes among early adolescents, a group of the population that is frequently thought to be sexually inactive. As expected, in a quantitative survey, a minority of the study participants yielded sexual behaviours;

therefore, these results should be interpreted cautiously. However, qualitative findings allowed us to explore how participants benefitted from SRHR knowledge gained.

Sources of SRHR information

Qualitative and quantitative methods were used to enrich the findings, and this study provided an overview of current and preferred sources of SRHR information for early adolescents and how these sources influence their gender and sexuality knowledge beliefs and behaviours in four Districts of Rwanda. However, the study design used may not fully contribute to showcasing the influence of SRHR sources on early adolescents' sexual knowledge, beliefs and behaviours and mitigate the consequences resulting from the sources with negative impact. Other study designs, such as randomised clinical trials, may contribute more to showcasing these influences among the studied age group.

Other strengths of this research include disseminating findings in various international conferences. In 2021, findings from this research were disseminated during the Consortium for Advanced Research Training in Africa (CARTA) eighth Annual Joint Advanced Seminars (JAS4) Conference held virtually on 23 September 2021. In 2022, findings from this research were disseminated and discussed in Kigali on October 5-7th, 2022, during an international conference organised by the Centre for International Reproductive Health Training at the University of Michigan. In addition, part of the findings were presented and discussed during the Wits Research Day organised in Johannesburg on September 14-15th, 2023. In addition, Finally, two publications emerged from this research. These papers were published in international peer-reviewed journals, namely BMC Public Health, and one manuscript is under review in PLOS ONE.

CHAPTER 12

CONCLUSION AND RECOMMENDATIONS

12.1 INTRODUCTION

The current chapter provides a conclusion on this research. It also highlights recommendations for policy and practice.

12.2 CONCLUSION

This research focused on early adolescents' knowledge, beliefs and behaviours regarding gender and sexuality and analysed how these are associated with sexual experiences and health outcomes in Rwanda. The research adopted a pragmatic approach and used an exploratory mixed-method design to achieve this aim. Through this combination of research approaches, the study demonstrates, from the beginning, the pathways through which adolescent sexual and reproductive health and rights were brought to the international and national public health and developmental agenda. It explores the extent to which gender and sexuality policies and programmes in Rwanda cater for the specific and different sexual and reproductive health and rights needs of early adolescents about which they need to make informed decisions. The study highlights some barriers to accessing SRHR information for this age group. In addition, in light of international guidelines, this research analysed the topics covered during gender and sexuality education of early adolescents in Rwanda and identified that comprehensive sexuality education (CSE) for this age group needs to accommodate some other topics not adequately addressed by the CSE curriculum. Since knowledge and attitudes are determinants of SRHR behaviours, the research also assessed SRHR knowledge, beliefs, behaviours, sexual experiences and health outcomes of early adolescents. The overall findings for this were that early adolescents lack adequate SRHR knowledge and attitudes and that early adolescents have started engaging in non-penetrative and penetrative sexual activity, with gender differences in findings. The research highlighted the role of social-ecological factors in the sexual experience of early adolescents. Girls reported no lifetime pregnancy, but few boys indicated involvement in pregnancy. Early adolescents describe how the SRHR knowledge acquired from various sources influences their sexual and reproductive health and rights, sexual experiences and health outcomes. The study further indicated that sources of SRHR information for boys and girls differ. This research indicated that to achieve global and national developmental targets, early adolescents are not sexually naïve and raised the need for

adequate SRHR policies and programmes to address their particular and different needs as compared to older adolescents.

12.3 RECOMMENDATIONS FOR POLICY AND PRACTICE

Given the social-ecological environment of adolescent sexual and reproductive health and rights, most of the recommendations from this research require a multi-sectoral approach to be achieved and, therefore, concern multiple institutions/organisations and require collaboration between these institutions. First, gender and sexuality policies should dedicate specific lines about promoting sexual and reproductive health and rights during early adolescence, given that SRHR needs for this period are different from those in late adolescence. In addition, people from multiple layers of the population should be involved in gender and sexuality policy-making to increase the relevance of SRHR policies. Specifically, early adolescents should be involved in policy-making processes to make their voices heard and considered. Early adolescents should be counted and consulted when developing, implementing, monitoring and evaluating policies that intend to respond to their specific needs. In addition, the SRHR policy-making process should involve a wide range of stakeholders actively delivering SRHR information, mainly schoolteachers, family and community members, and those from the media sector. Furthermore, a multi-sectoral approach is needed to address social-ecological factors hindering access to SRHR information by early adolescents. Implementation of comprehensive sex education (CSE) should be enhanced, and particular focus should be put on embracing all recommended topics and aligning them with international sex education standards. Furthermore, SRHR education should aim to strengthen preferred sources of information and those that positively impact adolescents' knowledge, attitudes, and behaviours, including parents and schoolteachers. Healthcare providers should be trained to deliver services that attract early adolescents and that build trust in them. These sources should be trained to overcome CSE challenges, particularly those related to culture and religious beliefs. In addition, schools should involve healthcare providers in delivering CSE in school settings, which might increase trust and make these providers preferred to other sources. Similarly, having CSE instilled in other subjects has its challenges, and efforts should be made to overcome these challenges, especially by making CSE an independent and examined subject. Efforts should equally be undertaken to address the social-ecological factors associated with sexual experience, especially penetrative experience, which is associated with risks of sexually transmitted infections

and early pregnancy. Finally, effort should be made to monitor the quality of SRHR information for early adolescents and the sources of inadequate or low-quality information.

12.4 RECOMMENDATIONS FOR FUTURE RESEARCH

The following are recommendations for future research, which should focus on the following topics:

- Exploring how SRHR policies can value and integrate explicitly the specific needs of early adolescents;
- Extending the study to non-schooling early adolescents, those who are aged 10-11 and those that attend schools governed by international curricula in Rwanda because the current research did not cover these populations;
- Assessing how Faith-based Organizations (FBOs) can contribute more to imparting comprehensive SRHR knowledge among adolescents, specifically the very young ones;
- Assessing the effects of CSE on sexual and reproductive health behaviours and sexual experiences among early adolescents
- Understanding the challenges related to the implementation of CSE for early adolescents from a broader perspective of schoolteachers, healthcare providers, parents, policy-makers and other stakeholders;
- Explore approaches to imparting high-quality SRHR information among early adolescents and mitigating the effects of misinformation among this age group.
- Assessing the individual effects of SRHR sources on early adolescents' SRHR knowledge, attitudes and sexual well-being.

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APPENDICES

APPENDIX 1: DECLARATION BY STUDENT AND CO-AUTHORS' AGREEMENT FOR WRITE-UP WITH PUBLISHED ARTICLES

DECLARATION BY STUDENT AND CO-AUTHORS' AGREEMENT FOR WRITE-UP WITH PUBLISHED ARTICLES

Declaration: Student's contribution to article(s) and agreement of co-author(s)

I, Valens Mbarushimana, student number 1584607, declare that this Thesis/Dissertation/Research Report is my own work and that I contributed adequately towards research findings published in the article(s) stated below which are included in my Thesis/Dissertation/Research Report.

Signature of Student.....  Date.....22-10-2024

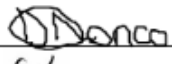
Name of Primary Supervisor.....Daphney Nozizwe Conco..

Signature of Primary Supervisor  Date.....2024 October 23.....

Agreement by co-authors: By signing this declaration, the co-authors listed below agree to the use of the article by the student as part of his/her Thesis/Dissertation/Research Report. In cases where the student is not the 1st author of a published article, the primary supervisor must explain (under comments) why the student is entitled to use the paper for his/her degree purposes.

Article 1: Title: *"Such conversations are not had in the families": a qualitative study of the determinants of young adolescents' access to sexual and reproductive health and rights information in Rwanda.*

Journal name, year, volume and page numbers: BMC Public Health, 2022, 22(1), 1-14, doi: 10.1186/s12889-022-14256-9

Authors	Name	Signature	Date
1 st Author	Valens Mbarushimana		22-10-2024
2 nd Author	Daphney Nozizwe Conco		2024 October 23
3 rd Author	Susan Goldstein		23-10-2024

Comments by primary supervisor:

.....

Article 2: Title: *"Not just the consequences, but also the pleasurable sex": a review of the content of comprehensive sexuality education for early adolescents in Rwanda.*

Journal name, year, volume and page numbers: BMC Public Health, 2023, 23, 1-14, doi: 10.1186/s12889-022-14966-0

Authors	Name	Signature	Date
1 st Author	Valens Mbarushimana		22-10-2024
2 nd Author	Susan Goldstein		23-10-2024
3 rd Author	Daphney Nozizwe Conco		2024 October 23

Comments by primary supervisor:

Article 3: Title: *Sexual experiences among early adolescents aged 12-14 Years in four districts of Rwanda: a cross-sectional study*

Journal name, year, volume and page numbers: *PLOS ONE, 2024, under review*

Authors	Name	Signature	Date
1 st Author	Valens Mbarushimana		22-10-2024
2 nd Author	Susan Goldstein		23-10-2024
3 rd Author	Daphney Nozizwe Conco		2024 October 23

Comments by primary supervisor:

APPENDIX 2: ETHICAL APPROVAL – UNIVERSITY OF RWANDA



COLLEGE OF MEDICINE AND HEALTH SCIENCES

CMHS INSTITUTIONAL REVIEW BOARD (IRB)

Kigali, 31st /12/2018

Valens Mbarushimana,
University of the Witwatersrand

Approval Notice: No 401/CMHS IRB/2018

Your Project Title *“Early Adolescents’ Knowledge, Beliefs and Behaviors Regarding Gender and Sexuality in Rwanda: Implications for Their Sexual Experiences and Health Outcomes.”* has been evaluated by CMHS Institutional Review Board.

Name of Members	Institute	Involved in the decision		
		Yes	No (Reason)	
			Absent	Withdrawn from the proceeding
Prof Kato J. Njunwa	UR-CMHS	X		
Prof Jean Bosco Gahutu	UR-CMHS	X		
Dr Brenda Asimwe-Kateera	UR-CMHS	X		
Prof Ntaganira Joseph	UR-CMHS	X		
Dr Tumusiime K. David	UR-CMHS	X		
Dr Kayonga N. Egide	UR-CMHS	X		
Mr Kanyoni Maurice	UR-CMHS	X		
Prof Munyanshongore Cyprien	UR-CMHS	X		
Mrs Ruzindana Landrine	Kicukiro district		X	
Dr Gishoma Darius	UR-CMHS	X		
Dr Donatilla Mukamana	UR-CMHS	X		
Prof Kyamanywa Patrick	UR-CMHS		X	
Prof Condo Umutesi Jeannine	UR-CMHS		X	
Prof Nyirazinyoye Laetitia	UR-CMHS	X		
Dr Nkeramihigo Emmanuel	UR-CMHS		X	
Sr Maliboli Marie Josce	CHUK	X		
Dr Mudenge Charles	Centre Psycho-Social	X		

After reviewing your protocol during the IRB meeting of where quorum was met and revisions made on the advice of the CMHS IRB submitted on 31st December 2018, **Approval has been granted to your study.**

Please note that approval of the protocol and consent form is valid for **12 months**.

You are responsible for fulfilling the following requirements:

1. Changes, amendments, and addenda to the protocol or consent form must be submitted to the committee for review and approval, prior to activation of the changes.
2. Only approved consent forms are to be used in the enrolment of participants.
3. All consent forms signed by subjects should be retained on file. The IRB may conduct audits of all study records, and consent documentation may be part of such audits.
4. A continuing review application must be submitted to the IRB in a timely fashion and before expiry of this approval
5. Failure to submit a continuing review application will result in termination of the study
6. Notify the IRB committee once the study is finished

Sincerely,



Professor GAHUTU Jean Bosco
Chairperson Institutional Review Board,
College of Medicine and Health Sciences, UR

Date of Approval: The 31st December 2018

Expiration date: The 31st December 2019

Cc:

- Principal College of Medicine and Health Sciences, UR
- University Director of Research and Postgraduate Studies, UR

APPENDIX 3: RENEWAL OF IRB ETHICAL APPROVAL



UNIVERSITY of
RWANDA

COLLEGE OF MEDICINE AND HEALTH SCIENCES
DIRECTORATE OF RESEARCH & INNOVATION

CMHS INSTITUTIONAL REVIEW BOARD (IRB)

Kigali, 20th/December/2019

Valens MBARUSHIMANA
University of the Witwatersrand

Notice of Renewal of Approval for Research Project: No 543 /CMHS IRB/2019

Your Project Title *“Early Adolescents’ Knowledge, Beliefs and Behaviors Regarding Gender and Sexuality in Rwanda: Implications for Their Sexual Experiences and Health Outcomes”* has been evaluated by CMHS Institutional Review Board.

Name of Members	Institute	Involved in the decision		
		Yes	No (Reason)	
			Absent	Withdrawn from the proceeding
Prof Kato J. Njunwa	UR-CMHS		X	
Prof Jean Bosco Gahutu	UR-CMHS	X		
Dr Brenda Asimwe-Kateera	UR-CMHS	X		
Prof Ntaganira Joseph	UR-CMHS	X		
Dr Tumusiime K. David	UR-CMHS	X		
Dr Kayonga N. Egide	UR-CMHS	X		
Mr Kanyoni Maurice	UR-CMHS		X	
Prof Munyanshonger Cyprien	UR-CMHS	X		
Mrs Ruzindana Landrine	Kicukiro district		X	
Dr Gishoma Darius	UR-CMHS	X		
Dr Donatilla Mukamana	UR-CMHS	X		
Prof Kyamanywa Patrick	UR-CMHS		X	
Prof Condo Umutesi Jeannine	UR-CMHS		X	
Dr Nyirazinyoye Laetitia	UR-CMHS	X		
Dr Nkeramihigo Emmanuel	UR-CMHS		X	
Sr Maliboli Marie Josee	CHUK	X		
Dr Mudenge Charles	Centre Psycho-Social	X		

After reviewing your protocol, **Continuation of Approval has been granted to your study.**

Please note that approval of the protocol and consent form is valid for **12 months**.

Email: researchcenter@ur.ac.rw

P.O Box 3286 Kigali, Rwanda

www.ur.ac.rw

You are responsible for fulfilling the following requirements:

1. Changes, amendments, and addenda to the protocol or consent form must be submitted to the committee for review and approval, prior to activation of the changes.
2. Only approved consent forms are to be used in the enrolment of participants.
3. All consent forms signed by subjects should be retained on file. The IRB may conduct audits of all study records, and consent documentation may be part of such audits.
4. A continuing review application must be submitted to the IRB in a timely fashion and before expiry of this approval
5. Failure to submit a continuing review application will result in termination of the study
6. Notify the IRB committee once the study is finished

Sincerely,

Date of Approval: The 20th December 2019

Expiration date: The 20th December 2020



Professor GAHUTU Jean Bosco
Chairperson Institutional Review Board
College of Medicine and Health Sciences, UR

Cc:

- Principal College of Medicine and Health Sciences, UR
- University Director of Research and Postgraduate Studies, UR

APPENDIX 4: RECOMMENDATION FOR ETHICAL APPROVAL



Faculty of Health Sciences, 27 St Andrew's Road, Parktown 2193; Johannesburg; South Africa T +27 (0) 11 717 2502 www.wits.ac.za/publichealth

06 December 2018

Chairperson of Institutional Review Board
College of Medicine and Health Sciences
University of Rwanda
Kigali
Rwanda

**RE: RECOMMENDATION FOR ETHICAL APPROVAL OF MR. VALENS
MBARUSHIMANA'S RESEARCH PROTOCOL BY INSTITUTIONAL REVIEW BOARD**

Mr. Valens Mbarushimana is a PhD candidate at the University of the Witwatersrand School of Public Health. He is supervised by Dr Daphney Nozizwe Conco and Dr Sue Goldstein. His research topic is *Early adolescents' knowledge, beliefs and behaviors regarding gender and sexuality in Rwanda: implications for their sexual experiences and health outcomes*.

The University of the Witwatersrand Faculty of Health requires an ethical approval by the candidate's home institution before the protocol can be reviewed for approval by the Wits Health Research Ethics Committee.

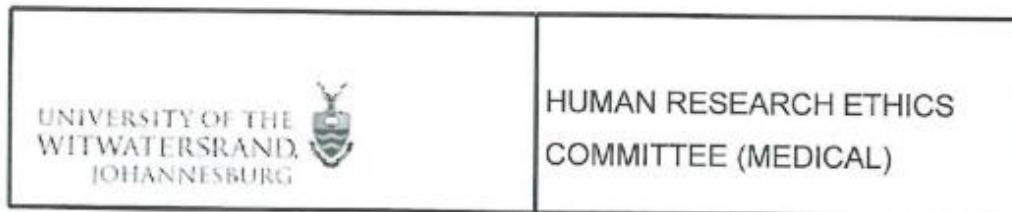
This recommendation letter serves as an appeal to the chairperson, to review Mr Valens research protocol and consider granting an ethical clearance certificate from the Institutional Review Board of the University of Rwanda. Your kind consideration of the letter will be highly appreciated.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Daphney'.

Dr Daphney Nozizwe Conco
Senior Lecturer
Daphney.Conco@wits.ac.za

APPENDIX 5: ETHICAL APPROVAL FOR PHASE 1–UNIVERSITY OF THE WITWATERSRAND



Office of the Deputy Vice-Chancellor (Research & Post Graduate Affairs)

TO: Mr V Mbarushimana
School of Public Health
Medical School
University

E-mail: 1584607@students.wits.ac.za

CC: Supervisor: Dr D Conco and Professor S Goldstein
<Daphney.Conco@wits.ac.za>
and <HREC-Medical.ResearchOffice@wits.ac.za>

FROM: Iain Burns
Human Research Ethics Committee (Medical)
Tel: 011 717 1252

E-mail: Iain.Burns@wits.ac.za

DATE: 2019/06/07

REF: R14/49

PROTOCOL NO: M190303 *(This is your ethics application study reference number. Please quote this reference number in all correspondence relating to this study)*

PROJECT TITLE: *Early adolescents' knowledge beliefs and behaviours regarding gender and sexuality in Rwanda: implications for their sexual experiences and health outcomes*

Please find attached the Clearance Certificate for the above project. I hope it goes well and that an article in a recognized publication comes out of it. This will reflect well on your professional standing and contribute to the Government funding of the University.



MSWorks2000/Iain0007/Clearscan.wps

R14/49 Mr V Mbarushimana

**HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
CLEARANCE CERTIFICATE NO. M190303**

NAME:
(Principal Investigator)
DEPARTMENT:

Mr V Mbarushimana
School of Public Health
Medical School
University

PROJECT TITLE:

Early adolescents' knowledge beliefs and behaviours
regarding gender and sexuality in Rwanda: implications
for their sexual experiences and health outcomes

DATE CONSIDERED:

29/03/2019

DECISION:

Approved Conditionally

CONDITIONS:

This clearance applies to Phase 1 of the study only

SUPERVISOR:

Dr D Conco and Professor S Goldstein

APPROVED BY:


Dr CB Penny, Chairperson, HREC (Medical)

DATE OF APPROVAL:

2019/06/07

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and ONE COPY returned to the Research Office Secretary on the 3rd Floor, Phillip Tobias Building, Parktown, University of the Witwatersrand, Johannesburg.

I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated, from the research protocol as approved, I/we undertake to submit details to the Committee. I agree to submit a yearly progress report. When a funder requires annual re-certification, the application date will be one year after the date when the study was initially reviewed. In this case, the study was initially reviewed in March and will therefore reports and re-certification will be due early in the month of March each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical).

Principal Investigator Signature

Date

APPENDIX 6: ETHICAL APPROVAL FOR PHASE 2-UNIVERSITY OF THE WITWATERSRAND



R14/49 Mr Valens Mbarushimana et al

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M190303

NAME: Mr Valens Mbarushimana et al
(Principal Investigator)
DEPARTMENT: School of Public Health
16 Secondary School, Rwanda

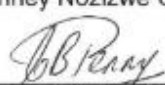
PROJECT TITLE: Early adolescent' knowledge, beliefs and behaviours regarding gender and sexuality in Rwanda: implications for their sexual experiences and health outcomes

DATE CONSIDERED: Ad hoc

DECISION: Approved unconditionally

CONDITIONS: Phase 2

SUPERVISOR: Dr Daphney Nozizwe Conco

APPROVED BY: 
Dr C Penny, Chairperson, HREC (Medical)

DATE OF APPROVAL: 03/12/2019

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office Secretary in Room 301, Third floor, Faculty of Health Sciences, Phillip Tobias Building, 29 Princess of Wales Terrace, Parktown, 2193, University of the Witwatersrand. I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated, from the research protocol as approved, I/we undertake to resubmit the application to the Committee. **I agree to submit a yearly progress report** The date for annual re-certification will be one year after the date of convened meeting where the study was initially reviewed. In this case, the study was initially reviewed March and will therefore be due in the month of March each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical).

Principal Investigator Signature

Date

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

APPENDIX 7: APPROVAL FOR INTERVIEW-MINISTRY OF EDUCATION

REPUBLIC OF RWANDA



Kigali, 27/08/2019

No. 2478/12.00/2019

MINISTRY OF EDUCATION
P.O BOX 622 KIGALI

Valens Mbarushimana, Lecturer
University of Rwanda;
PhD Candidate, University of the Witwatersrand;
Email: 1584607@students.wits.ac.za/mbavalens.gmail.com;
Mobile: +250788490718/0728490718

Dear Valens Mbarushimana,

Re: Recommendation for data collection in Education sector about Gender and sexuality of early adolescent

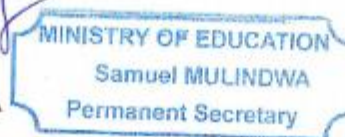
Reference is made to your letter of 27th June, 2019 requesting for interviewing some staff of the Ministry of Education (MINEDUC) in your research on Gender and sexuality of early adolescent.

Considering the relevancy of your PhD research entitled "*Early Adolescents' Knowledge, Beliefs and Behaviors Regarding Gender and Sexuality in Rwanda: Implications for Their Sexual Experiences and Health outcomes*".

I am pleased to inform you that your request has been approved. Therefore, you are allowed to contact the expected potential respondents in order to fill in your questionnaire which is attached herewith.

Thank you for your contribution in research in Rwanda.


Dr. Eugene MUTIMURA
Minister of Education


MINISTRY OF EDUCATION
Samuel MULINDWA
Permanent Secretary



Cc:

- Hon. Minister of State for Primary and Secondary Education
- Permanent Secretary/MINEDUC

APPENDIX 8: APPROVAL FOR INTERVIEW-RWANDA BIOMEDICAL CENTRE



A Healthy People. A Wealthy Nation

Kigali on,
Ref: No...../RBC/2019

01 NOV 2019

1925

Director General's Office

Mr. Valens MBARUSHIMANA
University of Witwatersrand
Johannesburg, South Africa
C/o University of Rwanda

Re: Response to your request to conduct an interview

Dear Principal Investigator,

The reference is made to your request to conduct an interview to the RBC staff for your PhD project entitled *“Early adolescents’ knowledge, beliefs and behaviors regarding gender and sexuality in Rwanda: implication for their sexual experiences and health outcomes”*.

Recognising the importance of conducting this study to the institution and scientific community; Rwanda Biomedical Center leadership supports your project and I would like to inform you that you are allowed to hold an individual interview with RBC staff.

Kindly contact the Manager of Maternal, Child and Community Health Division in RBC for linkage with the appropriate respondent; and Medical Research Center for further assistance.

Sincerely,

Dr Sabin NSANZIMANA
Director General

CC:

- **Manager of Maternal Child and Community Health Division, RBC**

www.rbc.gov.rw / info@rbc.gov.rw / KG 17 Ave, PO Box : 7162 , Kigali - Rwanda

APPENDIX 9: RESEARCH PERMIT-NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY



NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY (NCST)
 Grand Pension Plaza, 13th Floor, KN 2 Roundabout, Kigali
 PO Box: 2285 Kigali – Rwanda
 E-MAIL: info@ncst.gov.rw ,WEBSITE: www.ncst.gov.rw

PERMISSION TO CONDUCT RESEARCH IN RWANDA	
N° NCST/482/136 / 2019	
I, the undersigned, hereby grant the researcher (s) in Section I permission to conduct research in Rwanda. This permission only covers research activities related to the provided research title, during the specified period and at specified location (s) in Section II of this form.	
Section I: Personal Information	
1. Family Name: Mbarushimana	Other Names: Valens
2. Academic Qualification (Highest degree): MS, MA	
3. Home Institution: University of the Witwatersrand Occupation: PhD Candidate	
4. Phone Number (in Rwanda): 0788490718	
5. Email: 1584607@students.wits.ac.za	
6. Primary Research Supervisor:	
a. Names: Dr Daphney Nozizwe Conco	
b. Institution: Uni. of the Witwatersrand Occupation: Senior Lecturer	
c. Phone Number: +27 83 282 4320	
d. Email: daphney.conco@wits.ac.za	
7. Research Collaborators:	
Names	Institution
1	
2	
3	
4	



Section II: Research Information

1. Research Area: **Health Sciences**
2. Research Title: **Early adolescents' knowledge beliefs and behaviours regarding gender and sexuality in Rwanda: implications for their sexual experiences and health outcomes.**
3. Affiliating Rwandan Institution: **UR - CMHS**
4. Rwandan Supervisor:
 - a. Names: **Prof. Laetitia Nyirazinyoye**
 - b. Occupation: **Professor**
 - c. Phone Number: **078868309**
 - d. Email: **Inyirazi@nursph.org**
5. Fieldwork Location:
16 Secondary schools from Nyarugenge, Gasabo, Ruhango and Rwamagana Districts.
6. Research Period:
 - a. From: **August 5, 2019**
 - b. To: **August 4, 2020**

Section III: Other Important Notes

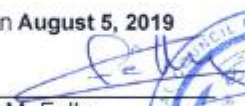
1. The researcher will seek appropriate permission from concerned institutions before beginning field work.
2. Participants under the age of 18 will only participate after their parents / guardians sign a consent form.

Section IV: Signature

This permission to conduct research in Rwanda is issued in accordance with Ministerial Instructions 003/2010 of 09/12/2010 regulating research activities in Rwanda.

Kigali, on **August 5, 2019**

NCST Ref:/NCST.2019


KALISA M. Felly

Ag. Executive Secretary



APPENDIX 10: APPROVAL OF A TITLE



Private Bag 3 Wits, 2050
Fax: 027117172119
Tel: 02711 7172076

Reference: Mrs Sandra Benn
E-mail: sandra.benn@wits.ac.za

11 April 2019
Person No: 1584607
PAG

Mr V Mbarushimana
Kamonyi District, Southern Province-rwanda
Runda Sector
3286
Rwanda

Dear Mr Valens Mbarushimana

Doctor of Philosophy: Approval of Title

We have pleasure in advising that your proposal entitled *Early adolescents' knowledge, beliefs and behaviors regarding gender and sexuality in Rwanda: implications for their sexual experiences and health outcomes* has been approved. Please note that any amendments to this title have to be endorsed by the Faculty's higher degrees committee and formally approved.

Yours sincerely

A handwritten signature in black ink, appearing to read 'S. Benn'.

Mrs Sandra Benn
Faculty Registrar
Faculty of Health Sciences

APPENDIX 11: APPLICATION FOR DATA COLLECTION IN GASABO DISTRICT

Mayor
Gasabo District
Kigali City
Rwanda



Date: 03/01/2019

Dear Sir,

RE: Request for the permission to collect data from students in lower level (O'Level) of secondary schools

I am a Lecturer at the School of Public Health, College of Medicine and Health Sciences, University of Rwanda. I am currently enrolled as a doctoral (PhD) student at the University of the Witwatersrand, Johannesburg, South Africa.

As part of my PhD studies, I would like to conduct a study entitled *Early adolescents' knowledge, beliefs and behaviors regarding gender and sexuality in Rwanda: implications for their sexual experiences and health outcomes*. The aim of this study is to describe the Rwandan early adolescent girls' and boys' knowledge, beliefs and behaviors related to gender and sexuality and analyze how these are associated with their behaviors, sexual experiences and health outcomes in the context of the multiple sources of communication they are exposed to.

The purpose of this letter is to request your authorization to collect data related to my research study from lower level (O'Level) students of secondary schools located in your District. If you grant the permission, female and male early adolescents will respond individually to a set of questions related to the study.

Find attached a copy of ethical approval of my research protocol by the Institutional Review Board of the University of Rwanda College of Medicine and Health Sciences.

Your permission to conduct the study will be highly appreciated.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Valens Mbarushimana', written over a horizontal line.

Valens Mbarushimana
Mobile: +250 788490718 | +250 728490718
Email: mbavalens@gmail.com | vmbarushimana@cartafrica.org

APPENDIX 12: APPLICATION FOR DATA COLLECTION IN NYARUGENGE DISTRICT

Date: 03/01/2019

Mayor
Nyarugenge District
Kigali City
Rwanda



Dear Madam,

RE: Request for the permission to collect data from students in lower level (O'Level) of secondary schools

I am a Lecturer at the School of Public Health, College of Medicine and Health Sciences, University of Rwanda. I am currently enrolled as a doctoral (PhD) student at the University of the Witwatersrand, Johannesburg, South Africa.

As part of my PhD studies, I would like to conduct a study entitled *Early adolescents' knowledge, beliefs and behaviors regarding gender and sexuality in Rwanda: implications for their sexual experiences and health outcomes*. The aim of this study is to describe the Rwandan early adolescent girls' and boys' knowledge, beliefs and behaviors related to gender and sexuality and analyze how these are associated with their behaviors, sexual experiences and health outcomes in the context of the multiple sources of communication they are exposed to.

The purpose of this letter is to request your authorization to collect data related to my research study from lower level (O'Level) students of secondary schools located in your District. If you grant the permission, female and male early adolescents will respond individually to a set of questions related to the study.

Find attached a copy of ethical approval of my research protocol by the Institutional Review Board of the University of Rwanda College of Medicine and Health Sciences.

Your permission to conduct the study will be highly appreciated.

Yours sincerely,

Valens Mbarushimana

Mobile: +250 788490718 | +250 728490718

Email: mbavalens@gmail.com | vmbarushimana@cartafrica.org

APPENDIX 13: APPLICATION FOR DATA COLLECTION IN RUHANGO DISTRICT

Date: 03/01/2019

Mayor
Ruhango District
Southern Province
Rwanda



Dear Sir,

RE: Request for the permission to collect data from students in lower level (O'Level) of secondary schools

I am a Lecturer at the School of Public Health, College of Medicine and Health Sciences, University of Rwanda. I am currently enrolled as a doctoral (PhD) student at the University of the Witwatersrand, Johannesburg, South Africa.

As part of my PhD studies, I would like to conduct a study entitled *Early adolescents' knowledge, beliefs and behaviors regarding gender and sexuality in Rwanda: implications for their sexual experiences and health outcomes*. The aim of this study is to describe the Rwandan early adolescent girls' and boys' knowledge, beliefs and behaviors related to gender and sexuality and analyze how these are associated with their behaviors, sexual experiences and health outcomes in the context of the multiple sources of communication they are exposed to.

The purpose of this letter is to request your authorization to collect data related to my research study from lower level (O'Level) students of secondary schools located in your District. If you grant the permission, female and male early adolescents will respond individually to a set of questions related to the study.

Find attached a copy of ethical approval of my research protocol by the Institutional Review Board of the University of Rwanda College of Medicine and Health Sciences.

Your permission to conduct the study will be highly appreciated.

Yours sincerely,

Valens Mbarushimana

Mobile: +250 788490718 | +250 728490718

Email: mbavalens@gmail.com | vmbarushimana@cartafrica.org

APPENDIX 14: APPLICATION FOR DATA COLLECTION IN RWAMAGANA DISTRICT

Mayor
Rwamagana District
Eastern Province
Rwanda



Date: 03/01/2019

Dear Sir,

RE: Request for the permission to collect data from students in lower level (O'Level) of secondary schools

I am a Lecturer at the School of Public Health, College of Medicine and Health Sciences, University of Rwanda. I am currently enrolled as a doctoral (PhD) student at the University of the Witwatersrand, Johannesburg, South Africa.

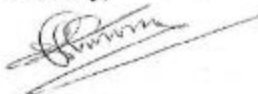
As part of my PhD studies, I would like to conduct a study entitled *Early adolescents' knowledge, beliefs and behaviors regarding gender and sexuality in Rwanda: implications for their sexual experiences and health outcomes*. The aim of this study is to describe the Rwandan early adolescent girls' and boys' knowledge, beliefs and behaviors related to gender and sexuality and analyze how these are associated with their behaviors, sexual experiences and health outcomes in the context of the multiple sources of communication they are exposed to.

The purpose of this letter is to request your authorization to collect data related to my research study from lower level (O'Level) students of secondary schools located in your District. If you grant the permission, female and male early adolescents will respond individually to a set of questions related to the study.

Find attached a copy of ethical approval of my research protocol by the Institutional Review Board of the University of Rwanda College of Medicine and Health Sciences.

Your permission to conduct the study will be highly appreciated.

Yours sincerely,



Valens Mbarushimana

Mobile: +250 788490718 | +250 728490718

Email: mbavalens@gmail.com | yvbarushimana@cartafrica.org

APPENDIX 15: APPROVAL OF DATA COLLECTION IN NYARUGENGE DISTRICT

REPUBLIC OF RWANDA

Kigali, 16/01/2019

Réf n° 0305/01.01/08



KIGALI CITY
NYARUGENGE DISTRICT

TO: MBARUSHIMANA Valens
TEL: 0788949071/0728490718

RE: Acceptance to conduct research in Nyarugenge District

This comes to inform you that you have been accepted to conduct research in Nyarugenge District as requested in your application letter. You will be collecting data in Nyarugenge District on your project entitled: **“Early adolescents’ knowledge, beliefs and behaviours regarding gender and sexuality in Rwanda: implications for their sexual experiences and health outcomes.”** This Research will be conducted not exceeding this year (2019).

You will be expected to have Maximum co-operation with the Employees as requested and to return the copy of your research to the District.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Fred Hategekimana', written over a circular official stamp.

HATEGEKIMANA Fred
Executive secretary of Nyarugenge District.



B.p1092 Kigali E-mail: info@nyarugengedistrict.gov.rw, web-site: www.nyarugenge.gov.rw

APPENDIX 16: RENEWAL OF APPROVAL OF DATA COLLECTION-NYARUGENGE DISTRICT

REPUBLIC OF RWANDA

Kigali on. 29/01/2020
Réf.N° 0537/01-01



KIGALI CITY
NYARUGENGE DISTRICT

Mr.MBARUSHIMANA Valens
Tel:0788490718

Re: Acceptance to collect data for your research

Dear sir,

Reference to your letter of December 17, 2019 requesting for authorisation to collect data for the remaining phases of your research entitled "Early adolescents' knowledge, beliefs and behaviors regarding gender and sexuality in Rwanda"

This serves to inform you that you are authorised to collect data for your research in Nyarugenge District as requested, in the year 2020.

Regards,


MUSAFIRI Leonidas
Acting, District Executive Secretary



Cc:
-Mayor of Nyarugenge District

APPENDIX 17: APPROVAL OF DATA COLLECTION IN GASABO DISTRICT

REPUBLIC OF RWANDA

Gasabo, 10/01/2019

Ref N° 042/070102/2019



**CITY OF KIGALI
GASABO DISTRICT**
WEBSITE: www.gasabo.gov.rw
E-mail: info@gasabo.gov.rw
BP. 7066 KIGALI

Dear Valens MBARUSHIMANA
University of Rwanda
Email: mbavalens@gmail.com

Subject: Response to your letter.

Dear Sir,

With reference to your letter requesting for the permission to carry out your research in Gasabo District on « Early adolescents' knowledge, beliefs and behaviors regarding gender and sexuality in Rwanda: implications for their sexual experiences and health outcomes >>;

I would like to inform you that the permission you requested for has been granted.

Sincerely,

INGABIRE Augustin
Executive Secretary of Gasabo District

NTAGANZWA J.M. Vianney
Director of H.R & Administration



APPENDIX 18: APPROVAL OF DATA COLLECTION IN RWAMAGANA DISTRICT

REPUBLIC OF RWANDA



ESTERN PROVINCE

RWAMAGANA DISTRICT

P.O BOX 24 RWAMAGANA

TO

Mr.Valens MBARUSHIMANA
A PhD Student

16th January, 2019

Dear,

RE: Response to your letter

Reference to your letter dated on 3th January; 2019 requesting for permission to collect data from students in lower level (O' Level) of Secondary schools in order enable you to conduct a study entitled *"Early adolescents' knowledge, believes and behaviors regarding gender and sexuality in Rwanda,*

I' am pleased to inform you that you are allowed to conduct the study stated above and hope you will share with us findings after the study completion.

We wish you all the best.

Done at Rwamagana on 16th January ,2019


MBONYUMUVUNYI Radjab
Mayor of Rwamagana Disriet.



N° 247/05.01

APPENDIX 19: APPROVAL OF DATA COLLECTION IN RUHANGO DISTRICT

REPUBLIC OF RWANDA



SOUTHERN PROVINCE
RUHANGO DISTRICT
P.O. Box 12 RUHANGO

Ruhango 16th January 2019

N^o *164*...0206/DR/06

To: Mr. Valens MBARUSHIMANA,

Re: Acceptance of data collection

Dear,

Reference made to your letter of 3rd January 2019 requesting authorization to collect data from students in lower level of Secondary Schools in Ruhango District;

I am pleased to let you know that the requesting authorization is approved and I wish you the success during your data collection.

Sincerely yours,


HABARUREMA Valens
Mayor of Ruhango District



DUKORANE UMURAVA DUTERE IMBERE
Website : www.ruhango.gov.rw
Email : ruhango@ruhango.gov.rw, Tel : 07 88 40 11 99

APPENDIX 20: QUESTIONNAIRE FOR QUANTITATIVE SURVEY (ENGLISH VERSION)

1 Individual, behavioural, family and socioeconomic characteristics

1.1 Sex of respondent	Male 01 Female 02	
1.2 Age of respondent (in years)	_____ years	
1.5 Type of school	Public 01 Private 02	
1.6 Level (year) of study	Senior 1 01 Senior 2 02	
1.7 What is your religion?	Catholic 01 Protestant 02 Muslim 03 Adventist 04 Jehovah Witness 05 None 06 Other..... 07 (SPECIFY)	1.7 →
1.8 How important is religion in your life?	Very important 1 Important 2 Not important 3	
Economic status		
1.9 What is the socio-economic (<i>Ubudehe</i>) category of your household?	Category 1 1 Category 2 2 Category 3 3 Category 4 4 Do not know 5	
Relationships		
1.10 Is your father alive?	Yes 1 No 2 →	1.11
1.11 Does your father live in the same household as you?	Yes 1 No 2	
1.12 Do you find it difficult or easy to talk with your father about things that are important to you?	Very easy 1 Easy 2 Average 3 Difficult 4 Very difficult 5 Do not see him 6	1.10
1.13 What is your father's level of education?	Primary 1 Technical education and vocational training 2 Secondary 3 Higher 4 Other..... 5	
1.14 Is your mother alive?	Yes 1 No 2 →	1.15
1.15 Does your mother live in the same household as you?	Yes 1 No 2	
1.16 Do you find it difficult or easy to talk with your mother about things that are important to you?	Very easy 1 Easy 2 Average 3 Difficult 4 Very difficult 5 Do not see her 6	
1.17 What is your mother's level of education?	Primary 1 Technical education and vocational training 2 Secondary 3 Higher 4 Other..... 5	
1.18 Do you have brothers or sisters?	Yes 1 No 2	
1.19 Do you find it difficult or easy to talk with your brothers or sisters about things that are important to you?	Very easy 1 Easy 2 Average 3 Difficult 4 Very difficult 5 Do not see them 6	

2 Sources of information on reproductive health

2.1 Have you ever learnt about boys' or girls' body changes?	Yes No	1 2 →	2.3
2.2 Where did you learn about puberty or body changes? Where would you prefer to get this information from?	Source of information on puberty and body changes		Preferred source
	School teacher	01	01
	Mother	02	02
	Father	03	03
	Brother	04	04
	Sister	05	05
	Other family members	06	06
	Friends	07	07
	Doctors/Nurses	08	08
	Books/magazines	09	09
	Films/Videos	10	10
	Internet (social media, website)	11	11
	Television	12	12
	Radio	13	13
	Other (Specify.....)	14	14
2.3 Have you ever learned about how pregnancy occurs?	Yes No	1 2 →	2.10
2.4 Where did you learn about how reproduction and pregnancy happen?	Source of information on how reproduction and pregnancy happens		Preferred source
	School teacher	01	01
	Mother	02	02
	Father	03	03
	Brother	04	04
	Sister	05	05
	Other family members	06	06
	Friends	07	07
	Doctors/Nurses	08	08
	Books/magazines	09	09
	Films/Videos	10	10
	Internet (social media, website)	11	11
	Television	12	12
	Radio	13	13
	Other (Specify.....)	14	14
2.5 Have you ever attended classes on puberty, sexual and reproductive systems and relationships between boys and girls?	Yes No Not sure	01 02 03	
2.6 Do you think that there should be (more) classes on these topics, or fewer classes or were the numbers about right?	More Less About right	01 02 03	
2.7 Do you ever use a mobile phone?	Yes No	01 02	
2.8 Have you ever used the internet to seek for information?	Yes No	01 02 →	Section 3
2.9 Have you ever used the internet to seek sexual and reproductive health information?	Yes No	1 2 →	Section 3
2.10 Did you use any of the following media?	Facebook 01 Whatsapp 02 YouTube 03 Snapchat 04	Instagram 05 Website (google, ...) 06 Other 07 Specify.....	
2.11 How did you access the internet?	Own phone Parents' computers/phone Internet (cyber) café	01 02 03	

	School computers 04 Other 05	
2.12 Have you ever discussed sex-related matters with your father? If YES Often or occasionally?	Often 1 Occasionally 2 Never 3	
2.13 Have you ever discussed sex-related matters with your mother? If YES Often or occasionally?	Often 01 Occasionally 02 Never 03	
2.14 Have you ever discussed sex-related matters with your brothers or sisters? If YES Often or occasionally	Often 01 Occasionally 02 Never 03	

3 Sexuality knowledge

Now I have some other questions on sex and reproduction. Please tell me whether you think the statement is true or false or whether you don't know.

3.1 A girl can get pregnant the very first time that she has sexual intercourse.	True 1 ☐	False 2 ☐	Don't Know/ Not Sure 3 ☐
3.2 A woman stops growing after she has had sexual intercourse for the first time.	1 ☐	2 ☐	3 ☐
3.3 Masturbation causes serious damage to health.	1 ☐	2 ☐	3 ☐
3.4 A girl is most likely to get pregnant if she has sexual intercourse halfway between her periods.	1 ☐	2 ☐	3 ☐
3.5 A girl cannot get pregnant if she has sexual intercourse in a standing position	1 ☐	2 ☐	3 ☐
3.6 A girl can get pregnant through kissing or touching	1 ☐	2 ☐	3 ☐

4 Knowledge of contraceptive methods

I now have some questions about contraception - I mean ways in which men and women can avoid getting pregnant. Which methods have you heard of? Do you know where (source) you can obtain the method? What other methods have you heard of? Circle **code 1 (YES)** in COL. 2 for each method known. Indicate in COL 3 whether you know or do not know the source for each method mentioned in COL. 1

COL 1.	COL. 2.	COL. 3.
6.1 The pill	<u>Knowledge of Method</u>	<u>Knowledge of Source</u>
Women must take a pill every day	Yes 1 → No 2	"Do you know any place or person where young people could obtain this method? Yes 1 No 2
6.2 Injection	Yes 1 → No 2	"Do you know any place or person where young people could obtain this method? Yes 1 No 2
6.3 Condom	Yes 1 → No 2	"Do you know any place or person where young people could obtain this method?

A man can put a rubber device on his penis before intercourse		Yes 1 No 2
6.4 Emergency Contraceptive Pills A woman can take pills soon after intercourse	Yes 1 → No 2	"Do you know any place or person where young people could obtain this method? Yes 1 No 2
6.5 Withdrawal A man can pull out of a woman before climax	Yes 01 No 02	
6.6 Periodic Abstinence/Rhythm A couple can avoid sex on days when pregnancy is most likely to occur.	Yes 01 No 02	
6.7 What other methods have you heard of? (CIRCLE EACH METHOD THAT APPLY).	IUD 01 Implant 02 Jelly/foam 03 Female Sterilization 04 Male Sterilization 05 Lactation amenorrhea method 06 Other (SPECIFY)..... 07	
6.8 Which method do you think is most suitable for young people? CIRCLE ONE ANSWER	Pill 01 injection 02 Condom 03 Emergency Pills 04 Withdrawal 05 Periodic Abstinence 06 Other 07 Don't know 08	
6.9 Have you ever used any of the contraceptive methods? If YES, which method did you use?	Pill 01 Injection 02 Condom 03 Emergency contraceptive Pills 04 Withdrawal 05 Periodic abstinence 06 Other 07 Specify	

5 Condom knowledge and attitudes

5.1 Have you ever seen a condom?	Yes 1 No 2	
People have different opinions about condoms. For each opinion, please tell me whether you agree or disagree or whether you don't know.	Agree Don't know/not sure. Disagree	
5.2 Condoms are an effective method of preventing pregnancy	1 2 3	
5.3 Condoms can be used more than once	1 2 3	
5.4 A girl can suggest to her boyfriend that he use a condom	1 2 3	
5.5 A boy can suggest to his girlfriend that he use a condom	1 2 3	
5.6 Condoms are an effective way of protecting against HIV	1 2 3	
5.7 Condoms are only suitable for casual relationships	1 2 3	
5.8 Condoms are suitable for steady, loving relationships	1 2 3	
5.9 It would be too embarrassing for someone like me to buy or obtain condoms	1 2 3	

5.10 If a girl or boy suggested using condoms with her partner, it would mean that she didn't trust him	1	2	3	
5.11 Condoms reduce sexual pleasure	1	2	3	
5.12 Condoms can slip off the man and disappear inside the woman's body	1	2	3	
5.13 If unmarried couples want to have sexual intercourse before marriage, they should use condoms	1	2	3	
5.14 Condoms are an effective way of protecting against sexually transmitted diseases	1	2	3	

6 Knowledge of HIV/AIDS and sexually transmitted diseases

6.1 Have you heard of HIV or AIDS	Yes No	1 2	6.9
I am now going to read you some statements about HIV/AIDS. Please tell me whether you think the statement is true or false or whether you don't know.			
	True	False	Don't know
6.2 It is possible to cure AIDS	1	2	3
6.3 A person with HIV always looks slim or unhealthy in some way	1	2	3
6.4 People can take a simple test to find out whether they have HIV	1	2	3
6.5 A person gets HIV from mosquito bites	1	2	3
6.6 Shaking hands or hugging can transmit HIV	1	2	3
6.7 People get HIV by sharing food with a person who has HIV	1	2	3
6.8 HIV is curable	1	2	3
6.9 People can avoid sexually transmitted diseases and HIV	1	2	3
6.10 Apart from HIV/AIDS, there are other diseases that men and women can catch by having sexual intercourse. Have you heard of any of these diseases?	Yes No	01 02	7.13
6.11 Which other sexually transmitted diseases have you heard of?	Gonorrhoea Syphilis Chlamydia Genital herpes / sore Other	01 02 03 04 05	
6.12 How can you know that a man has a sexually transmitted disease? (Tick all that apply)	Discharge from penis Pain during urination Ulcers/sores in genital area Other..... Don't know any signs	01 02 03 04 08	
6.13 How can you know that a woman has a sexually transmitted disease? (Tick all that apply)?	Vaginal discharge Pain during urination Ulcers/sores in genital area Other..... Do not know any signs	01 02 03 04 08	
6.14 If a friend of yours needed treatment for a sexually transmitted disease, where could he or she go?	Shop Pharmacy	1 2	

	Public hospital/health centre/clinic	3	
	Private doctor/nurse/clinic	4	
	Other (SPECIFY).....	5	
6.15 Have you ever had a sexually transmitted disease? IF YES Once or more than once?	Once	1	Section 7
	More than once, 2		
	Never	3	
6.16 (On the last occasion) Did you seek treatment?	Yes	1	7.17
	No	2	
6.17 Where did you seek treatment?	Shop	1	
	Pharmacy	2	
	Public hospital/health centre/clinic	3	
	Private doctor/nurse/clinic	4	
	Other	5	
6.18 Did your sexual partner (or any of your partners) also obtain treatment?	Yes	1	
	No	2	
	Don't know	3	

7 Personal Attitudes towards Sexuality & Gender

Sexual Norms Most people at my school think that:	Strongly agree	Agree	Disagree	Strongly disagree
7.1 It is ok for unmarried young people to socialise with the opposite sex				
7.2 Unmarried girls should have boyfriends				
7.3 Unmarried boys should have girlfriends				
7.4 It is ok if unmarried touch, kiss, or hug the opposite sex				
7.5 It is ok if unmarried to have sex				
7.6 My friends think that I should remain a virgin until I marry.				
7.7 My friends think that it is fine for a girl to suggest to her sexual partner that he use a condom.				
7.8 My friends think that boys and girls can have sex before marriage if they use methods to prevent pregnancy.				
7.9 My friends think that it is fine for a boy to suggest to his sexual partner that she use a condom.				
Personal attitudes				
Young people have various views about relationships. What is your personal opinion of the following statements?				
	Strongly agree	Agree	Disagree	Strongly disagree
7.10 I think that it is acceptable for young people to socialise with the opposite sex.				
7.11 I think that it is all right for unmarried boys to have girlfriends.				
7.12 I think that it is all right for unmarried girls to have boyfriends.				
7.13 I think that it is wrong for boys and girls to have physical intimacy, such as touching, kissing and hugging the opposite sex.				
7.14 I think it is wrong for unmarried boys and girls to have sexual intercourse, even if they love each other.				

7.15I think that girls should remain virgins until they marry.				
7.16I think that it is all right for boys and girls to have sex before marriage if they use methods to prevent pregnancy.				
7.17I think that virginity is a girl's most valuable possession.				
7.18I think that my religious beliefs are against premarital sex.				
7.19I think that it is okay for boys to have sex before marriage but not so for girls.				

8 Sexual experiences and behaviours

Sexual experiences

8.1 Do you have or have you ever had a girl/boyfriend/partner (someone whom you 'dated' (Dating: <i>going out together unaccompanied by other adults</i>)?	Yes No	1 2	
8.2 How old was/is your boy/girlfriend/partner?	Age in years: _____		
8.3 Did you and your boy/girlfriend/partner have any physical contact, such as hugging	Yes No	01 02	
8.4 Did you and your boy/girlfriend/partner have any physical contact, such as holding hands	Yes No	01 02	
8.5 Did you and your boy/girlfriend/partner have any physical contact, such as caressing each other's bodies?	Yes No	01 02	
8.6 Did you ever kiss your boy/girlfriend/partner on the lips?	Yes No	1 2	
8.7 Did you ever touch your boy/girlfriend/partner's vagina/penis with your hand?	Yes No	1 2	
8.8 Did you ever stroke your boy/girlfriend/partner's vagina/penis so that she/he climaxed?	Yes No	1 2	
8.9 Did your boy/girlfriend/partner ever touch your penis/vagina with her /his hand?	Yes No	1 2	
8.10 Did your boy/girlfriend/partner ever stroke your penis/vagina so that you climaxed?	Yes No	1 2	

Homosexual experience

8.11 Some young people are sexually attracted to people of the same sex. Have you ever been sexually attracted to a boy/girl?	Yes No	1 2	
8.12 A. MALES: Have you ever had any sexual contact, such as hugging, kissing, touching or caressing, with a boy?	Yes No	1 2	
B. FEMALES: Have you ever had any sexual contact, such as hugging, kissing, touching or caressing, with a girl?	Yes No	1 2	
8.13 Would you say that you are mostly attracted to people of the opposite sex, more attracted to people of the same sex, or attracted to both sexes equally?	Opposite sex Same-sex Both equally	1 2 3	

Sexuality behaviors

8.14 Do you ever go to clubs or parties where young people dance? IF YES. How many times in the last month?	Yes No	1 2	
8.15 Do you ever drink alcohol?	Yes No	1 2	
8.16 Do you ever smoke cigarettes? IF YES. How many have you smoked in the last seven days?	Yes No Number of cigarettes;	1 2 _____	
8.17 Do you use other drugs, such as cannabis?	Yes	1	

	No	2	
8.18 How often have you seen films or photographs that show sexual activity?	Never	01	
	Once or twice	02	
	3 or 4 times	03	
	Five times or more	04	
8.19 Have you ever had oral sex? (oral sex is when a partner ever puts his/her mouth on your sex organs or you put your mouth on his/her sex organs)	Yes	1	
	No	2	
8.20 Have you ever had anal intercourse? (when a man inserts his penis into his partner's anus)	Yes	1	
	No	2	
8.21 Have you ever had vaginal intercourse with anyone? (Vaginal intercourse is when a boy/man inserts his penis into a girl's/woman's vagina)	Yes	1	
	No	2	→ 8.19
8.22 How many people have you had sexual intercourse with?	Number: _____		
8.23 Some young people are forced to have sexual intercourse against their will by a stranger, a relative or an older person. Has this ever happened to you?	Yes	1	
	No	2	
8.24 Some young people/females are touched on the breast or some other part of the body when they do not want to be, by a stranger, a relative or an older person. Has this ever happened to you?	Yes	1	
	No	2	
8.25 Would you say this has happened often, sometimes, or rarely?	Often	1	
	Sometimes	2	
	Rarely	3	
8.26 Some young people pay money or gifts in exchange for sexual intercourse. Has this ever happened to you?	Yes	1	
	No	2	→ 8.37
8.27 Some people receive money or gifts in exchange for sexual intercourse. Has this ever happened to you?	Yes	1	
	No	2	→
8.28 How many women/men have you had sex with for money or gifts?	Number: _____.		
8.29 Did you or the sexual partner do anything to avoid a pregnancy on these occasions? IF YES, Always or sometimes?	Always	1	
	Sometimes	2	
	Never	3	
8.30 What method was used the last time you had sexual intercourse?	Condom	1	
	Pill	2	
	Injection	3	
	Withdrawal	4	
	Safer Period	5	
	Other	6	
8.31 How would you rate your experience the last time you had sexual intercourse?	Positive experience	1	
	Not a special experience	2	
	Bad experience	3	
	Do not know	4	
FOR THOSE WHO HAVE EXPERIENCED PENETRATIVE SEX (sex in which the penis penetrates the vagina or anus)			
8.32 Did you regret having intercourse that first time?	Yes, regretted	01	
	No, not regretted	02	
8.33 On that first time, did you or your partner do anything to avoid a pregnancy?	Yes	1	
	No	2	
8.34 Think back to the first time you had sex with your boy/girlfriend/partner - I mean the first time that the penis was in the vagina. Would you say?			
(a) I forced her/him to have intercourse against her/his will	(a) I forced	1	
(b) I persuaded her/him to have intercourse	(b) I persuaded	2	
(c) He/she persuaded me to have intercourse	(c) He/she persuaded	3	
(d) He/she forced me to have intercourse	(d) He/she forced	4	
(e) We were both equally willing	(e) Both willing	5	
8.35 How would you describe your relationship to the first person you had sexual intercourse with?	Boy/girlfriend	1	
	Stranger/relative/other person	2	

	One night stand	3	
	Commercial sex partner	4	
8.36 How old was the first person you had sexual intercourse with?	Age _____		
8.37 How old were you the first time you had sex?	Age in years _____		
8.38 Did you ever discuss contraception with your boy/girlfriend? IF YES Did you discuss contraception before or after you first had intercourse?	Before first intercourse	1	
	After first intercourse, 2		
	Never	3	
8.39 How many times have you had full intercourse in your life? (estimate)	Number of times _____	1	

FOR THOSE WHO HAVE NEVER EXPERIENCED SEXUAL INTERCOURSE (See 8.16))

People may have mixed reasons for not having intercourse. Please tell me for each reason whether it applies to you or not.	Applies	Not applies	Don't Know/ Not Sure	
8.40 I don't feel ready to have sex.	1	2	3	
8.41 I have not had the opportunity.	1	2	3	
8.42 I think that sex before marriage is wrong	1	2	3	
8.43 I am afraid of getting pregnant	1	2	3	
8.44 I am afraid of getting HI or another sexually transmitted infection.	1	2	3	
8.45 And now I have a question about your plans for sexual intercourse. Which of these statements best describes your plans? (a) I plan to wait until marriage (b) I plan to wait until I am engaged to be married (c) I plan to wait until I find someone I love (d) I plan to have sexual intercourse when an opportunity comes along	(a) Marriage (b) Engagement (c) Love (d) Opportunity		1 2 3 4	
8.46 Do you feel any pressure from others to have sexual intercourse? IF YES, A great deal or a little?	A great deal A little None		1 2 3	Section 9
8.47 From whom do you feel pressure? CIRCLE ALL THAT APPLY	Friends Relatives Partner/special friend Other		1 2 3 4	
8.48 Do you think that sexual intercourse could be a positive experience?	Yes No		1 2	

Health outcomes

3.19 A. MALES: Have you ever made a girl or woman pregnant? B. FEMALES: Have you ever been pregnant?	Number: _____ Never Not Sure	9.4 0 9
3.20 What happened to the pregnancy?	Currently pregnant Abortion Miscarriage Live-birth Not sure	1 2 3 4 5
3.21 Were you ever concerned that you might catch HIV or another sexually transmitted disease from your partner?	Very concerned Somewhat concerned Not concerned	1 2 3
3.22 Have you ever done an HIV test?	Yes No	1 2
3.23 Have you ever had a sexually transmitted disease?	Yes No	1 2
3.24 Have you ever needed to seek medical care or advice regarding sexual and reproductive health matters?	Yes No	1 2

Thank you.

END OF QUESTIONNAIRE

APPENDIX 21: QUESTIONNAIRE FOR QUANTITATIVE SURVEY (KINYARWANDA VERSION)

UBUMENYI, IMYIZERERE N'IMYIFATIRE Y'ABANGAVU N'INGIMBI BIYANJE N'UBUZIMA BW'IMYOROROKERE MU RWANDA: INGARUKA KU MIKORESHEREZE Y'IBITSINA NO KU BUZIMA BWABO.

IGICE CYA 1: IBIRANGA USUBIZA

1.1 Izina ry' Akarere	Akarere:		
1.2 Izina ry'Ishuri	Izina:		
1.3 Igitsina cy'usubiza	Gabo Gore	01 02	
1.4 Imyaka y'usubiza	_____ Imyaka		
1.5 icyiciro'ishuli	Ishuli rya Leta Ishuli Ryigenga	01 02	
1.6 Umwaka wigamo	umwaka wa mbere Umwaka wa kabiri	01 02	
1.7 Usengera murihe dini?	Gatolika 01 Umuporoso 02 Umusilamu 03 Umudivantisite 04	Umuhamya wa Yehova 05 Nta na rimwe 06 Irindi (Rivuge).....07	1.9 →
1.8 Idini rifite akahe gaciro mu buzima bwawe	Ni kanini cyane 1 Ni kanini 2 Ntako 3		
Ibyerekeye ubukungu			
1.9 Iwanyu muba mu kihe cyiciro cy'ubudehe	icyiciro cya mbere 1 icyiciro cya kabiri 2 icyiciro cya gatatu 3 icyiciro cya kane 4 Ntabwo mbizi 5		
Ibiranga amasano			
1.10 Papa wawe aracyariho?	Yego 1 Oya 2 →		1.14
1.11 Ese ubana na papa wawe mu rugo?	Yego 1 Oya 2 →		1.14
1.12 Ese ubona bikoroheye cyangwa bigukomerera kuganira na papa wawe ibintu bigufitiye akamaro/agaciro?	Biroroshye cyane 1 Biroroshye 2 Biraringaniye 3	Biragoye 4 Biragoye cyane 5 Sinjya mubona 6	
1.13 Papa wawe yize ayahe mashuli?	Ntabwo yigeze yiga Abanza Imyuga Ayisumbuye Amashuli Makuru na Kaminuza Ayandi (Yavuge).....	0 1 2 3 4 5	
1.14 Ese mama wawe aracyariho?	Yego 1 Oya 2 →		1.18
1.15 Ese ubana na mama wawe mu rugo rumwe?	Yego 1 Oya 2		
1.16 Ese ubona byoroshye cyangwa bikomeye kuganira na Mama wawe ibintu bigufitiye akamaro?	Biroroshye cyane 1 Biroroshye 2 Biraringaniye 3	Biragoye 4 Biragoye cyane 5 Sinjya mubona 6	
1.17 Mama wawe yize ayahe amashuli?	Ntabwo yigeze yiga Abanza Imyuga Ayisumbuye Amakuru na Kaminuza	0 1 2 3 4	

	Ayandi.....	5	
1.18 Ese ufite abavandimwe?	Yego Oya	1 2	
1.19 Ese ubona byoroshye cyangwa bikomeye kuvugana n'abavandimwe bawe ibintu bigufitiye akamaro?	Biroroshye cyane Biroroshye Biraringaniye	1 2 3	Biragoye Biragoye Cyane Sinjya mbabona 4 5 6

IGICE CYA 2: ISOKO Y' AMAKURU KU BUZIMA BW'IMYOROROKERE

2.1 Waba warigeze wigishwa ibyerekeye imihindagurikire y'umubiri w'umuhungu cyangwa Umukobwa	Yego 1 Oya 2	→	2.3
2.2 Nihehe wigiye ibyerekeye impinduka z'imikurire mu mubiri? Wumva ari he wakwishimira kuvana ayo makuru?	Aho wigiye ibyerekeye 'impinduka zimikurire mu mubiri		Aho wakwishimira kuvana amakuru
	Mwarimu wo kwishuli Mama Papa Umuwandimwe wanjye w'umuhungu Umuwandimwe wanjye w'umukobwa Undi wo mu muryango Inshuti Muganga/Umuforomo Ibitabo/ ibinyamakuru Filimi/ videwo Interineti (social media, website)/ Television/ Isakazamashusho Radio/ Insakazamajwi Ahandi (havuge....)	01 02 03 04 05 06 07 08 09 10 11 12 13 14	01 02 03 04 05 06 07 08 09 10 11 12 13 14
2.3 Waba warigeze wigishwa uko gutwara inda bigenda	yego 1 Oya 2	→	2.7
2.1 Ni hehe waba warigiye ibyerekeye imyororokere cyangwa uko gutwara inda bigenda?	Aho wakuye amakuru yerekeye imyororokere no gutwara inda		Aho wakwishimira kuvana amakuru
	Mwarimu wo ku ishuli Mama Papa Umuwandimwe wanjye w'umuhungu Umuwandimwe w'umukobwa Undi wo mu muryango Inshuti Muganga/ Umuforomo Ibitabo/ ibinyamakuru Filimi/ videwo Interi neti (social media, website)/ Television/ Insakazamashusho Radio/ Isakazamajwi Ahandi (havuge....)	01 02 03 04 05 06 07 08 09 10 11 12 13 14	01 02 03 04 05 06 07 08 09 10 11 12 13 14
2.2 Mwaba mwarigeze kwiga mu ishuli rivuga ku bugimbi/ubwangavu, imikorere y'igitsina, imyororokere n'imibanire hagati y'umuhungu n'umukobwa?	Yego Oya Simbizi neza	01 02 03	
2.3 Ese ubona amasomo kuri izo ngingo akwiye kuba menshi kurushaho?	Menshi Make Arahagije	01 02 03	
2.4 Waba warigeze gukoresha telephone igendanwa?	Yego Oya	01 02	

2.5 Waba warigeze ukoresha interineti mu gushaka amakuru?	Yego Oya	01 02 →	2.12
2.6 Waba warigeze ukoresha interineti mugushaka amakuru ku buzima bw'imyororokere	Yego Oya	1 2 →	2.12
2.7 Waba warakoresheje izihe mbuga nkoranyambaga?	Fesibuku wotsapu Tutube Sinapucati	01 02 03 04	insitagaramu Gugo06 Izindi (Zivuge) 07
2.8 Wakoresheje iki kugirango ujye kuri interneti ?	Telephone yanjye Mudasobwa/ telefoni y'ababyeyi Inzu zicururizwamo interneti Mudasobwa z'ishuli Ahandi (havuge).....	01 02 03 04 05	
2.9 Waba warigeze ugania na papa wawe ku ngingo yerekeranye n'imikorere y'igitsina? Niba ariyego byabaye kenshi cyangwa ni rimwe na rimwe?	Kenshi Rimwe na rimwe Nta na rimwe	1 2 3	
2.10 Waba warigeze ugania na mama wawe ku ngingo yerekeranye n'imikorere y'igitsina? Niba ari yego byabaye kenshi cyangwa ni rimwe na rimwe?	Kenshi Rimwe na rimwe Nta na rimwe	01 02 03	
2.11 Waba warigeze ugania na musaza/mushiki wawe ku ngingo yerekeranye n'imikorere y'igitsina? Niba ari yego byabaye kenshi cyangwa ni rimwe na rimwe?	Kenshi Rimwe na rimwe Nta na rimwe	01 02 03	

3 IGICE CYA 3: UBUMENYI KU BYEREKEYE IGITSINA

Mfite ibindi bibazo ku mibonano mpuzabitsina n'imyororokere nifuza ko tuganira muri kano kanya. urambwira uko ubyumva niba ari ukuri, atari ukuri cyangwa niba utabizi ukoresheje akamenyesto ka ✓

3.1 Umukobwa ashobora gusama igihe akoze imibonano mpuzabitsina bwa mbere	True/Nibyo 1☐	False/ Sibyo 2☐	Simbizi 3☐
3.2 Umukobwa/Umugore arekeraho gukura iyo akoze imibonano mpuzabitsina kunshuro ya mbere	1☐	2☐	3☐
3.3 Kwikinisha byangiza bikomeye ubuzima	1☐	2☐	3☐
3.4 Umukobwa aba afite ibyago byinshi yo gusama iyo akoze imibonano mpuzabitsina hagati mu kwezi kwe kw'imihango	1☐	2☐	3☐
3.5 Umukobwa ntashobora gusama iyo akoze imibonano mpuza bitsina ahagaze	1☐	2☐	3☐
3.6 Umukobwa ashobora gusama asomanye cyangwa akorakowe n'umuhungu	1☐	2☐	3☐

IGICE CYA 4: UBUMENYI KUBURYO BWO KUBONEZA URUBYARO

Vuga niba uzi uburyo bukurikira kwo kuboneza urubyaro unavuye niba uzi aho wabukura igihe wabukenera

Uburyo bwo kuboneza urubyaro		
4.1 Ibinini	<u>Ubumenyi ku buryo bwo kuboneza urubyaro</u>	<u>Ese uzi aho wabukura igihe wabukenera?</u>
Umugore agomba gufata ikinyini buri muni	Yego 1 →	Yego 1 Oya 2

	Oya	2	
4.2 Urushinge Umugore ashobora guhabwa urushinge mu gihe cyagenwe	Yego Oya	1 → 2	<u>Ese uzi aho wabukura igihe wabukenera?</u> Yego 1 Oya 2
4.3 Agakingirizo Umugabo agomba kwambara agakingirizo mbere y'imibonano mpuzabitsina	Yego Oya	1 → 2	<u>Ese uzi aho wabukura igihe wabukenera?</u> Yego 1 Yego 2
4.4 Ibinini by'ingoboka mu kuboneza urubyaro Umugore ashobora gufata ibinini ako kanya amaze gukora imibonano mpuzabitsina	Yego Oya	1 → 2	<u>Ese uzi aho wabukura igihe wabukenera?</u> Yego 1 Oya 2
4.5 Kwiyakana Umugabo ashobora gukura igitsina cye mu mugore mbere yo gusohora/kurangiza	Yego Oya	01 02	
4.6 Kwifata mu bihe cy'uburumbuke Abaskakanye bashobora kwirinda gukora imibonano mpuzabitsina mu minsi y'uburumbuke bw'umugore	Yego Oya	01 02	
4.7 Ni ubuhe buri buri bwo kuboneza urubyaro waba warumvise?(Shyira uruziga ku gisubizo cyawe)	Agapira ko mu mura Agapira ko mu kaboko Jelly/foam/ geli (Amavuta) guhagarika urubyaro burundu ku mugore Guhagarika urubyaro burundu ku mugabo Uburyo bwo konsa Ubundi (buvuge).....	01 02 03 04 05 06 07	
4.8 Ni ubuhe buri bwo kuboneza urubyaro ubona ari bwiza ku rubyiruko? Shyira uruziga ku gisubizo cyawe	Ibinini Urushinge Agakingirizo Ibinini by'ingoboka Kwiyakana Kwifata mugihe cy'uburumbuke Ubundi Ntabwo nzi	01 02 03 04 05 06 07 08	
4.9 Waba warigeze gukoresha bumwe muri ubu buryo bwo kuboneza urubyaro?Niba ari yego, ni ubuhe buryo wakoresha?	Ibinini Urushinge Agakingirizo Ibinini by'ingoboka mu kuboneza urubyaro kwiyakana Kwifata mugihe cy'uburumbuke Ubundi (Buvuge)	01 02 03 04 05 06 07	

IGICE CYA 5: UBUMENYI N'IMITEKEREREZE KU GAKINGIRIZO

1.1 Waba warigeze ubona agakingirizo?	Yego Oya	1 2	
Abantu bagira imyumvire itandukanye ku gakingirizo. Kuri myumvire, ndifuza ko umbwira niba uyemera, utayemera cyangwa utabizi (shyira uruziga ku gisubizo cyawe)	Ndabyemera	Simbizi	Simbyemera
1.2 Agakingirizo ni uburyo bwizewe bwo kurinda gusama/gutwara inda	1	2	3
1.3 Agakingirizo gashobora gukoreshwa inshuro irenze imwe	1	2	3

1.4 Umukobwa ashobora kugira inama umuhungu w'inshuti ye ngo bakoreshe agakingirizo	1	2	3
1.5 Umuhungu ashobora kugira inama Umukobwa w'inshuti ye ngo bakoreshe agakingirizo	1	2	3
1.6 Agakingirizo ni uburyo bwizewe bwo kwikingira agakoko gatera virusi ya SIDA	1	2	3
1.7 Agakingirizo gakwiye gukoreshwa gusa kunshuti y'igihe gito	1	2	3
1.8 Agakingirizo gakwiye gukoreshwa kubakundana birambye	1	2	3
1.9 Biteye isoni ku muntu nkanjye kugura cyangwa kugira agakingirizo	1	2	3
1.10 Iyo umukobwa cyangwa umuhungu asabye umukunzi we gukoresha agakingirizo biba bishatse gusobanura ko atamwizera	1	2	3
1.11 Agakingirizo kagabanya ibyishimo bituruka ku mibonano mpuzabitsina	1	2	3
1.12 Agakingirizo gashobora kunyerera kakava ku gitsina cy'umugabo kagahera mu mugore	1	2	3
1.13 Igihe abantu batashyiriranye bashatse gukora imibonano mpuzabitsina bakwiye gukoresha agakingirizo	1	2	3
1.14 Agakingirizo ni uburyo bwizewe bwo kwirinda indwara zandurira mu mibonano mpuzabitsina.	1	2	3

IGICE CYA 6: UBUMENYI KU GAKOKO GATERA SIDA N'INDWARA ZANDURIRA MU MIBONANO MPUZABITSINA

6.1 Wwaba warigeze mwumva ibyerekeye agakoko gatera SIDA cyangwa SIDA	Yego Oya	1 2	6.10
Hari imyumvire y'abantu ku gakoko gatera SIDA na SIDA. Vuga niba uyifata nk'ukuri, cyangwa atari ukuri, cyangwa utabizi			
	1- Nibyo	2- Sibyo	3- Ntago mbizi
6.2 Birashoboka kuvura SIDA	1	2	3
6.3 Umuntu ubana n'agakoko gatera SIDA buri gihe aba ananutse asa nudafite ubuzima bwiza	1	2	3
6.4 Abantu bashobora gukoresha icyizami cyoroheje kugirango bamenye ko undi agendana agakoko gatera SIDA	1	2	3
6.5 umuntu yandura agakoko gatera SIDA binyuze mu kurumwa n'umubu	1	2	3
6.6 Guhana ibiganza cyangwa guhoberana bishobora gukwirakwiza agakoko gatera SIDA	1	2	3
6.7 Abantu bandura agakoko gatera SIDA igihe basangira amafunguro n'umuntu ufite agakoko gatera SIDA	1	2	3
6.8 Agakoko gatera SIDA karavurwa kagakira	1	2	3
6.9 Birashoboka ko abantu bakwirinda indwara zandurira mu mibonano mpuzabitsina n'agakoko gatera SIDA	1	2	3
6.10 Uretse Agakoko gatera SIDA na SIDA, abagabo n'abagore bashobora kugira izindi ndwara zandurira mu mibonano mpuzabitsina. Haba hari iyo waba warumvishije muri zo?	Yego Oya	01 02	7.1
6.11 Ni izihe ndwara zandurira mu mibonano mpuzabitsina zindi waba warigeze wumva?	Imitezi Mburugu Kalamidiya Uduheri/ibisebe ku gitsina Izindi (zivuge).....	01 02 03 04 05	

6.12 Wamenya ute ko umugabo afite indwara yandurira mu mibonano mpuzabitsina? Shyira akamenyetso ku bisubizo byose byawe	Ururenda ruturuka mu gitsina gabo 01 Kubabara igihe cyo kunyara 02 Udusebe cyangwa uduheri mu gitsina 03 Ibindi (bivuge)..... 04 Ntabwo nzi 08	
6.13 Wamenya ute ko umugore afite indwara yandurira mu mibonano mpuzabitsina? Shyira akamenyetso ku bisubizo byawe byose	Ururenda ruturuka mu gitsina gore 01 Kubabara igihe cyo gusoba 02 Udusebe cyangwa uduheri mu gitsina 03 ibindi (bivuge)..... 04 Ntabwo 08	
6.14 Ese inshuti yawe iramutse ikeneye ubuvuzi bw'indwara zandurira mu mibonano mpuzabitsina yabukura he?	Iguriro/butike 1 Farumasi/ inzu icuruza imiti 2 Ivuriro/ibitaro/ ikigo nderabuzima bya Leta 3 ivuriro ryigenga 4 Ahandi (Havuge)..... 5	
6.15 Waba warigeze urwara indwara yandurira mu mibonano mpuzabitsina? Niba ari Yego, wayirwaye inshuro imwe cyangwa nyinshi?	Inshuro imwe 1 Inshuro nyinshi 2 Nta narimwe 3	7.1
6.16 Ubwo uheruka kuzirwara waba warivuye?	Yego 1 Oya 2	7.1
6.17 Nihehe wivuye?	Iguriro 1 Farumasi/ Aho bacururiza imiti 2 Ivuriro/ibitaro/ikigo nderabuzima bya Leta 3 Ivuriro ryigenga 4 Ahandi (havuge)..... 5	
6.18 Ese uwo mwakoranye imibonano mpuzabitsina yaba yarivuye?	Yego 1 Oya 2 Ntabwo mbizi 3	

IGICE CYA 7: IBITEKEREZO BWITE KU BYEREKERANYE N'IGITSINA (SHYIRA AKAMENYETSO KA ✓ MU KAZU GAKWIYE)

Indangagaciro zerekeye ku gitsina Abantu benshi ku ishuli ryanjye batekereza ko:	4- Ndabyemera cyane	3- Ndabyemera	2- Simbyemera	1- Simbyera na gato
7.1 Gushyikirana ku bantu badahuje igitsina kandi batarashyingirwa ntacyo bitwaye.				
7.2 Umukobwa utarashyingirwa akwiye kugira inshuti y'umuhungu				
7.3 Umuhungu utarashyingirwa akwiye kugira inshuti y'umukobwa				
7.4 Ntacyo bitwaye ko abantu batashyingiwe bakorakoranaho, basomana cyangwa bahoberana n'abo badahuje igitsina.				
7.5 Ntacyo bitwaye kuba abatarashyingiranwe bakora imibonano mpuzabitsina				
7.6 Inshuti zanjye zitekereza ko nkwiye kudakora imibonano mpuzabitsina kugeza nshyingiwe				
7.7 Inshuti zanjye zitekereza ko ntacyo bitwaye kuba umukobwa yasaba uwo bagiye kugirana imibonano mpuzabitsina gukoresha agakingirizo				
7.8 Inshuti zanjye zitekereza ko abahungu n'abakobwa bashobora kugirana imibonano mpuzabitsina mbere yo gushyingirwa igihe bakoresheje uburyo bwo kwirinda gutwita.				

7.9 Inshuti zanjye zitekereza ko ntacyo bitwaye kuba umuhungu yasaba uwo bagiye gukorana imibonano mpuzabitsina ko bakoresha agakingirizo				
Imitekerereze bwite Abantu bakiri bato bafite ibitekerezo binyuranye ku bijyanye no gusabana n'inshuti. Vuga niba wemeranya n'ibi bikurikira (shyira akamenyesto ka ✓ mu kazu gakwiye)				
	Ndabyemera cyane	Ndabyemera	Simbyemera	Simbyemera namba
7.10 Ntacyo bitwaye ko urubyiruko rusabana nuwo badahuje igitsina				
7.11 Ntacyo bitwaye ku muhungu w'ingaragu kugira inshuti y'umukobwa				
7.12 Ntacyo bitwaye ku mukobwa w'ingaragu kugira inshuti y'umuhungu				
7.13 Ntibikwiye ko umuhungu cyangwa umukobwa bahuza imibiri nko gukorakoranaho, gusomana, guhoberana nuwo badahuje igitsina				
7.14 Ntibikwiye ko umuhungu cyangwa umukobwa utarashyingirwa akora imibonano mpuzabitsina, kabone nubwo yaba akundana akundana n'uwo bayikorana.				
7.15 Umukobwa akwiye gukomeza kuba isugi kugeza ashyingiye				
7.16 Ntacyo bitwaye ku mukobwa cyangwa umuhungu kugira imibonano mpuzabitsina mbere yo gushyingirwa, igihe cyose bagakoresha uburyo bwo kwirinda gutwita				
7.17 Ubusugi bufite ni umutungo w'agaciro ntagereranywa ku mukobwa				
7.18 Imyemerere yanjye ishingiyeye ku idini ihabanye no gukora imibonano mpuzabitsina mbere yo gushyingirwa				
7.19 Ntacyo bitwaye ku bahungu gukora imibonano mpuzabitsina mbere yo gushyingirwa ariko ntibikwiye ku bakobwa.				

IGICE CYA 8: IMIKORESHEREZE N'IMYIFATIRE ISHINGIYE KU GITSINA

Imikoreshereze y'igitsina			
8.1 Waba ufite cyangwa warigeze kugira inshuti y'umuhungu/umukobwa mwasohokanaga nta wundi muntu mukuru muri kumwe?	Yego No	1 2	
8.2 Inshuti yawe y'umukobwa/umuhungu yari ifite imyaka ingahe?	Imyaka y'inshuti yawe: _____		
8.3 Waba warigeze uhuza umuburi n'inshuti yawe muhoberana?	Yego Oya	01 02	
8.4 Waba warigeze uhuza umuburi n'inshuti yawe mu gufatana mu biganza?	Yego Oya	01 02	
8.5 Waba warigeze uhuza umuburi n'inshuti yawe mugamije gukorakoranaho?	Yego Oya	01 02	
8.6 Waba warigeze usomana n'inshuti y'umuhungu/umukobwa ku munwa?	Yego Oya	1 2	
8.7 Waba warigeze ukora ku gitsina cy'umukunzi wawe w'umukobwa/umuhungu n'intoki zawe?	Yego Oya	1 2	
8.8 Waba warigeze ukinisha igitsina cy'inshuti yawe y'umuhungu/umukobwa kugeza ubwo arangiza?	Yego Oya	1 2	

8.9 Ese inshuti yawe y'umuhungu/umukobwa yaba yarigeze ikora ku gitsina cyawe n'intoki ze?	Yego Oya	1 2	
8.10 Ese inshuti yawe y'umuhungu/umukobwa yaba yarigeze ikinisha igitsina cyawe kugeza urangije?	Yego Oya	1 2	
Ku baryamana bahuje ibitsina			
8.11 Bamwe mu rubyiruko bagira amaranagmutima yerekeye imibonano mpuzabitsina nabo bahuje igitsina. Ese wowe waba warigeze wumva wakorana imibonano nuwo muhuje igitsina?	Yego Oya	1 2	
8.12 A. ABAHUNGU: Waba warigeze ugira ishimisha mubiri n'umuhungu muhoberana, musomana, cyangwa mukorakoranaho?	Yego Oya	1 2	
B. ABAKOBWA: Waba warigeze ugira ishimisha mubiri n'umukobwa muhoberana, musomana, cyangwa mukorakoranaho?	Yego Oya	1 2	
8.13 Ese wumva mu byiyumviro byawe ukururwa cyane n'umuntu mudahuje igitsina, umuntu muhuje igitsina cyangwa bose mu byerekeranye n'ishimisha mubiri?	Uwo tudahuje igitsina Uwo duhuje igitsina Bose	1 2 3	
Imyifatire ijyanye n'igitsina			
8.14 Waba warigeze ujya mu kabyiniro cyangwa ahandi urubyiruko rubyinira? Niba ari yego byabaye inshuro zingahe mu kwezi gushize?	Yego Oya Inshuro byabaye: _____	1 2	
8.15 Ese Unywa ibinyobwa bisembuye?	Yego Oya	1 2	
8.16 Ese unywa itabi? Niba ari yego, warinyoye kangahe muri iyi minsi 7 ishize?	Yego Oya Umubare w'amasegereti mu minsi 7 ishize:	1 2	
8.17 Ese ujya ukoresha ibindi biyobyabwenge nk'urumogi?	Yego Oya	1 2	
8.18 Ni kangahe ujya ureba filimi n'amafoto yerekana ibikorwa by'ishimishamubiri rishingiye ku gitsina?	Nta narimwe Inshuro imwe cyangwa ebyiri Inshuro 3 cyangwa 4 Inshuro 5 cyangwa zirenga	01 02 03 04	
8.19 Waba warigeze ugira imibonano mpuzabitsina yo mukanwa? (Imibonano mpuzabitsina yo mu kanwa ni igihe inshuti yawe ishyira umunwa mu gitsina cyawe, cyangwa wowe ushyira umunwa wawe mu gitsina cye)	Yego Oya	1 2	
8.20 Waba warigeze ukora imibonano mpuzabitsina mu kibuno (Igihe umuhungu yinjiza igitsina cye mu mukibuno cyumukunzi we)	Yego Oya	1 2	
8.21 Waba warigeze gukora imibonano mpuzabitsina ku buryo igitsina cy'umuhungu cyinjije mu gitsina cy'umukobwa/umugore?	Yego Oya	1 2	8.23
8.22 Mu buzima bwawe, umaze gukorana imibonano mpuzabitsina n'abantu bangahe kugeza ubu?	umubare: _____		
8.23 Bamwe mu bangavu n'ingimbi baja bahatirwa n'abandi bantu (abashyitsi, abo mumuryango cyangwa abantu bakuru) gukora imibonano mpuzabitsina batabishaka. Byaba byarigeze bikubaho?	Yego Oya	1 2	
8.24 Bamwe mu bangavu/ingimbi baja bakorakorwa ku mabere cyangwa kubindi bice by'umubiri n'abashyitsi, abo mu muryango, cyangwa abantu bakuru batabishaka. Byaba byarigeze bikubaho?	Yego Oya	1 2	
8.25 Wavuga inshuro ibi byakubayeho? Kenshi, rimwe narimwe, cyangwa gacye cyane	Kenshi Rimwe na rimwe Gacye cyane	1 2 3	
8.26 Bamwe mu rubyiruko batanga amafaranga cyangwa impano nk'ikiguzi kugira ngo bakore imibonano mpuzabitsina. Waba warigeze utanga icyo kiguzi?	Yego oya	1 2	8.40
8.27 Bamwe mu rubyiruko bahabwa amafaranga cyangwa impano kugira ngo bakore imibonano mpuzabitsina. waba warigeze uyahabwa?	yego Oya	1 2	
8.28 Ni abantu bangahe mwagiranye imibonano mpuzabitsina nyuma yo gutanga cyangwa kwakira mafaranga cyangwa impano?	Number/umubare: _____		

8.29 Ese inshuti yawe mwakoranye imibonano mpuzabitsina hari icyo ijya ikora ngo irinde gusama/gutwara inda? Niba ari yego buri gihe, cyangwa rimwe na rimwe?	Buri gihe Rimwe na rimwe Nta narimwe	1 2 3	
8.30 Ni ubuhe buryo bwo kwirinda inda itateguwe waba warakoresheje ubwo uheruka gukora imibonano mpuzabitsina	Agakingirizo Ibinini Urushinge Kwiyakana Iminsi itari iy'uburumbuke Ubundi (buvuge)	1 2 3 4 5 6	
8.31 Ni ku ruhe rugero wanyuzwe imibonano mpuzabitsina uheruka gukora?	Numvise ari byiza Nta kidasanzwe numvise Numvise ari bibi Ntago mbizi	1 2 3 4	
IBI BIBAZO BISUBIZWA N'ABAKOZE IMIBONANO MPUZABITSINA AHO IGITSINA GABO KINJIRA MU MUBIRI W'UNDI MUNTU (MU GITSINA CYANGWA MU KIBUNO) REBA 8.20 NA 8.21			
8.32 Waba waricujije igihe wakoraga imibonano mpuzabitsina bwa mbere?	Yego naricujije Oya, ntabwo nicujije	01 02	
8.33 Ese ubwo wakoraga imibonano mpuzabitsina ku nshuro ya mbere, uwo mwayikoranye hari icyo yakozwe kugira ngo abuze gutwita/gusama?	Yego Oya	1 2	
8.34 Ibuka igihe wakoraga imibonano mpuzabitsina bwa mbere, ubwo igitsina gabo cyari mu gitsina gore. Wvuga ko byagenze gute? (f) Nahatiye mugenzi wanjye gukora imibonano mpuzabitsina atabishaka (g) Naramwigishije kugeza yemeye ko dukora imibonano mpuzabitsina (h) / Yaranyigishije kugeza nemeye ko dukora imibonano mpuzabitsina (i) Yampatiye gukora imibonano mpuzabitsina (j) Twese twarabishakaga	(a) Narabimuhatiye (b) Naramwigishije (c) Yaranyigishije (d) Yampatiye kubikora (e) Twese twarabishakaga	1 2 3 4 5	
8.35 Wumva gute ubucuti bwawe n'uwo mwakoranye imibonano mpuzabitsina bwa mbere?	Umuhungu /umukobwa w'inshuti Umushyitsi/umuvandimwe/ undi muntu Umuhisi/ Uwigenderaga Twaraguraga	1 2 3 4	
8.36 Uwo mwakoranye imibonano mpuzabitsina bwa mbere yarafite imyaka ingahe?	Imyaka yari afite _____		
8.37 Wowe se wari ufite imyaka ingahe ubwo wakoraga imibonano mpuzabitsina bwa mbere?	Imyaka wari ufite _____		
8.38 Waba warigeze uganza n'inshuti yawe ibyerekeye kwirinda gutwita? Niba ari yego, mwabiganiriyemo mbere cyangwa nyuma yo gukora imibonano mpuzabitsina ya mbere?	Mbere yo gukora imibonano mpuzabitsina ya mbere Nyuma y'imibonano mpuzabitsina ya mbere Ntitwigeze tubiganiraho	1 2 3	
8.39 Ni inshuro zingahe wabashije gukora imibonano mpuzabitsina ukarangiza mu buzima bwawe?(gereranya)	Umubare w'inshuro _____		

IBIBAZO BISUBIZWA N'ABATARIGEZE BAKORA IMIBONANO MPUZABITSINA MU BUZIMA BWABO (REBA IBIBAZO BYA 8.20 NA 8.21)

Abantu bashobora kugira impamvu zitandukanye zo kudakora imibonano mpuzabitsina. Watubwira izishoboka kuri wowe ukurikije izivugwa zikurikira? (Shyira uruziga ku gisubizo cyawe)	1- Nibyo	2- Sibyo	3- Ntago mbizi	
8.40 Numva ntarezeza igihe cyo gukora imibonano mpuzabitsina	1	2	3	
8.41 Sinigeze mbona uburyo/amahirwe yo kubikora	1	2	3	
8.42 Ntekerezako bidakwiye ko nkora imibonano mpuzabitsina mbere yo gushyingirwa	1	2	3	
8.43 Ngira ubwoba bwo kuba natara changwa ngaterwa inda	1	2	3	
8.44 Ngira ubwoba bwo kuba nakwandura agakoko gatera SIDA cyangwa izindi ndwara zandurira mu mibonano mpuzabitsina	1	2	3	

8.45 Ibibazo bikurikira bijyanye na gahunda yawe ku mibonano mpuzabitsina mu gihe kizaza. Muri izi nteruro ni iyihe igaragaza kurusha izindi gahunda yawe mu gihe kizaza? (e) Nzakora imibonano mpuzabitsina nyuma yo gushyingirwa (f) Ndateganya gutegereza kugeza igihe nzabonera uwo tuzarushingana (g) Nzategereza kugeza mbonye uwo nkunda (h) Nzakora imibonano mpuzabitsina igihe cyose nzaba mbonye uwo tuyikorana	(e) Gushyingirwa 1 (f) Igihe nzabonera uwo tuzarushingana 2 (g) Uwo nkunda 3 (h) Mbonye uwo tubikorana 4	
8.46 Ese ujya ushyirwaho igitutu/agahato n'abandi bantu ngo ukore imibonano mpuzabitsina? Niba ari yego, ni kenshi, rimwe na rimwe cyangwa nta na rimwe?	Ni kenshi cyane 1 Rimwe na rimwe 2 Nta na rimwe 3	8.48
8.47 Ni bande bagushyiraho igitutu/agahato? Shyira uruziga ku bisubizo byose bishoboka	Inshuti 1 Abavandimwe 2 Inshuti zihariye 3 Abandi..... 4	
8.48 Ese utekereza ko hari icyo wakungukira mu gukora imibonano mpuzabitsina?	Yego, hari icyo byamarira 1 Oya, ntacyo byamarira 2	

IGICE CYA 9: INGARUKA KU BUZIMA

9.1 A. UMUHUNGU: Waba warigeze utera umukobwa/umugore inda? B. UMUKOBWA: Waba warigeze utwara/usama inda?	Umubare: _____ Nta na rimwe 0 Simbizi 9	9.4
9.2 Iyo nda byayigendekeye gute?	Ubu ndatwite 1 Inda yavuyemo ku bushake 2 Inda yikuyemo ntabushake 3 Umwana naramubaye 4 Simbizi 5	
9.3 Wigeze impungenge ko ushobora kwandura agakoko gatera SIDA cyangwa izindi ndwara zandurira mu mibonano mpuzabitsina ziturutse ku muntu mwakoranye imibonano mpuzabitsina?	Yego nagize impungenge cyane 1 Nagize impungenge mu rugero 2 Nta mpungenge nagize 3	
9.4 Waba warigenze kwipimisha agakoko gatera SIDA?	Yego 1 Oya 2	
9.5 Waba warigeze kwandura indwara zandurira mu mibonano mpuzabitsina?	Yego 1 Oya 2	
9.6 Waba warigeze ukenera ubuvuzi cyangwa ubujyanama bwerekeye ubuzima bw'imyororokere?	Yego 1 Oya 2	

Murakoze gusubiza ibi bibazo

UMUSOZO W'IBIBAZO

APPENDIX 22: INFORMATION SHEET AND ASSENT FOR EARLY ADOLESCENTS

Study Title

Early adolescents' knowledge, beliefs and behaviours regarding gender and sexuality in Rwanda: implications for their sexual experiences and health outcomes.

Invitation to participate

Greetings,

I would like to invite you to participate in this study by answering the interview questions. Your parents/guardians are aware of the study and have accepted that we ask you to participate if you so wish. Before this, you need basic information about the study. Please take time to read and understand that information. You can ask questions if you want to. You can decide whether or not to engage in the study. The total interview will take about 40 minutes

What is involved in the study

Involving you requires your assent. If you assent, we will ask some questions about your sources of information about sexual and reproductive health, your sexuality and gender knowledge, beliefs, behaviours, and health outcomes. Questions will be administered to you by myself. The total time of the interview will not exceed 40 minutes.

Why have I been selected?

You are the right person to answer questions related to the study. Your answers will be useful in understanding your knowledge, beliefs, and behaviours about gender and sexuality, as well as your sexual experiences and health outcomes. The results can be used to improve early adolescents' sexual and reproductive health.

Voluntary participation

You are free to decide whether or not to participate in the study. Your assent should be given voluntarily. If you assent, you have the right to withdraw your assent at any time without giving reasons and with no penalty. Your withdrawal will not affect you in any way.

Risks of being involved in the study

During the data collection process, your child may feel uncomfortable to provide answers to some interview questions. Do not worry; we will not force you to provide information. If you feel uncomfortable, counsellors are available to assist you.

Benefits of being in the study

You will get no direct benefit from your participation. However, the information you provide is useful to understand and promote early adolescents' knowledge, and beliefs about gender and

sexuality, and improve your sexual experiences and health outcomes. The results will also be used for policy formulation and interventions.

Confidentiality

The interview will be conducted in the strictest confidence, in a private and secure room. Only you and the interviewer will be in the room. All information you will provide will be strictly kept confidential, and will not be disclosed to anyone during and after the study. Only the research team members will be granted access to the collected information.

Anonymity

Data will be collected anonymously. Your names will not be collected; rather a code will be used to identify you. Your identification will be used in reporting the results of the study.

Contact details of the researcher:

If you wish to obtain more information about the study, you may contact the researcher, Mr. Valens Mbarushimana, School of Public Health, University of Rwanda College of Medicine and Health Sciences, telephone: +250 788 490 718, email: mbavalens@gmail.com or vmbarushimana@ur.ac.rw. You can also contact my supervisors, Dr Daphney Nozizwe Conco, Senior Lecturer, First Floor Room 104, Health and Society Division, School of Public Health, University of the Witwatersrand, 27 Saint Andrews Road, Parktown, 2193, Johannesburg, South Africa, email: daphney.Conco@wits.ac.za, telephone: Tel: +27 11 717 2502 / 083 282 4320; or Prof. Susan Goldstein, telephone: +27 11 717 2681 or +27828514080, email: drsuegoldstein@gmail.com.

Outputs of the research

The results of this research will be communicated to you at the school. In addition, the results will be shared with different authorities in Rwanda. Furthermore, they will be published as academic work in academic journals. Finally, the results will be compiled in a report that will be submitted to the University of the Witwatersrand, Johannesburg, South Africa for assessment and online publication.

Contact details of the Research Ethics Committees

The study has been approved by the research committees in Rwanda and South Africa. A principal function of this Committee is to safeguard the rights and dignity of all human subjects who agree to participate in a research project and the integrity of the research. For Rwanda, you can contact Professor Jonas Njunwa Kato at njunwakato@gmail.com or call him at +250 788490522; or Professor Jean Bosco Gahutu, at jbgahutu@yahoo.com or call +250 783340040. For South Africa, please contact Professor Clement Penny by telephone number 011 717 2301, or by e-mail at Clement.Penny@wits.ac.za. The telephone numbers for the Committee secretariat are 011 717 2700/1234 and the e-mail addresses are Zanele.Ndlovu@wits.ac.za and Rhulani.Mukansi@wits.ac.za.

Expenses and payments?

The study will involve no expense on your behalf.

What will happen if I do not carry on with the study?

If you do not carry on the study, all information collected with you will be destroyed and will not be used for final reporting of results.

What will happen to the results of the research study?

The results of this research will be communicated to you. In addition, they may be published as academic work. Finally, the results will be compiled in a report that will be submitted to the University of the Witwatersrand, Johannesburg, South Africa for assessment and publication.

Further information and contact details:

If you wish to obtain more information about the study, you may contact the researcher, Mr Valens Mbarushimana, by telephone: +250788490718, email: mbavalens@gmail.com or vmbarushimana@ur.ac.rw. You can also contact Dr Daphney Nozizwe Conco, Senior Lecturer, First Floor Room 104, Health and Society Division, School of Public Health, University of the Witwatersrand, 27 Saint Andrews Road, Parktown, 2193, Johannesburg, South Africa, email: daphney.Conco@wits.ac.za, telephone: Tel: +27 11 717 2502 / 083 282 4320; or Prof. Susan Goldstein, telephone: +27 11 717 2681 or +27828514080, email: drsuegoldstein@gmail.com.

Thank you for reading this study information document.

PARTICIPANT ASSENT SHEET

Project Title: Early adolescents' knowledge, beliefs and behaviours regarding gender and sexuality in Rwanda: implications for their sexual experiences and health outcomes.

1. I have been given a Participant Information Sheet for Minors, which explains what this study is about;
2. The study was explained to me and I understand what will happen if I take part;
3. I was given time to ask any questions I wanted to and was happy with the answers I was given;
4. I understand that I will not benefit from the study, should I agree to take part. I also understand that I will not be paid to take part in the study; taking part will not cost me anything either;
5. I have been given a range of contact details, repeated below, should I require further information at a later stage, or have any cause for concern over anything which is done to me during the study; and
6. I understand that even if I agree to take part in the study, I can change my mind later and stop being a part of the study
7. My parent(s) or guardian(s) know that I have been invited to take part in the study. They agree that I may do so, but the decision to take part is also mine.

Contact details:

Valens Mbarushimana, Principal Investigator, telephone no. +250 788490718, or by email: mbavalens@gmail.com

Dr Daphney Nozizwe Conco, Senior Lecturer, First Floor Room 104, Health and Society Division, School of Public Health, University of the Witwatersrand, 27 Saint Andrews Road, Parktown, 2193, Johannesburg, South Africa, email: daphney.Conco@wits.ac.za, telephone: Tel: +27 11 717 2502 / 083 282 4320;

Prof. Susan Goldstein, telephone: +27 11 717 2681 or +27828514080, email: drsuegoldstein@gmail.com.

Professor CB Penny, Chairperson of the Human Research Ethics Committee (Medical) at the University of Witwatersrand, on telephone no. 011 717 2301, or by e-mail at Clement.Penny@wits.ac.za.

Ms. Z Ndlovu or Mr Rhulani Mkansi, Committee Secretariat, telephone nos.: 011 717 2700 or 1234, or by e-mail at: Zanele.Ndlovu@wits.ac.za or Rhulani.Mkansi@wits.ac.za

Print name of Participant	Place	Signature	Date (day/month/year)

Print the name of Parent or Guardian (Day/month/year)	Place	Signature	Date

APPENDIX 23: PARTICIPANTS INFORMATION SHEET (KINYARWANDA VERSION)

AMAKURU KU BUSHAKASHATSI

Umutwe w’ubushakashatsi: Ubumenyi, imyizerere n’imyifatire y’abangavu n’ingimbi bijyanje n’ubuzima bw’imyororokere mu Rwanda: Ingaruka ku mikoreshereze y’ibitsina no ku buzima bwabo.

Gukangurira gusubiza

Muraho,

Nifuza ko mwasubiza ibibazo bijyanye n’ubu bushakashatsi. Abarezi banyu basobanuriwe ibijyanye nabwo, kandi bemeye ko twabasaba gusubiza ibibazo bijyanye nabwo. Namwe mufite uburenganzia bwo kubaza ibibazo bijyanye nabwo; ndetse n’ubwo gufata icyemezo cyo kubisubiza ku bushake. Gusubiza ibi ibibazo bimara nibura iminota 40.

Ibisabwa usubiza

Murasabwa kwemera gusubiza ibibazo by’ubushakashatsi.

Uko abangavu n’ingimbi batoranyijwe

Abangavu n’ingimbi nibo bonyine basubiza neza ibibazo by’ubu bushakashatsi. Ibisubizo byabo bizagira uruhare mu kwita no guhindura ubuzima bwabo bw’imyororokere.

Ubushake bwo gusubiza

Ufite uburenganzira ku gufata icyemezo cyo gusubiza ibibazo by’ubu bushakashatsi. Nyamara ushobora kureka gusubiza ibi ibibazo isaha iyo ari yo yose nta bisobanuro utanze, kandi ibi nta ngaruka bizakugiraho.

Ingaruka zo gusubiza ibibazo.

Nta ngaruka zizava ku gusubiza ibibazo byubu bushakashatsi. Nta gahato karimo. Niwumva utishimiye gusubiza bimwe mu bibazo bijyanye nabwo, ubitumenyeshe turagufasha.

Inyungu z’ubu bushakashatsi

Nta nyungu zitaziguye uzakura muri ubu bushakashatsi. Nyamara amakuru uzatanga azafasha mu guteza imbere ubumenyi, imyizerere, n’imyifatire y’abangavu n’ingimbi, ndetse no kugabanya ingaruka bahura nazo mu buzima bwabo.

Ibanga mu bushakashatsi

Amakuru mutanga azabikwa mu ibanga rikomeye kandi ntago azahabwa uwo ari we wese haba mu bushakashatsi ndetse na nyuma yabwo. Itsinda ry'abashakashatsi niryo ryonyine rizamenya ibisubizo byanyu.

Kudashyira amazina yanyu ku bisubizo

Amazina yanyu ntago azashyirwa ku bisubizo byanyu. Hazakoreshe imibare mu kugararagaza umwirondoro wanyu ndetse no mu kwandika ibyavuye mu bushakashatsi.

Umwirondoro w'itsinda ry'abashakashatsi

1. Mbarushimana Valens, Kaminuza y'u Rwanda, Koleji y'ubuvuzi n'Ubuzima; telephone: +250 788 490 718, email: mbavalens@gmail.com
2. Dr Daphney Nozizwe Conco; Kaminuza ya Witwatersrand, Ishuli ry'Ubuzima Rusange, email: daphney.Conco@wits.ac.za, telephone: Tel: +27 11 717 2502 / 083 282 4320
3. Prof. Susan Goldstein, Kaminuza ya Witwatersrand, Ishuli ry'Ubuzima Rusange, telephone: +27 11 717 2681 or +27828514080, email: drsuegoldstein@gmail.com

Komite z'ubushakashatsi

Ubu bushakashatsi bwemewe na Komite zishinzwe ubushakashatsi zo mu Rwanda na Afurika y'Epfo. Izi Komite zishinzwe kugenzura iyubahirizwa ry'uburenganzira n'ubusugire bw'abantu bemera kugira uruhare mu bushakashatsi.

- Mu Rwanda: Uhagarariye Komite ni Dr Stefan Jansen, telefoni 0784575900, email : sjansen.ur@gmail.com
- Muri Afurika y'Epfo: Professor Clement Penny, telefone: 011 717 2301, e-mail: Clement.Penny@wits.ac.za. Telefoni ya Komite ishinze Ubushakashatsi ni 0117172700/1234 naho e-mail ni Zanele.Ndlovu@wits.ac.za cyangwa Rhulani.Mukansi@wits.ac.za.

Ikiguzi

Nta kintu uzasabwa kwishyura kijyanye n'ubu bushakashatsi

Guhagarika gusubiza ibibazo

Amakuru yose watanze azirengagizwa mu gihe uzaba uhagaritse kugira uruhare muri ubu bushakashatsi.

Ibizava mu bushakashatsi

Muzamenyeshwa ibizava muri ubu bushakashatsi. Hazakorwa kandi igitabo gikubiyemo ibizava nu bushakashatsi kizahabwa Kaminuza ya Witwatersrand, ari nayo izagisuzuma ikanagitangariza abandi.

Ibindi bisobanuro bijyane n'ubushakashatsi

Ku bindi bisobanuro, wabaza abagize itsinda ry'abashakashatsi cyangwa abagize Komite z'ubushakashatsi bavuzwe hejuru.

Murakoze gusoma amakuru ajyanye n'ubu bushakashatsi.

KWIYEMERERA KUGIRA URUHARE MU BUSHAKASHATSI

Umutwe w'ubushakashatsi: Ubumenyi, imyizerere n'imyifatire y'abangavu n'ingimbi bijyanje n'ubuzima bw'imyororokere mu Rwanda: Ingaruka ku mikoreshereze y'ibitsina no ku buzima bwabo.

Ndemeza ko :

1. Nahawe amakuru ajyanye n'ubushakashatsi n'icyo bugamije
2. Nasobanuriwe kandi numvise neza ibizakorwa mu bushakashatsi
3. Nahawe umwanya wo kubaza ibibazo kandi nayuzwe n'ibisubizo byatanze
4. Numvise ko nta nyungu nzakura muri ubu bushakashatsi, ko ntacyo nzishyura cyangwa ngo nishyurwe
5. Nahawe urutonde rw'aho nabaza andi makuru ajyanye n'ubu bushakashatsi ndetse n'ikindi cyose cyabaturukaho
6. Numvise neza ko nubwo nemeye kugira uruhare mu bushakashatsi nshobora kwisubiraho nkabuvamo.
7. Abarezi banjye bazi ko nasabwe kugira uruhare mu bushakashatsi. Babyemeye kandi najye nabyemeye.

Aho kubariza amakuru ku bushakashatsi:

1. Valens Mbarushimana, Umushakashatsi Mukuru, Kaminuza ya Witwatersrand, Afurika y'Epfo, telephone: +250 788490718; email: mbavalens@gmail.com
2. Dr Daphney Nozizwe Conco; Kaminuza ya Witwatersrand, Afurika y'Epfo, Telefoni: +27117172502 / 083 282 4320; email: daphney.Conco@wits.ac.za
3. Prof. Susan Goldstein, telefoni: +27117172681 cyangwa +27828514080, email: drsuegoldstein@gmail.com.
4. Professor CB Penny, Umuyobozi wa Komite ishinze Ubushakashatsi mu Buvuzi, telefoni: 0117172301, e-mail: Clement.Penny@wits.ac.za.
5. Ms. Zanele Ndlovu cyangwa Mr Rhulani Mkansi, Ubunyamabanga bwa Komite, telefoni 0117172700 cyangwa 1234; e-mail: Zanele.Ndlovu@wits.ac.za cyangwa Rhulani.Mkansi@wits.ac.za

APPENDIX 24: PARTICIPANT ASSENT SHEET

Project Title: Early adolescents' knowledge, beliefs and behaviours regarding gender and sexuality in Rwanda: implications for their sexual experiences and health outcomes.

8. I have been given a Participant Information Sheet for Minors, which explains what this study is about;
9. The study was explained to me and I understand what will happen if I take part;
10. I was given time to ask any questions I wanted to and was happy with the answers I was given;
11. I understand that I will not benefit from the study, should I agree to take part. I also understand that I will not be paid to take part in the study; taking part will not cost me anything either;
12. I have been given a range of contact details, repeated below, should I require further information at a later stage, or have any cause for concern over anything which is done to me during the study; and
13. I understand that even if I agree to take part in the study, I can change my mind later and stop being a part of the study
14. My parent(s) or guardian(s) know that I have been invited to take part in the study. They agree that I may do so, but the decision to take part is also mine.

Contact details:

Valens Mbarushimana, Principal Investigator, telephone no. +250 788490718, or by email: mbavalens@gmail.com

Dr Daphney Nozizwe Conco, Senior Lecturer, First Floor Room 104, Health and Society Division, School of Public Health, University of the Witwatersrand, 27 Saint Andrews Road, Parktown, 2193, Johannesburg, South Africa, email: daphney.Conco@wits.ac.za, telephone: Tel: +27 11 717 2502 / 083 282 4320;

Prof. Susan Goldstein, telephone: +27 11 717 2681 or +27828514080, email: drsuegoldstein@gmail.com.

Professor CB Penny, Chairperson of the Human Research Ethics Committee (Medical) at the University of Witwatersrand, on telephone no. 011 717 2301, or by e-mail at Clement.Penny@wits.ac.za.

Ms Z Ndlovu or Mr Rhulani Mkansi, Committee Secretariat, telephone nos.: 011 717 2700 or 1234, or by e-mail at: Zanele.Ndlovu@wits.ac.za or Rhulani.Mkansi@wits.ac.za

Print name of Participant	Place	Signature	Date (day/month/year)

Print name of Parent or Guardian	Place	Signature	Date (Day/month/year)

KWIYEMERERA KUGIRA URUHARE MU BUSHAKASHATSI

Umutwe w'ubushakashatsi: Ubumenyi, imyizerere n'imyifatire y'abangavu n'ingimbi bijyanje n'ubuzima bw'imyororokere mu Rwanda: Ingaruka ku mikoreshereze y'ibitsina no ku buzima bwabo.

Ndemeza ko :

8. Nahawe amakuru ajyanye n'ubushakashatsi n'icyo bugamije
9. Nasobanuriwe kandi numvise neza ibizakorwa mu bushakashatsi
10. Nahawe umwanya wo kubaza ibibazo kandi nayuzwe n'ibisubizo byatanzwe
11. Numvise ko nta nyungu nzakura muri ubu bushakashatsi, ko ntacyo nzishyura cyangwa ngo nishyurwe
12. Nahawe urutonde rw'aho nabaza andi makuru ajyanye n'ubu bushakashatsi ndetse n'ikindi cyose cyabaturukaho
13. Numvise neza ko nubwo nemeye kugira uruhare mu bushakashatsi nshobora kwisubiraho nkabuvamo.
14. Abarezi banjye bazi ko nasabwe kugira uruhare mu bushakashatsi. Babyemeye kandi najye nabyemeye.

Aho kubariza amakuru ku bushakashatsi:

6. Valens Mbarushimana, Umushakashatsi Mukuru, Kaminuza ya Witwatersrand, Afurika y'Epfo, telephone: +250 788490718; email: mbavalens@gmail.com
7. Dr Daphney Nozizwe Conco; Kaminuza ya Witwatersrand, Afurika y'Epfo, Telefoni: +27117172502 / 083 282 4320; email: daphney.Conco@wits.ac.za
8. Prof. Susan Goldstein, telefoni: +27117172681 cyangwa +27828514080, email: drsuegoldstein@gmail.com.
9. Professor CB Penny, Umuyobozi wa Komite ishinze Ubushakashatsi mu Buvuzi, telefoni: 0117172301, e-mail: Clement.Penny@wits.ac.za.
10. Ms. Zanele Ndlovu cyangwa Mr Rhulani Mkansi, Ubunyamabanga bwa Komite, telefoni 0117172700 cyangwa 1234; e-mail: Zanele.Ndlovu@wits.ac.za cyangwa Rhulani.Mkansi@wits.ac.za

Amazina

Ahantu

Umukono

Itariki (umunsi/ukwezi/Umwaka)

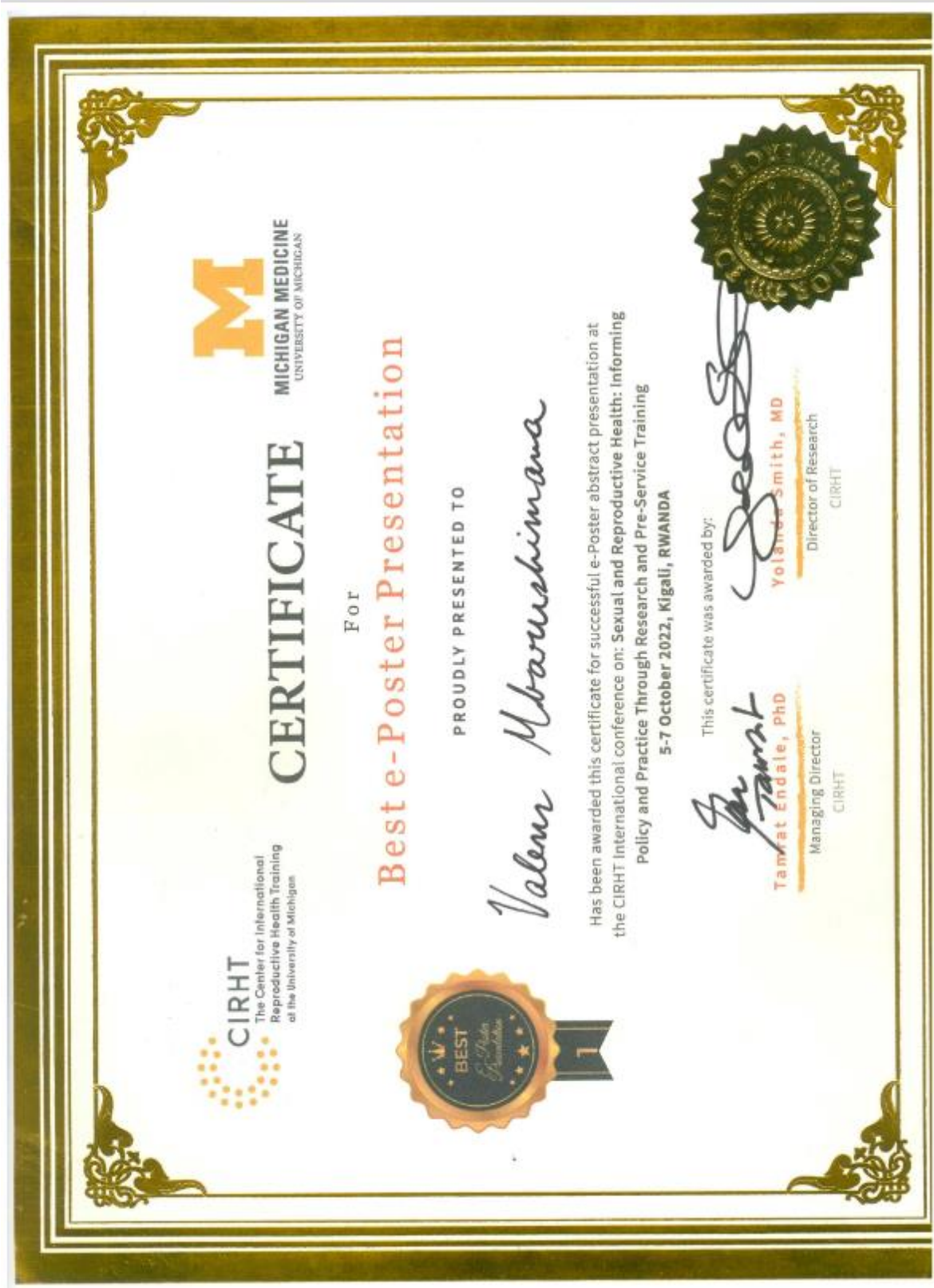
APPENDIX 25: LIST OF SECONDARY SCHOOLS SELECTED FOR THE STUDY

District		Public schools		Private schools	
District	Township	School name	Sector	School name	Sector
Nyarugenge	Urban	G.S Camp Kigali	Nyarugenge	G. S. APACE	Nyakabanda
		G.S. Nzove	Kanyinya	G.S. Sainte Famille	Muhima
Gasabo	Urban	G.S Kacyiru II	Kacyiru	G.S Kagugu Catholic	Kinyinya
		G.S. Rugando	Kimihurura	G.S. Gihogwe Catholic	Gatsata
Rwamagana	Rural	G. S. Bujyujyu	Muyumbu	G.S. Rwamagana Catholic Saint Vincent de Paul	Kigabiro
		G.S Nyakaliro	Nyakaliro	G. S. Rwamagana Protestant	Kigabiro
Ruhango	Rural	E.S Murama	Bweramana	G.S. Indangaburezi	Ruhango
		College Karambi	Kabagari	E. Science Byimana	Byimana

APPENDIX 26: SRHR KNOWLEDGE AND ATTITUDES IN CATEGORIES

SRHR knowledge domains	Frequency	Percentage
Sexuality knowledge (n=736)		
Poor knowledge (<50%)	290	39.4
Moderate knowledge (50-79%)	368	50
Excellent knowledge (80%+)	78	10.6
Knowledge of contraceptive methods (=559)		
Poor knowledge (<50%)	337	60.29
Moderate knowledge (50-79%)	211	37.75
Excellent knowledge (80%+)	11	1.97
Knowledge about HIV/AIDS and STDs (=615)		
Poor knowledge (<50%)	116	18.86
Moderate knowledge (50-79%)	410	66.67
Excellent knowledge (80%+)	89	14.47
Knowledge about condoms (n=603)		
Poor knowledge (<50%)	209	34.66
Moderate knowledge (50-79%)	382	63.35
Excellent knowledge (80%+)	12	1.99
Attitudes towards sexual norms (n=711)		
Unfavourable attitude ($\leq$ 50%)	73	10.27
Favourable attitude (>50%)	638	89.73
Attitudes towards gender (n=717)		
Less gender-equitable attitude ($\leq$ 50%)	24	3.35
More gender-equitable attitude (>50%)	693	96.65

APPENDIX 27: BEST EPOSTER PRESENTATION



APPENDIX 28: EPOSTER ABSTRACT



OCTOBER 5 – 7, 2022

ePOSTER ABSTRACTS

EPA68

Does access to sexual and reproductive health and rights information affect very young adolescents' knowledge in Rwanda? Evidence from a school survey

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Background: Access to sexual and reproductive health information, especially during adolescence, is a universal right advocated by the United Nations. SRHR information is crucial for young adolescents to increase their knowledge and reduce risks and negative sexual and reproductive health outcomes, including HIV and unintended pregnancy. This study assessed participants' SRHR knowledge and investigated whether very young adolescents (VYAs) with access to SRHR information have more knowledge than those who do not have that access.

Methods: We conducted a descriptive cross sectional study among 811 very young adolescents aged 12-14 in 16 secondary schools in Rwanda. We used a multi-level sampling strategy that involved two districts in urban and rural settings, type of school (public versus private), school grades (grade 1 versus grade 2), and gender (male versus female). The study sample consisted of 398 males (49%) VYAs and 413 female VYAs (51%); 117 (14%) VYAs aged 12, 247 (30%) aged 13 and 447 (55%) aged 14, with overall mean age of 13.41 (95%CI: 13.36-13.46), 13.45 (95%CI: 13.38-13.52) for males and 13.37 (95%CI: 13.30-13.44) for females. We self-administered the illustrative questionnaire for interview-Survey with young people developed by Cleland for the World Health Organization. The questionnaire had items on participants' characteristics (age, grade, gender), ever access to SRHR information (puberty or pregnancy), sexuality knowledge (Six items with yes/no answers, range: 0-6), knowledge of contraceptive methods (12 items with yes/no answers, range: 0-12), condom knowledge and attitudes (14 items with yes/no answers, range: 0-14), and HIV and AIDS (13 items with yes/no answers, range: 0-13). Correct answers to questions were scored as "1" and "0" otherwise. We summarized data using frequencies, mean, standard deviation, 95% confidence intervals

and independent sample t-test. Institutional Review Board of the College of Medicine and Health Sciences at the University of Rwanda (approval notice number: 401/CMHS IRB/2018), the National Council for Science and Technology in Rwanda (no. NCST/482/136/2019), and the Human Research Ethics of the University of the Witwatersrand (study reference number: M190303) approved this study. Before data collection, we sought parental informed consent and very young adolescents' informed assent. Data collection took place in classrooms, but participants responded anonymously and confidentially to the questionnaire and handed it to the research team member after completion.

Results: Most participants (92%, 95%CI: 90-94%) declared having ever attended classes on puberty or reproduction. Participants' overall mean scores were low on sexuality knowledge (2.8±1.3/6), condom knowledge and attitudes (7.1±2.6/14), contraceptive methods (5.0±2.1/12), and HIV and AIDS (8.4±2.1/13). Access to SRHR information was significantly associated with higher scores on sexuality knowledge (2.9±1.3 versus 2.2±1.4, $p<0.001$), condom knowledge and attitudes (7.1±2.5 versus 5.8±3.1, $p<0.001$). However, participants' knowledge scores were not significantly different on the contraceptive methods (5.0±2.1 versus 4.9±1.9, $p=0.787$) and HIV and AIDS (8.4±2.1 versus 7.9±2.2, $p=0.182$).

Conclusion: Despite high access to SRHR information, very young adolescents in Rwanda have low SRHR knowledge. Educating very young adolescents on SRHR may significantly increase their SRHR knowledge and contribute to addressing SRHR risks and negative health outcomes during adolescence.

RESEARCH

Open Access



“Such conversations are not had in the families”: a qualitative study of the determinants of young adolescents’ access to sexual and reproductive health and rights information in Rwanda

Valens Mbarushimana^{1,2*}, Daphney Nozizwe Conco¹ and Susan Goldstein³

Abstract

Background: Access to sexual and reproductive health and rights (SRHR) information during adolescence has become a global concern. This study explored factors that enable or prevent young adolescents from accessing to SRHR information from the perspective of the key informants in Rwanda.

Methods: We conducted a qualitative study using semi-structured interviews with 16 purposively selected key informants from public and private institutions in Rwanda. This selection was based on their positions and expertise in delivering SRHR information to adolescents. The interview guide questions were designed based on the social-ecological theoretical framework of adolescent health. The interview transcripts were recorded, transcribed, translated and thematically analysed in Nvivo 11.

Results: The study reflected that multiple enablers and barriers at the individual, relationship, community and societal levels determined young adolescents’ access to SRHR information. These determinants include information-seeking behaviour and age of starting sexuality education at the individual level; and parents’ limited communication with young adolescents due to taboos, lack of skills, limited parental availability, beliefs, lack of appropriate language and peer norms at the relationships level. Enablers and barriers at the community level were the diversity of SRHR sources, the scope of sexuality education programmes, and cultural and religious beliefs. Finally, the perceived enablers and barriers at the societal level consisted of inadequate resources, inappropriate SRHR policy-making processes and unfriendly SRHR laws.

Conclusion: Enabling access to SRHR information requires addressing multiple factors within the social-ecological environment of young adolescents. Addressing these factors may facilitate improved access to SRHR information for this age group.

Keywords: Gender, Rwanda, Sexual and reproductive health and rights, Sexuality education, Young adolescent

Background

Access to sexual and reproductive health and rights (SRHR) information during adolescence is a basic human right [1] that helps adolescents to fully develop their potential [2]. The International Conference on Population

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and Development (ICPD) held in Cairo in 1994 called for the comprehensive sexuality education (CSE) of adolescents to respond to their need for information and skills for a better adolescent SRHR [3]. CSE aims to deliver information on human sexuality and sexual and reproductive health (SRH), gender equity, and human rights, and to help adolescents adopt safe and responsible sexual behaviours [3]. Timely access to high-quality SRHR information plays a central role in adolescents' healthy behaviours and safer sexual practices [4]. Goal 3, targets 3–7, of the Sustainable Development Goals seeks to ensure universal access to SRHR information and the integration of SRH into national programmes by the year 2030 [5]. Research indicates that adolescents wish to receive SRHR information, but that available SRHR information sources may not necessarily be acceptable to adolescents [6]. However, despite the benefits from SRHR information, adolescents experience limited access to SRH information, resulting in poor SRH knowledge, early marriage, pregnancy, and poor decision-making in SRH matters [7].

Young adolescents need accurate information about the biological, socio-cultural, psychological, relational and spiritual dimensions of sexuality [8]. Early adolescence provides a window of opportunity to intensify the delivery of such SRHR information [9, 10]. Through this socialisation process, young adolescents become significantly aware of their bodies, gender and sexuality [11]. Family members, media, and social institutions teach young adolescents appropriate behaviours [12, 13] and norms for interacting, forming relationships, and engaging in social and sexual behaviours [14]. These learned sexual behaviours may have implications on their future sexual health [12].

It is important to understand the layers of young adolescents' access to SRHR information. Sexuality socialisation processes occur in young adolescents' socioecological environment [10]. This large environment consists of interrelated factors at individual, relationship, community, and society levels [15]. In the current study, we used the socioecological framework of adolescent SRH [16] to understand young adolescents' access to SRHR information in Rwanda.

Access to information in Rwanda has significantly improved over the last decade. There has been an expansion in media and information and communication technology, and increased licensed radio broadcasts, shows on television stations, internet subscriptions, and mobile telephony penetration [17], indicating an improved access to information for the general population, including young adolescents. Furthermore, Rwanda has created different policies to promote young adolescents' health [18–20] and put youth friendly corners in health facilities to educate young

people about SRH [21]. In addition, CSE has been delivered in primary and secondary schools since 2016 [19, 22] with the aim to increase knowledge of sexuality, gender, and other reproductive issues, including sexually transmitted infections [23].

Despite the significant efforts to educate adolescents on SRHR in Rwanda, young adolescents experience adverse sexual health outcomes. Five percent of female adolescents and 10% of male adolescents engage in sexual activity before they are 15 years old [24]. Pregnancy among schooling girls (10–18 years) remains a country-wide concern [18]. Furthermore, previous studies indicate that young people lack adequate SRHR knowledge; and social prohibition prevents them from obtaining information on SRH [25] and HIV infection [21]; and importantly, adolescents face cultural mores and religious beliefs as major barriers to SRH services [21], including SRHR information.

While the global developmental agenda focuses on enabling universal access to SRH information [3, 5], extant literature does not have sufficient evidence on this aspect among young adolescents. Generally, research involving young adolescents in low- and middle-income countries, including Rwanda, is scant [11, 26]. Studies involving young adolescents have focused on gender norms [9, 27, 28] and attitudes [14]. Assessing sexual wellbeing during early adolescence, Kagesten et al. found that SRHR knowledge and communication were generally low in urban Indonesia [11]. Koenig et al. assessed SRH communication patterns in early adolescence and found that socioecological factors such as older age and pubertal onset are associated with SRH communication [29]. Bankole et al. studied sexual knowledge and information sources for very young adolescents in four sub-Saharan countries. They found that young adolescents lack deep knowledge about pregnancy and HIV prevention and access to multiple SRHR sources of information [30]. Finally, Juariah conducted a baseline survey to assess the reproductive health knowledge of young adolescents and found that their knowledge was poor [31]. It has been acknowledged that access to SRHR information improves sexual knowledge [32, 33] and leads to positive SRHR outcomes [34]. However, there is no clear evidence in the literature on the determinants of access to SRHR information among young adolescents. This study seeks to contribute to existing evidence on SRHR for young adolescents, specifically on the determinants of access to SRHR information for this age group. From a social-ecological perspective, this study aimed to explore key informants' views on the determinants of accessing SRHR information among young adolescents in Rwanda.

Methods

Study setting

We conducted this study in Rwanda, a landlocked country located in Eastern Africa, with a surface area of 26,338 square kilometres. Rwanda is bordered by Uganda in the north, Tanzania in the east, Burundi in the south, and the Democratic Republic of Congo in the west [35]. The Fifth Rwanda Population and Housing Census of 2016 indicated that 52% of the population is younger than 20 years, with young adolescents (10–14 years) representing 13.7% of the general population [36]. The Rwandan population is mainly rural (83%) [37]. The age of sexual consent and legal marriage for all people is 18 and 21 years, respectively [38].

Study design

This study employed qualitative research methods. Semi-structured interviews with key informants was used to explore their views on the enablers and barriers to young adolescents' access to SRHR information.

Sampling and recruitment of participants

The study used a purposive sampling strategy to recruit participants who work for institutions that disseminate SRHR information to young adolescents and youths in Rwanda. The researchers contacted 19 relevant institutions through official correspondence. In total, 16 participants from these institutions were available for interviews after several attempts by the researchers to reach their institutions. These participants included nine (six females and three males) from public institutions, six participants (five males and one female) from faith-based organisations (FBOs), and one female participant from a non-governmental organisation (NGO). The public institutions involved in this research were the Ministry of Education; Ministry of Gender and Family Promotion; Ministry of Sports and Culture; Ministry of Health; Rwanda Biomedical Centre; Rwanda National Children's Commission; Rwanda Education Board; and the urban districts of Gasabo and Nyarugenge. The FBOs that provided participants included the Roman Catholic Church, the Seventh-Day Adventist Church, the Pentecostal Church, and the Rwanda Muslim Community.

Based on their availability for interviews (as provided by their institutions), we recruited participants who consented to the study. We did not include participants from institutions that did not respond to the researchers' request for data collection after repeated follow-ups.

Data collection

Data collection was conducted between July and October 2019. Upon approval by the participants' institutions, the researchers made the necessary arrangements

to contact participants and determine the modalities of the interviews. Before the interviews, we provided participants with the study information and time to ask relevant questions. Next, researchers invited each participant to sign an informed written consent form. Finally, with the participants' consent, the researchers digitally audio recorded the interviews. The interview language was Kinyarwanda for 15 interviews and English for one interview. Each interview lasted between 30 and 60 min. The interview guide used during the interviews covered several topics, including participants' views on enablers and barriers to accessing SRHR information among the target age-group population.

Data management and analysis

The audio-recorded interviews were transcribed verbatim in Kinyarwanda, and professional translators translated these transcripts into English. We used QSR Nvivo 11 (QSR International Pty) for Windows to analyse the data. Using the social-ecological framework of adolescent health, we conducted deductive analysis of perceived enablers and barriers to young adolescents' access to SRHR information. Two researchers repeatedly read all the interview transcripts independently to familiarise themselves with the contents, and they coded the same data and compared their coded outputs to identify similarities and differences. Common agreement between these researchers allowed resolution of discrepancies in data coding. Next, the two researchers started creating and condensing meaning units, which were later organised into codes. These codes were then organised into sub-themes, which were finally organised into the levels of the social-ecological framework of adolescent health, namely individual, relationship, community and societal levels (Fig. 1) [16]. Finally, we presented the findings in a narrative form and used quotations to illustrate the data description at each framework level.

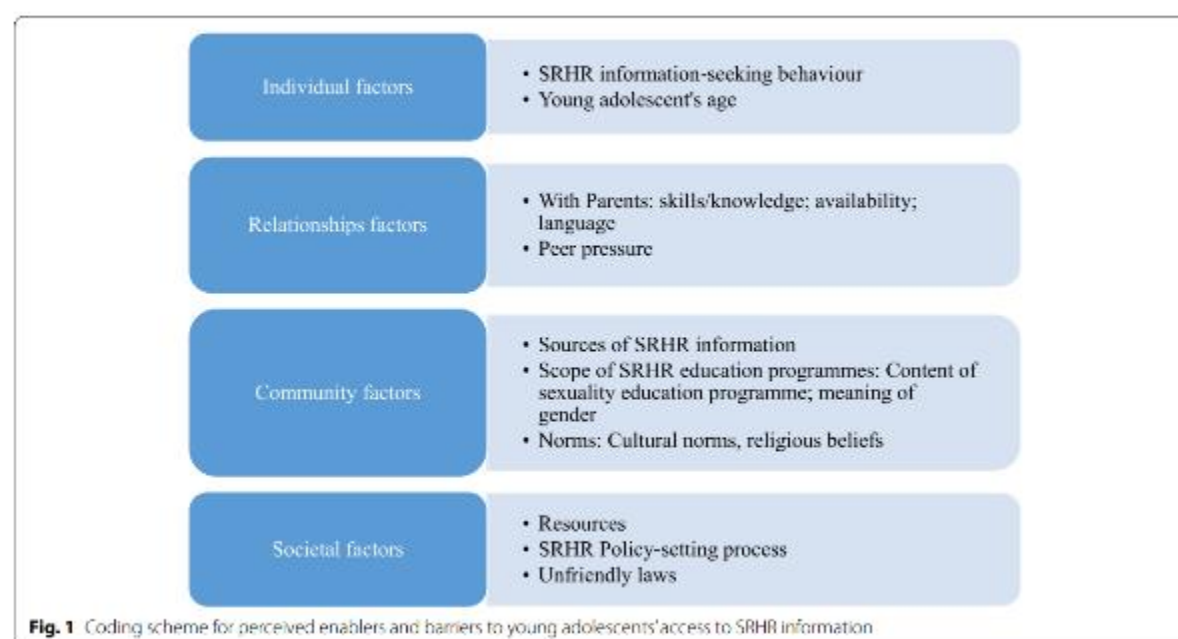
Results

Perceived determinants of young adolescents' access to SRHR information

We asked the participant to reflect on the determinants of access to SRHR information for young adolescents. The analysis of their responses yielded several factors at individual, relationship, community and societal levels of adolescent health.

Individual factors

The participants reflected on two determinants of accessing SRHR information for young adolescents at the individual level. These determinants were adolescents' information-seeking behaviour and the appropriate age for starting sexuality education.



SRHR information-seeking behaviour

The participants discussed several factors related to young adolescents' access to SRHR information at the individual level. The participants reported that young adolescents are curious and seek sexual health information from various sources. Nevertheless, the study participants noted that young adolescents are often unable to satisfy their curiosity by asking their parents and thus harbour misconceptions. The participants thought that young adolescents feel shy to ask questions and think their parents consider questions disrespectful. In addition, participants felt that young adolescents do not know where to obtain the right SRHR information despite their curiosity about SRHR. One participant said the following about what influences young adolescents access to SRHR information at the individual level:

"They [young adolescents] do not know they need information. When we talk to them at school, we find out that they are curious, but they give us some wrong information about sexual and reproductive health. They do not know that they need the right information." (P16, male, public institution)

In addition, participants said that young adolescents are scared to ask for SRHR information from their parents and look to the celebrities they choose as their role models and around whom they build their identity. Some participants illustrated why young adolescents seeking information from their parents as follows:

"They [young adolescents] are not comfortable discussing their reproductive issues. They believe their parents will consider them as disrespectful, bad-mannered people, and uneducated". (P10, female, public institution)

"They [young adolescents] search for information about football or movie stars to know them better and choose them as their role models". (P01, female, public institution)

Age of initiating SRHR education

The participants indicated that it is important to start receiving SRHR education during early adolescence, but they did not specify the exact age. When asked about the age at which sexuality education should be initiated, some participants felt that it should begin as early as possible, and others suggested that SRHR education should be initiated at ten years of age. Responding to the question about the exact age to initiate SRHR education, some of the participants said the following:

"Even before they grow into young adolescents, they should be taught about sexuality according to their developmental age." (P01, female, public institution)

"We realised that at ten years, children are curious and start being exposed to those challenges of sexual and reproductive health information. So parents can

prepare their children by starting to talk to them about sexuality.” (P16, male, public institution)

Relationship factors

The participants noted that access to SRHR by young adolescents is influenced mainly by two factors at the relationships level namely communication between parents and young adolescents, and peer influences.

Parent–child interaction

The findings indicated that sexuality is not a topic that is discussed between children and their parents for several reasons. They reflected that it is culturally inappropriate for parents to deliver sexuality information to children because sexuality is a taboo topic and has been for many generations. In addition, parental reluctance to engage with children about SRHR information is due to the belief that they may start behaving badly once they are informed. According to the participants, this attitude comes from the cultural belief that SRHR education encourages children to initiate sexual activity. Two participants explained why parents do not communicate adequately with their children on SRHR as follows:

“The Rwandan culture does not encourage parents to discuss reproductive health with children. Many people don’t talk about it. It is a taboo subject. It is due to the way people are raised.” (P10, female, public institution)

“People think that giving information to children means encouraging them to have sex.” (P16, male, public institution)

One participant insisted that parents send young adolescents to other family members (such as aunts) for specific sexual information, which proves that sexuality cannot be discussed at the family level. We asked participants with whom such discussion takes place, and one participant answered as follows:

“Sending young adolescents to their aunts proves that sexuality cannot be discussed at the family level.” (P14, female, public institution)

Furthermore, the participants recognised that parents’ knowledge and attitudes play a key role in delivering sexuality education to young adolescents. They noted that some parents do not provide sexual information to young adolescents because of their own limited knowledge, which is explained by one participant in the quotation below. However, another participant reflected that some educated parents are able to communicate with their children on SRHR:

“Parents do not have enough information. Sometimes we ask them to teach their children but they don’t have that knowledge either.” (P14, female, public institution)

“Parents’ education affects their children’s sexuality knowledge. Educated parents with open discussions have well-informed children.” (P12, male, FBO)

Parents’ availability is another important factor to access to SRHR information for young adolescents. The participants perceived that changes in family living conditions have resulted in parents being absent from their home and in the use of housekeepers who cannot adequately address children’s SRHR information needs. All participants noted that parents do not have enough time to engage with their children because of limited parental availability. According to the participants, parents might discuss sexuality if they spend more time with their children. One of the participants shared the following:

“I have noticed that various topics can come up when parents talk to their children for a long time. However, when time is short, they do not have the means to discuss sensitive topics such as sexuality. Parents come home tired and asking if their children did their homework and had proper meals.” (P08, male, FBO)

Language, as a medium of discussion, was another concern for providing SRHR information to young adolescents, specifically the lack of appropriate words to speak about genital parts in Kinyarwanda. The participants noted that words for genitals are perceived as very rude, uncommon, and hard to say to children. Therefore, they indicated that they use alternative words in Kinyarwanda, which can lead to confusion. Nevertheless, the participants said they were comfortable talking about sexuality in foreign languages such as French or English. The participants further mentioned a booklet to guide SRH communication with young adolescents titled ‘*Tuganire Mwana Wanjye*’ (Let’s Talk, My Child) that can help in parent–child discussions on sexuality, and thus, help parents find the appropriate words in Kinyarwanda. The participants said the following about the language and available ways to overcome the language challenges:

“For instance, saying the word ‘penis’ in Kinyarwanda is considered a problem, but it sounds fine in French or English.” (P16, male, public institution)

“We developed that book to encourage parents to overcome fears about discussing [sexuality] with their children. The book aims to give parents words they can use while talking to their children and help

them to face some of the problems ahead as they grow up." (P01, female, public institution)

Peer pressure

The participants perceived peer pressure as another determinant of young adolescents accessing SRHR information. According to this study, peers play a significant role in delivering SRHR information to young adolescents, especially about sexual relationships. The participants noted that male and female adolescents have different expectations, and boys perceive girls as money spenders while girls consider boys as providers and hunters for sex. According to the participants, these norms mean that girls need to have sex if they want to get any money or presents from boys. A participant explained it as follows:

"Boys should always pay everything for the girl. ... if he spends money on a girl according to the norm, she should also pay him back. Therefore, he expects that pay to be sex." (P02, female, NGO)

In addition, the participants thought that peer pressure contributed to spreading SRHR information that contradicts the social expectations of girls about remaining virgins until marriage by expecting them to keep their boyfriends by proving love through sexual intercourse. They also revealed boys are entitled to have multiple sex partners. A participant illustrated this contradiction between peer and social norms as follows:

"Peers spread messages that are in contrast with the social culture or expectation of being a virgin until marriage. For example, 'a real boy has sex with multiple girls'; or similarly for a girl, 'you're not a real girl until you lose your virginity.'" (P13, female, public institution)

Community factors

The determinants of access to SRHR information among young adolescents included the sources of information, the scope of SRHR education and various cultural and religious norms.

Sources of SRHR information

This section presents participants' perspectives on various sources as enablers of access to SRHR information for young adolescents. The participants indicated that young adolescents access SRHR information through multiple sources and that these sources have diversified because of technological advancement. Some of the sources that emerged include mobile phones and television. When asked about which sources are delivering

SRHR information, one participant FBO outlined them as follows:

"They [young adolescents] get such information from their friends, parents. Schools deliver such information as well. They also access information through information and communication technology, the internet, mobile phones, YouTube, and others." (P03, female, FBO)

Furthermore, the participants reported that young adolescents seek SRHR information from social media sources, including YouTube, Facebook, WhatsApp, and the internet. However, they noted that some internet sources spread incorrect SRHR information, and young adolescents cannot differentiate between correct and incorrect information. The participants further highlighted the disparities in SRHR sources between rural and urban settings and stated that young adolescents from the urban areas have social media as their main sources of information. In contrast, young adolescents from rural areas rely on schools to obtain SRHR information. Some of the participants said the following:

"In towns, they get information from social media..., in the village, I would not put social media on the first place. I would say that they get information from schools." (P12, male, FBO)

"The reality is that they access right and wrong information and they are not good at deciding which information is okay and which is not." (P02, female, NGO)

However, given the diverse sources of SRHR information for young adolescents, especially online sources a participant noted that the Government of Rwanda has established a policy to prevent the misuse of these sources and access to unsuitable information by children. This participant noted the following:

"There is a policy called Child Online Protection Policy to protect children from abusing the internet." (P01, female, public institution)

Some participants noted that various governmental local and non-governmental leaders offer young adolescents SRHR information, and that it is necessary to consolidate this information from various sources because of the developmental stage of the audience. One of them explained it as follows:

"Government institutions and non-governmental organisations also prepare different education sessions targeting young adolescents. Organisers need, however, to consider their audience, lifestyles, and

the clarity of their messages." (P05, male, public institution)

Furthermore, the participants noted that schools are sources of SRHR information through the comprehensive sexuality education (CSE) curriculum. In addition to the CSE curriculum, the participants noted that young adolescents learn about SRHR through gender and health clubs. One participant explained the role of school clubs in delivering SRHR information as follows:

"There are after-class clubs that teach about gender principles and reproductive health. There are also special clubs that focus on health." (P17, female, public institution)

In addition to schools, the participants highlighted that trained staff from health facilities deliver SRHR information to young adolescents through youth corners. The role of health facilities was described by a participant as follows:

"We trained at least two people in every health centre. The program is in place. Young adolescents receive information on sexual and reproductive health from the youth corner, at the health facility level." (P16, male, public institution)

The participants said that radio, television, and mobile phones were other important means of delivering SRHR information to young adolescents. The radio programs include "Urunana" and "Ni Nyampinga". For example, Urunana targets the general population, and Ni Nyampinga provides SRHR information that mainly targets young girls. This program calls young girls to abstain from sex or to use condoms. "Mobile for Reproductive Health" (m4RH) is another program through which young adolescents access SRHR information. Using mobile phones, m4RH sends SRHR messages to children. For example, a participant said the following about some of these programmes:

"They [young adolescents] obtain information from radio programs such as Urunana." (P07, male, FBO)

In addition, the participants indicated that churches deliver SRHR information to young adolescents focusing on the 'Word of God' and Christian moral values including the avoidance of premarital sex. A participant from a FBO explained it as follows:

"Churches organise seminars for young children and young adolescents but not regularly. The church's education focuses more on the Word of God than any other topic and calls them to abstain from premarital sexual activity." (P03, female, FBO)

Scope of SRHR education programmes

The study found that the SRHR content is crucial to enable access to SRHR information for young adolescents. Some of the participants were concerned with the content of SRHR education programmes and the meaning of specific concepts.

Disagreement about the content of SRHR education programmes

The content of SRHR information was seen as crucial to enable access by young adolescents. There was a disagreement between the participants about what to include in SRHR education programmes. We asked the participants what they thought the scope of the education should be. Participants from FBOs focused on moral education and prohibiting premarital sexual activity, and those from public institutions suggested that churches should go further and teach young adolescents about having safe sex using modern contraceptive methods. The following comments show the disagreements between some of the participants:

"People think different churches should teach young adolescents about moral values, including avoiding illegal sex and promoting abstinence. Telling them to use injections or pills is pushing them into illicit sex." (P12, male, FBO)

"In addition to the natural family planning methods, young adolescents need to be aware of other existing medical contraceptive methods." (P10, female, public institution)

"There are people who only teach that having sex is a sin without explaining more. They do not go beyond that to suggest means for safe sex. We need to avail emergency contraceptives to young adolescents who fail to abstain from sexual intercourse to prevent unplanned pregnancy." (P16, male public institution)

The participants noted that the selection of CSE content must respect the culture and get inputs from various education stakeholders. They indicated, for example, that some content in the CSE curriculum, such as the dating scenarios, might affect young adolescents' behaviours, and they believed that dating activities might result in sexual activity if children were not monitored at school and in family environments. In addition, the participants were concerned that involving students in dating scenarios would lead them to discovering things that go against morals and culture. One participant described this concern as follows:

"Some lessons may invite students into early sexual activity and/or early pregnancy when it comes to in-class dating exercises and reaching an agreement on having safe sex using a condom. It is difficult to protect them from sexual activity in their families or the school environment." (P08, male, FBO)

Meaning of the concept of gender

The participants believed that some concepts such as gender must be taught, but it is difficult to make it meaningful and contextualise it, which makes it difficult to teach to young adolescents. The participants noted that the communities do not clearly understand the meaning and dimensions of gender and believe it has several ideological components that cannot be expressed in Kinyarwanda. Participants highlighted it is difficult to teach ideological concepts to young adolescents who usually learn better from concrete examples, and this makes it hard for teachers to select which content to teach. One participant explained as follows how the meaning of gender influences access to SRHR information for young adolescents:

"There is still a problem of lack of standard definition of gender. What is the appropriate subject to teach about it? It is still a problem as long as there is no clear definition of gender in our context." (P08, male, FBO)

Norms

The participants reflected on the role of cultural norms in enabling or hindering access to SRHR information by young adolescents. Their views on this aspect are summarized in this section.

Cultural norms

The participants indicated that social expectations play a significant role in delivering SRHR information to young adolescents. For example, they pointed out that the general expectation is that girls should not talk about having sex and keep silent about their sexual needs, which they perceived as compromising girls' rights, especially because it prevents them from receiving information on safe sexual relationships from peers. The study also highlighted the existence of other harmful sexual norms. The following comments explain how social expectations influence young adolescents' access to SRHR information.

"They [boys and girls] never talk about whether the boy wants to have sex. In some cases, the girl also wants it, and it is her right to say she wants it. The problem is that the general expectation is that a girl should never talk about having sex." (P02, female, NGO)

"Girls grow up shy because culture expects them not to speak in public. Therefore, it is easy for anyone to deviate or fool them because they cannot speak up as the society expects them always to be quiet." (P14, female, public institution)

The participants noted that cultural norms enhance imbalances in sexual decision-making powers between boys and girls. They reflected that the environment of young adolescents generally promotes boys as protectors of girls and the owners of sexual power, allowing them to initiate sexual relationships. On the other hand, girls have to simulate weakness, play a passive role, and enjoy boys' protection. It is taboo for girls to express their sexual needs. The following comments discuss this problem:

"Boys are protectors of girls. A girl who does not surrender to this protection behaves like men and will not find someone to marry her." (P01, female, public institution)

"Boys grow up in an environment that makes them feel that they are the ones to initiate relationships with girls." (P05, male, public institution)

"It is taboo [for a woman] to tell her husband that she wants sexual intercourse, while as a human being, she may also wish to have sex." (P01, female, public institution)

In addition, the participants pointed out that the culture plays a role in promoting inadequate SRHR information and creates negative beliefs in young male adolescents. One participant gave an example of a saying that supports the imbalances in sexual decision-making powers and confirms that boys or men cannot control their sexual drive, and therefore, need multiple sexual partners. This may influence young boys' and girls' behaviours if they grow up in an environment where such beliefs are held. One participant explained it as follows:

"A Rwandan proverb says that bulls are irresistible whenever they want sex (Imfizi ntiyimirwa). Boys grow up as such and behave like their fathers with such beliefs." (P01, female, public institution)

Religious beliefs

The findings indicated that religious institutions play a role in delivering SRHR information to young adolescents. The study found that FBOs provide SRHR information that influences the sexual knowledge, beliefs, and behaviours of young adolescents. However, some churches are reluctant to teach sexuality because they regard it as a sin. FBOs believe that providing SRHR

education promotes immorality and violates God's commandment to abstain from premarital sex. Furthermore, the FBO participants indicated that delivering information on condom use might encourage premarital sex and breach some commandments. Some participants elaborated as follows:

"The church education focuses on moral values. We teach by good examples of their grandparents, parents, elder brothers, and sisters, the Virgin Mary and other Saints who resisted rape and refused to break their virginity. We teach young adolescents to abstain from having sex, and remain virgins and chaste." (P07, male, FBO)

"Teaching children to use a condom means inviting them to have protected sex. If the commandment says to abstain from sex, it would be a contradiction because that commandment would be violated whether sex is protected or not. It is immoral, misbehaving." (P11, male, FBO)

Societal factors

Three factors at the societal level emerged from the participants' responses as influencing young adolescents' access to SRHR information. These factors are related to resources (financial and human), the process of creating SRHR education policies, and SRHR laws.

Inadequate resources

The study found that inadequate financial resources to generate SRH information tools such as books and training modules are an important challenge to giving young adolescents' access to SRHR information. The participants also noted that some teaching materials provided by partners such as non-government organizations (NGOs) do not adequately match young adolescents' needs. They further pointed out that the shortage of skilled and qualified personnel and the inability to use available communication channels, including social media affected the provision of SRHR information to young adolescents. Some participants said the following about the challenges to enabling access for young adolescents to SRHR information:

"It [sexuality education] also requires financial means. Books are expensive... Modules require time to generate." (P17, female, public institution)

"Schools have no adequate materials apart from those found in biology, which are not also from our culture. They are most often brought from the NGOs. The package from NGOs is always wrong." (P08, male, FBO)

"We have a shortage of employees to deliver sexuality information....Another barrier is technology use. We want to send that information using WhatsApp and other social media, but it is still expensive and children do not access it on phones." (P16, male, public institution)

Inadequate SRHR policy-setting process

The participants criticised the processes of creating SRHR policies as inadequate, as they do not involve people from all levels of communities, including the older adults. The findings indicated that it is necessary to create evidence-based policies through research. They noted that some of these policies originated from external sources and have no local relevance. Two participants explained it as follows:

"The family members, especially elderly people from the villages, are not consulted. If they [policy-makers] could approach them, they would learn about what used to happen 20 years ago, how women behaved towards their husbands and how the husbands behaved towards their wives, and what made them keep their family secrets." (P05, male, public institution)

"Policy content should not be imposed. Policy-makers abruptly come up with content from European countries. They do not research to get informed about the local context to include community members' cultural perspectives." (P08, male, FBO)

Unfriendly SRHR laws

The participants indicated that some laws do not facilitate access to SRHR information for young adolescents. One participant noted that it is necessary to solve specific reproductive health problems and revise SRHR laws that do not allow young adolescents to access information on SRHR services, such as emergency contraceptives. One participant explained it as follows:

"We should also revise current laws to support children who have difficulty to abstain from sex and need emergency contraceptives." (P16, male, public institution)

Discussion

Informed by the social-ecological framework of adolescent health, this research sought to explore participants' perspectives on the enablers and barriers to young

adolescents' access to SRHR information in Rwanda. The social-ecological framework describes multiple interacting levels of interventions to enable adolescent SRHR [16], especially access to SRHR information by young adolescents. Participants in this study perceived that access to SRHR information for young adolescents consists of interrelated individual, relationship, community and societal factors.

The study found that individual factors include the young adolescents' SRHR curiosity and age determining the exact time to initiate sexuality information. The study found that young adolescents ask SRHR related questions to know more about SRHR but these questions show they have inadequate SRHR knowledge and suggest their need for more knowledge. Previous research also highlighted that young adolescents in Rwanda receive partial and inaccurate SRHR information [39]. A recent scoping review concluded that young adolescents in low- and middle-income countries have inadequate SRHR knowledge, especially in terms of puberty and menstruation [40]. Young adolescents' SRHR knowledge in Rwanda is inadequate, as in many other settings such as Sub-Saharan Africa [30, 41], Guangzhou City in China [42], Korea [43] and Indonesia [11]. The age of initiating sexuality education was another perceived determinant of access to SRHR information by young adolescents. However, participants did not agree on the exact age at which to deliver such education. Kingori et al. suggest that the age of receiving SRHR information may influence people's sexual health education [44] and other literature suggests that sexuality education must be age-appropriate and start at an early stage [3], specifically in early childhood [45]. Sometimes, young age is considered a barrier to sexuality communication [46] because it is thought that it is too early for young adolescents to receive SRHR information [46, 47], but other studies conclude that young adolescents have insufficient SRHR knowledge [43].

The relationship factors perceived to influence access to SRHR information included parent-child interaction and peer norms. Similar to other studies [48], the current study found that sexuality is not openly discussed with parents but that it is sometimes discussed with members of the extended family [49]. However, young adolescents often perceive parents as the primary sources of SRHR information [49, 50], but many parents do not discuss sex with their children. There is limited communication with parents because parents lack the skills and time to engage with young adolescents, have negative attitudes towards SRHR information, and face language-related barriers and cultural norms at the family level. In other studies, parents also had limited resources, including knowledge [48], negative attitudes [48] and socio-cultural norms [48, 51] as barriers to

SRHR communication with (young) adolescents. The belief that parents are worried that SRH education will stimulate sexual activity among young adolescents is echoed in other studies [46, 52]. Usually, parents perceive sexual activity as bad, shameful, and morally reprehensible, which impedes the discussion of sexual health topics with young adolescents [48]. The study found, like other studies, that parents send young adolescents to members of extended family (aunts, uncles, and grandparents) for sexual socialisation [12, 47, 53].

The participants thought that educated parents are more likely to discuss sexuality with young adolescents than uneducated parents. The influence of parental education was reported by another study in Iran whereby the mother's education influenced young adolescents' SRHR knowledge [54]. In addition, while young adolescents need adults who spend time with them [47, 55], this study shows that parental absence from the home reduces parental monitoring and opportunities to deliver SRHR information. Furthermore, this study revealed that the language to engage with young adolescents about sexual information in local terms is culturally inappropriate and embarrassing. However, a booklet in the local language, Kinyarwanda, is available to facilitate the SRHR communication between parents and young adolescents [56].

Similar to a previous study in Tanzania [57], this study highlighted the role of peers in delivering SRHR information. Peer norms do not allow girls to fully access SRHR information and encourage silence about sexuality, and this is similar to findings from Vietnam [58] and Ethiopia [47]. Silence about SRHR implies that young adolescents do not have access to a full range of SRHR information, which might affect girls' SRHR information-seeking behaviour [47]. Furthermore, the SRHR messages from peers are contradictory, calling for both sexual abstinence and intercourse. This finding aligns with previous research indicating (young) adolescents follow contradictory peer norms [59].

Access to SRHR information requires using relevant sources at the community level. Echoing other studies [30, 48], this study revealed that young adolescents access SRHR information from numerous sources. The current study found that structured programs such as school-based sexuality education, youth-friendly corners at health facilities, *Urunana* and *Ni Nyampinga* radio shows, and (m)RH provide reliable SRHR information to young adolescents. However, the study found that schoolteachers face limitations such as beliefs, attitudes, and lack of skills when delivering SRHR information. In addition, some sources provide SRHR information based on the gender of the recipients. For example, *Ni Nyampinga* is created by girls for girls, and this radio show

targets only girls, provides information about health and relationships and depicts ideal girlhood for young female adolescents [60, 61]. m4RH is a text message-based platform that involves sending SRH information to young adolescents in Kinyarwanda [62]. However, m4RH is reaching a limited number of young adolescents because of low mobile phones ownership by young adolescents. Furthermore, the findings suggest that young adolescents access less reliable and unprofessional SRHR information sources, including friends, social media platforms (Facebook and WhatsApp) and mobile phones, which raises concerns about the overall quality of messages delivered and has led to calls for SRHR information harmonisation.

The study highlighted the influence of culture and gender norms on delivering SRHR information to young adolescents because of taboos. The study corroborated findings from other studies that sexuality is a taboo and embarrassing subject to discuss with young adolescents in many societies [52]. Sexuality taboos also influence the design and implementation of sexuality education programmes [63]. Sexuality taboos suggest that providing and seeking sexual information sounds unacceptable to many young adolescents.

Like other studies [12, 64], the current study found differences in boys' and girls' gender roles, suggesting a different socialisation process that affects access to SRHR information. We found that the community expects girls to remain submissive, ambivalent or silent about sexual matters, but that boys are expected to enjoy their sexual powers and freedom; this is also reported in previous studies [47, 65].

In addition, the findings from this study suggest that religious beliefs play an important role in determining the content of SRHR information in Rwanda [21], which is similar to other studies [66–68]. Participants from FBOs espoused for preserving morality among young adolescents by focusing mainly on the moral values of sexual abstinence and virginity. In contrast, participants from public institutions advocate for safe sex and modern contraception. These findings suggest that, like another study [69], all education stakeholders must suggest consistent content of SRHR information. In addition, the study found there is no agreed-upon definition of the concept of "gender" applicable to the Rwandan context. Gender has a significant influence on sexuality [70]; hence, well-defined content serves as a foundation for determining what, how, when, and to whom to best to provide it [71].

This study found that factors at the societal level also influence access to SRHR information. These factors include inadequate resources, policy-setting processes and SRHR laws. Concerning the resources, the study noted, like others [72], limited means to develop teaching aids and a shortage of trained employees (including

schoolteachers) to deliver SRHR. In this regard, inadequate resources constitute challenges to implementing sexuality education in Rwanda [21] and other resource-poor settings [73–75].

This study also identified the challenges of inadequate SRHR education policy-making processes and laws that do not involve local stakeholders. Participants highlighted the need for research before initiating SRHR policy-making and involving local stakeholders. These findings underscore the perceived importance of research and involvement of stakeholders from different backgrounds to come up with a universal and culturally-relevant SRHR content [69]. Additionally, the findings from this study suggest the need for revising adolescent SRHR laws to enable access to SRHR services and information by young adolescents without parental consent as recommended by the World Health Organization [76].

It is crucial to consider the following limitations while interpreting the findings from this study. First, the results could have been enriched by perspectives from various participants, including young adolescents' parents, healthcare providers and schoolteachers; hence the limited generalisation of the findings. Furthermore, the results rely solely on the stakeholders' perspectives using a qualitative approach. Quantitative studies are important to ascertain the importance of each of the discussed factors in supporting or hindering access to SRHR information among young adolescents. Despite these limitations, the study gives insights from a wider perspective on the factors that influence access to SRHR information among young adolescents in Rwanda.

Conclusion

This study showed that many of the participants had a favourable attitude towards young adolescents' access to SRHR information. Informed by the social-ecological framework of adolescent health, this study provided an overview of enablers and barriers to access to SRHR information by young adolescents at individual, relationship, community and societal levels. Addressing these barriers may facilitate improved access to SRHR information for young adolescents. These findings are important to promote safe SRH and preventing adverse health outcomes among younger and older adolescents.

Abbreviations

ADEPR: Association of Pentecostal Churches of Rwanda; CSE: Comprehensive Sexuality Education; FBO: Faith-Based Organisations; ICPD: International Conference on Population and Development; m4RH: Mobile for Reproductive Health; NGOs: Non-governmental organisations; SRH: Sexual and reproductive health; RBC: Rwanda Biomedical Centre; SRHR: Sexual and Reproductive Health and Rights.

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Authors' contributions

VM, DNC and SG were involved in the conception and the design of the study. VM conducted the interviews and drafted the initial version of the manuscript. DNC and SG provided support throughout the writing of the manuscript and assisted with data analysis and interpretation. All authors read and approved the final manuscript.

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Availability of data and materials

The datasets generated and/or analysed during the current study are not publicly available to preserve the anonymity of the research participants but are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

This study obtained approvals from the Human Research Ethics Committee of the University of the Witwatersrand (study reference number: M190303), the Institutional Review Board of the College of Medicine and Health Sciences of the University of Rwanda (approval notice number: 401/CMHS IRB/2018) and the National Council for Science and Technology of Rwanda (no. NCT/482/136/2019). All participants provided signed written informed consent forms before the interviews. All methods in this study were performed in accordance with relevant ethical guidelines and regulations for research involving human subjects.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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“Not just the consequences, but also the pleasurable sex”: a review of the content of comprehensive sexuality education for early adolescents in Rwanda

Valens Mbarushimana^{1,2*}, Susan Goldstein³ and Daphney Nozizwe Conco¹**Abstract**

Background Responding to adolescents' educational needs in sexual and reproductive health and rights (SRHR) is central to their sexual health and achieved through school-based comprehensive sexuality education (CSE). In 2016, Rwanda introduced CSE through the competence-based curriculum in schools to enhance learners' knowledge about sexuality, gender, and reproductive health issues, including HIV/AIDS. However, globally, the content of CSE is sometimes dissimilar, and little evidence surrounds its scope in many settings, including Rwanda. In addition, the extent to which CSE aligns with international guidelines has yet to be well known. This study assesses major areas of CSE for early adolescents in Rwanda, analyses how CSE correlates with international guidelines and makes recommendations accordingly.

Methods We reviewed the Rwandan competence-based curriculum to map CSE competences for early adolescents and conducted semi-structured interviews with key informants (N = 16). Eleven of the 23 curriculum documents met the selection criteria and were included in the final review. We manually extracted data using a standard form in Microsoft Excel and analysed data using frequency tables and charts. Interviews were thematically analysed in NVivo 11 for Windows.

Findings We found 58 CSE competences for early adolescents across various subjects, increasing with school grades. All recommended CSE areas were addressed but to a variable extent. Most competences fall under four recommended areas: sexual and reproductive health; human body and development; values, rights, and sexuality; and understanding gender. The least represented area is violence and staying safe. Of the 27 expected topics, there are two to six CSE competences for 13 topics, one CSE competence for each of the six others, and none for the eight remaining ones. Qualitative findings support these findings and suggest additional content on locally controversial but recommended areas of sexual pleasure, orientation, desire and modern contraceptive methods.

Conclusion This study explores the CSE content for early adolescents in Rwanda and how they align with sexuality education standards. Ensuring equal coverage of CSE areas and addressing missing topics may improve CSE content for this age group and foster their SRHR.

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Keywords Early adolescent, Sexual and reproductive health and rights, Comprehensive sexuality education, Sexually transmitted infection, Gender, Competence-based curriculum, ITGSE, Rwanda

Background

Many countries around the globe have a growing interest in ensuring that children and young people have access to some form of sexuality education [1]. The 1994 international conference on population and development (ICPD)'s Programme of Action highlighted the role of Governments in promoting adolescent sexual and reproductive health and rights through delivering sexuality education [2, 3]. Whether offered in formal (school) or non-formal (community) settings, the ICPD specified that sexuality education should be age-appropriate, start as early as possible, and foster mature decision-making [2]. Comprehensive Sexuality Education (CSE) is an important way to promote adolescent sexual and reproductive health and rights [4–6] and becomes crucial during early adolescence (10–14 years), a stage of transition from childhood to older adolescence and adulthood, laying the ground for their future sexual and reproductive health (SRH), gendered attitudes, and behaviours [7, 8].

There is evidence that adolescents benefit from sexuality education programmes in many ways. For example, a sample of students from three departments in Guatemala indicated that most students (89–96%) reported personal benefits from CSE in 2015 [9]. Evidence also suggests that sexuality education programmes improved young people's SRHR knowledge, attitude and behaviour in Nigeria [10, 11], Ethiopia [12] and Korea [13]. While examining the effects of school sexuality education programmes on adolescents' sexual knowledge, Song et al. [14] concluded that sexuality education positively affects overall sexual knowledge. Specifically, CSE positively impacts sexual knowledge, attitudes, communication, and sexual behaviours among adolescents [15, 16]. CSE is an effective tool to ensure that adolescents access the SRH information they need to make healthy and informed Sexual and Reproductive Health and Rights (SRHR) choices. It enables adolescents to discuss sex, know scientific facts, and have social skills to use this knowledge to resist peer pressure [17]. In addition, CSE improves the perception of SRH risks and knowledge of early adolescents [18], delays sex initiation and decreases adolescent pregnancy [19]. Furthermore, a systematic review and meta-analysis in low- and middle-income countries revealed that CSE contributed to safe sexual health practices such as condom use, refusing sex, reduced sexual partners and initiation of first sex [20].

On the other hand, some studies report that sexuality education is a motive to initiate sexual behaviours [21] though this is not a commonly held belief among CSE practitioners and researchers.

The content of CSE remains contested in many parts of the world due to variations in framing and notions of sexuality, fears related to disrupting identities, values of the communities and compromising children's innocence [5]. In addition, a literature review of CSE guidelines indicates that there is no agreed upon definition of the term "comprehensive" in the context of CSE [4, 22]. Because of these varied understandings and fears about CSE, several sexuality education guidelines have been developed [23–27]. These guidelines emanate from the Sexuality Information and Education Council of the United States (SIECUS) [26]; the World Health Organization Europe and Federal Centre for Health Education BZgA [25]; and UNESCO [24]. Of these guidelines, UNESCO's International Technical Guidance on Sexuality Education (ITGSE) offers many advantages because it has contents for all learners' grades and provides a research evidence-based framework for use by those interested in developing CSE programs [6, 28]. The ITGSE outlines eight key concepts as major components of a CSE curriculum [6, 24]. These key concepts include (1) relationships; (2) values, rights, culture, and sexuality; (3) understanding gender; (4) violence and staying safe; (5) skills for health and wellbeing; (6) the human body and development; (7) sexuality and sexual behaviour; and (8) sexual and reproductive health [24]. Each of these key concepts highlights important topics of interest for sexuality education depending on the age of the learners. The ITGSE organises CSE into four age groups 5–8 years, 9–12 years, 12–15 years, and 15–18+ years [24].

Despite the perceived importance of delivering accurate SRHR information to adolescents, there is limited evidence of CSE coverage. Studies highlight that the implementation of CSE programs may not be optimal, and the content is dissimilar in many parts of the world. For example, in Sub-Saharan Africa, religious communities exclude some CSE topics such as masturbation, abortion and sexual orientation because they contradict their commonly held beliefs [29]. In addition, some communities resist teaching about gender equality fearing the disruption of patriarchal system that maintains men dominant and women compliant [29]. A review of the CSE curriculum in East and Southern Africa revealed gaps in information about condoms,

contraception and other SRH topics. Attention to gender content was weak or contradictory [2, 3]. Haberland and Rogow [2] noted that effective CSE should engage a gender and rights perspective. A study of the quality of sexuality education implementation in low- and middle-income countries found that CSE focused more on contraception and unintended pregnancy than other topics and emphasised more factual knowledge than skill-based topics [30].

In 2016, the Rwanda Education Board introduced the competence-based curriculum integrating CSE at the basic education level [31, 32], to equip young people, including early adolescents, with knowledge, skills, and values that allow them to decide responsibly “about their sexual and social relationships, explain and clarify feelings, values, and attitudes, and promote and sustain risk-reducing behaviours” [31]. The Rwandan curriculum framework specifies that a competence-based curriculum aims to improve the learners’ experience by focusing more on their competence than their knowledge [31], and a competence is defined as the ability to combine “knowledge, skills, attitudes, values and behaviour to accomplish a particular task” [33]. Furthermore, this curriculum framework indicates that prior to introducing CSE in schools, only a small proportion of Rwandan learners received information about their transition from childhood to adolescence and adulthood and healthy sexual lives [33]. Consequently, the Government of Rwanda introduced CSE to respond to inadequate knowledge of sexuality, gender and other reproductive health issues such as HIV/AIDS [33]. In addition, 1,508 teachers and other education stakeholders were trained on key features of this curriculum integrating CSE; and a teacher’s guide on CSE for secondary schools was published in 2018 [34]. The competence-based curriculum indicates that CSE is a cross-cutting issue taught across different designated subjects [31]. Cross-cutting issues have connection with different subject areas and are important to learn about, are not confined to one subject, and integrated across years and cycles [31].

Since the introduction of this curriculum into schools, no studies have been conducted to assess the major areas addressed by the curriculum mainly for early adolescents to understand the focus of CSE and address potential gaps for this age group. In addition, there is limited evidence on how the Rwandan competence-based curriculum integrates the ITGSE recommendations. Based on ITGSE [24], this study aims to assess major areas of CSE for early adolescents in Rwandan schools as reflected in the competence-based curriculum, analyse the level to which this curriculum addresses various recommended key concepts and topics from the ITGSE and suggest areas of improvement.

Methods

Study setting

We conducted this study in Rwanda, where the basic education system consists of pre-primary, primary, and secondary education [31]. Pre-primary education comprises nursery schools and enrolls learners between three and six years. Primary education lasts for six years, consists of lower primary (P1-P3) and upper primary (P4-P6) and hosts learners aged six to 12 years. Secondary education lasts for six years and is organised into the lower or ordinary level (O-Level) and upper or advanced level (A-Level). Secondary education officially enrolls learners between 13 and 18 years; however, some children start secondary schooling at 12 years. The languages of teaching and learning are Kinyarwanda for pre-primary and lower primary (P1-P3) levels and English for upper primary (P4-P6) and secondary levels [31]. Teaching programs, including the competence-based curriculum for these levels, are developed and monitored by the Rwanda Education Board (REB) [35].

The Rwanda competence-based curriculum specifies that learning takes place in different subjects at the pre-primary, primary and lower-secondary levels [36]. At the pre-primary level, learning activities take place in areas of Discovery of the World, Numeracy, Physical and Health Development, Creative Arts and Culture; Language and Literacy: (Kinyarwanda and English), and Social and Emotional Development. At the lower-primary levels, learning takes place in the following core subjects: Kinyarwanda, English, Mathematics, Social and Religious Studies, Science and Elementary Technology, Creative Arts: Music, Fine Art and Craft, Physical education. Core subjects for the upper-primary level are the same as those listed for the lower-primary level, in addition to the subject of French. The core subjects of Kinyarwanda, English, Mathematics, French, Physical education (and Sports) are also opened at the upper-secondary level in addition to the following ones: Physics, Chemistry, Biology and Health Sciences, Information and Communication Technology, History and Citizenship, Geography and Environment, Entrepreneurship, Kiswahili, Literature in English. At the lower-secondary level, the learners have Religion and Ethics, Music, Dance and Drama, Fine arts and Crafts, Home Sciences, Farming (Agriculture and Animal husbandry) as elective subjects and Library and Clubs as compulsory co-curricular activity.

Religious institutions play an important role at many levels of the Rwanda’s education system. The fourth population and housing census conducted in 2012 indicated that religious affiliation was universal with the predominance of Christianity [37]. In 2018, education statistics in Rwanda indicate that religious institutions own most of the pre-primary, primary and secondary schools [38]. In

Rwanda, cultural and religious influences are perceived as barriers to delivering sexual and reproductive health services related to family planning and circumcision [39].

Study design

This mixed-method study involved a review of the Rwanda competence-based curriculum CSE and key informant interviews. We reviewed syllabi of subjects accommodating the CSE curriculum in the Rwanda curriculum for the pre-primary, primary, and lower secondary school levels to map the sexuality education competences. The review followed the revised sexuality education framework provided by UNESCO [24]. In addition, key informant interviews were conducted to explore informants' perceptions about the focus of sexuality education for Rwandan early adolescents and potential areas of improvement.

Study participants

We officially contacted the institutions of key informants to select potential study participants. Selected were key informants who were regularly involved in the sexuality education of early adolescents in Rwanda. After identifying and selecting the participants, the researcher and participants agreed upon further study arrangements and interviews appointments.

We purposively selected the key informants (eight male and eight female) based on their positions as policy-makers, religious leaders, and private stakeholders working in the field of adolescent sexual and reproductive health in Rwanda. The semi-structured interviews involved in total 16 key informants, of whom nine participants (three males and six females) belonged to public institutions such as Ministries (4), Government-affiliated agencies (3), and District level institutions (2). There were also six key informants (five male and one female) from Faith-based Organisations (FBOs) and one female participant from a Non-Governmental Organization.

Selection of documents for review

The document review process entailed searching for CSE competences from the Rwanda competence-based curriculum and classifying these competences per the key concepts and topics recommended in the UNESCO's ITGSE. The selection process involved identifying the subjects designated by the competence-based curriculum to integrate CSE at the pre-primary, primary (P1-P6), and lower secondary (S1-S3) levels [36]. There were 13 identified subjects: (1) Social Studies, (2) History and Citizenship, (3) General Studies, (4) English, (5) French, (6) Kinyarwanda, (7) Kiswahili, (8) Information and communication Technology, (9) Music, (10) Physical Education, (11) Biology, (12) Science and Elementary Technology,

and (13) Religious Education [33, 40]. For the 13 subjects, there were 23 syllabi following the school levels [33], which included: one syllabus for the pre-primary level; five syllabi for the lower-primary (P1-P3) level; six syllabi for the upper-primary (P4-P6) level; and 11 syllabi for the lower-secondary (S1-S3) level. However, of the 23 syllabi of the subjects indicated by the Rwandan competence-based curriculum to accommodate CSE [31], only 11 syllabi were found to have CSE content, and these were selected for the final review (Table 1).

Data collection

We collected data using two methods: the record review and the key informant interviews. The record review involved searching for CSE competencies from the selected syllabi. We used search terms including gender, sex, sexuality, sexual activity, sexually transmitted infections, HIV/AIDS, values, rights, culture, violence and staying safe, skills for health and wellbeing, human body and development, sexual behaviour, and reproductive health. We mapped key terms from the competence-based curriculum's syllabi, assessed, linked them to specific CSE competences defined in this curriculum and extracted data in a Microsoft Excel form for further analysis. The data extraction form consisted of the following columns: document title, school grade, subject, topic, competence, and suggested contents.

The interviews with key informants explored their views about the major areas of CSE for early adolescents

Table 1 Distribution of CSE competences per school grade

	Number of CSE Competences	Percent
School grade		
Preschool 1 (3–4 years)	2	3.4
Preschool 2 (4–5 years)	1	1.7
Preschool 3 (5–6 years)	1	1.7
Pre-primary (Preschool 1–3)	4	6.9
Primary 1	2	3.4
Primary 2	1	1.7
Primary 3	2	3.4
Lower primary (Primary 1–3)	5	8.6
Primary 4	2	3.4
Primary 5	5	8.6
Primary 6	10	17.2
Upper primary (Primary 4–6)	17	29.3
Secondary 1	10	17.2
Secondary 2	11	19.0
Secondary 3	11	19.0
Lower secondary (Secondary 1–3)	32	55.2
Total	58	100.0

in Rwanda, and the content that should be part of the school curriculum. Specifically, the interview outline focused mainly on what the participants think early adolescents learn about gender and sexuality in the school curriculum and what they think these early adolescents should learn (appropriate content for this age group) from this curriculum. The study did not aim to ask participants about the factors related to the implementation of CSE in Rwanda, and how this implementation influences learning. The interviews took place per appointment and at a place indicated by the participants, mainly in their offices. Except for one interview, we conducted all the interviews in Kinyarwanda, the principal language of the informants. First, we transcribed verbatim voice records of interviews, and then professional translators translated these interview transcripts from Kinyarwanda to English. Finally, we compared the translated text to the original version to ensure similarity [41].

Data analysis

We assessed the CSE competencies identified from the Rwanda competence-based curriculum and categorised these CSE competences per ITGSE concepts and topics [24]. These key concepts include (1) Relationships; (2) Values, Rights, Culture and Sexuality; (3) Understanding Gender; (4) Violence and Staying Safe; (5) Skills for Health and Well-being; (6) Human Body and Development; (7) Sexuality and sexual behaviour; and (8) Sexual and Reproductive Health [24]. Data from the curriculum review were summarized using frequency tables and charts and organised data per subject, school grade, concepts and topics of ITGSE. In addition, we imported key informant interview data into NVivo for Windows 11 (QSR International Pty) for thematic analysis using the ITGSE framework. Finally, we used quotations to support the description of qualitative data from key informant interviews.

Results

This section provides an overview of CSE competences from the competence-based curriculum per school grades and recommended areas of CSE. It also highlights participants' perceptions on major areas of CSE and their recommendations regarding the content of CSE for early adolescents in Rwanda.

CSE competences per school grade

The findings showed that teaching CSE starts in the pre-primary level and the number of CSE competences in the competence-based curriculum increased with higher school grades. Overall, there were 58 CSE competences from the pre-primary to the lower-secondary levels. There were only four CSE competences at the

pre-primary level, 22 competences at the primary level, and 32 competences at the lower-secondary level. Overall, upper-primary and lower-secondary levels accounted for most CSE competences (49/58) (Table 1).

Areas of CSE for early adolescents in Rwanda

The distribution of CSE competences across various recommended areas indicated that the most addressed area was sexual and reproductive health. This area is organised under three topics: pregnancy and pregnancy prevention; HIV and AIDS stigma, care, treatment and support; and understanding, recognising and reducing the risk of STIs, including HIV [24]. There were 13 CSE competences in the curriculum for this area, six of which fell under the topic of understanding, recognising, and reducing the risk of sexually transmitted infections, including HIV (Fig. 1). According to the qualitative findings related to this area, participants perceived that CSE focuses more on pregnancy prevention for girls because the consequences of pregnancy are more severe for them than for boys, and they do not conceive. Participants indicated that education of early adolescents focuses on pregnancy prevention methods, including condoms and other contraceptive methods. In addition, the participants noted that preventing sexually transmitted infections such as HIV/AIDS, hepatitis, and cervical cancer was another focus of sexuality education for early adolescents. The participants also pointed out that circumcision was becoming an area of growing interest in CSE of early adolescents. Finally, they noted that such education focused on available services to support early adolescents in sexual and reproductive health matters. These services included the availability of contraceptives, health-facility delivery, pregnancy testing, and ante- and post-natal care. However, the findings on educating early adolescents about birth control methods were mixed, especially injections, pills, and condoms. Participants from FBOs did not recommend education on condoms, and they believed such education would encourage early sexual activity and, therefore, supported sexual abstinence-only education. Nevertheless, participants from public institutions noted the need to introduce and educate about birth control methods to prevent early pregnancies. However, a participant from a public institution neither did support the idea of availing condoms to early adolescents nor perceived it as a top priority (Table 2).

The second area of CSE mainly covered by the curriculum in Rwanda was the human body and development (key concept 6). This area comprises four topics: sexual and reproductive anatomy and physiology, reproduction, puberty and body image [24]. The review of the curriculum yielded, in total, 11 CSE competences in this area. Most of these competences fall under two topics of

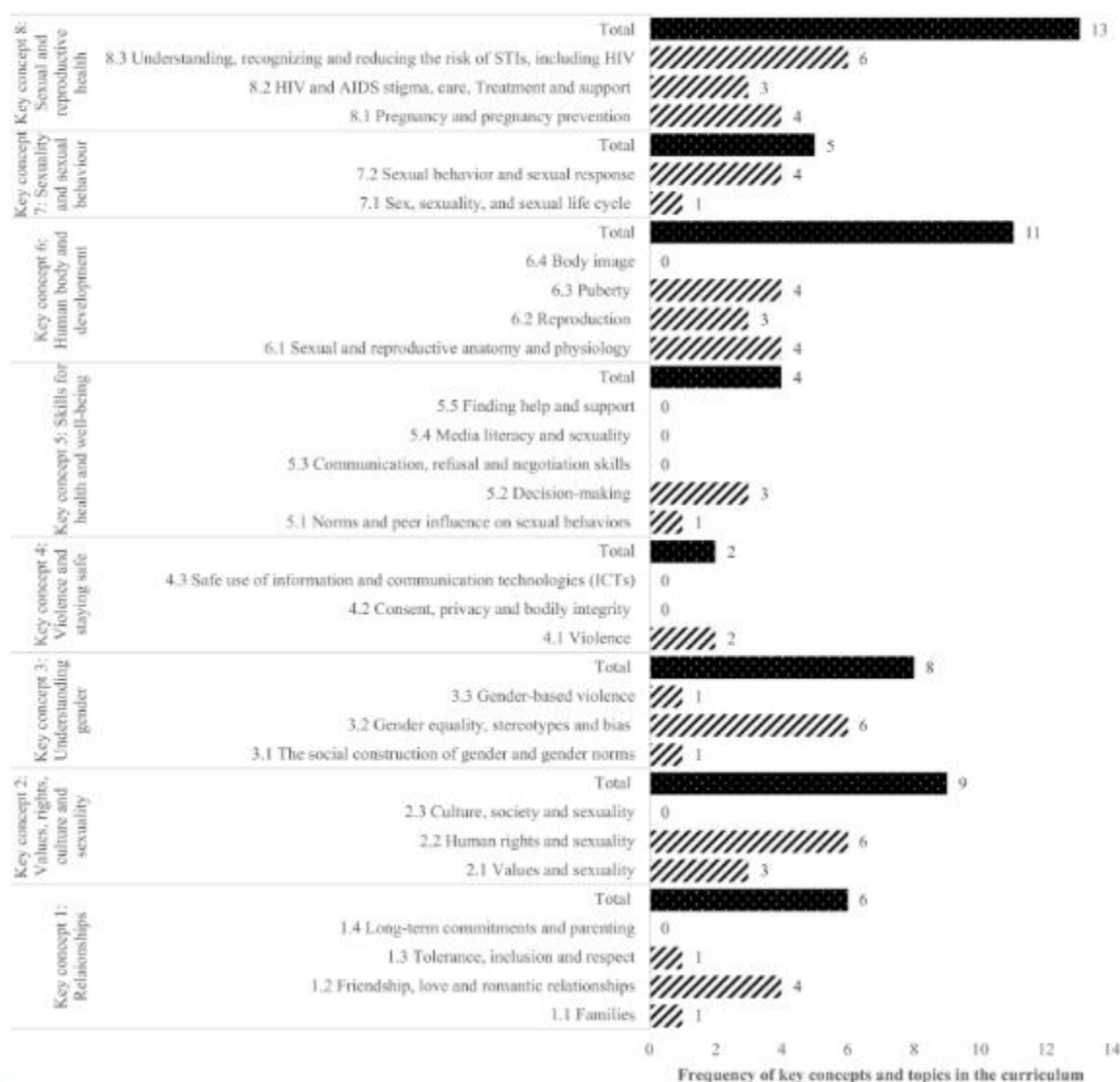


Fig. 1 Distribution of CSE competences for early adolescents in Rwanda per standard areas of sexuality education

sexual and reproductive health, anatomy and physiology and puberty (four competences for each). The remaining three competences address to the topic of reproduction, and there were no CSE competences related to body image (Fig. 1). Qualitative findings revealed that CSE for early adolescents focuses on anatomy and physiology, changes, and stages of sexual development. Participants indicated that emphasising these topics allows early adolescents to be aware of physiological changes, related sexual risks and their prevention. In addition, one participant suggested that the competence-based curriculum should consider providing positive information about

sex, including enjoyment of sex, rather than focusing merely on its negative consequences (Table 2).

The third area mainly addressed by the competence-based curriculum in Rwanda is values, rights, culture and sexuality. This area comprises three topics: values and sexuality; human rights and sexuality; and culture, society and sexuality [24]. The curriculum review yielded nine CSE competences for early adolescents. Most of these competences (six out of nine) fell under human rights and sexuality, and there were no CSE competences on culture, society, and sexuality (Fig. 1). Qualitative findings in this area indicate that sexuality education for early

Table 2 Summary of findings from the qualitative study of the content on CSE in Rwanda

Area of CSE	Topics arising from interviews	Illustrative quotes
Good and safe relationships	Safe relationships	"We do not teach them to be lonely, but we teach them how to behave in good and safe relationships between boys and girls." (P07, Male, FBO)
	Importance of Biblical virtues	"... The bible says that he who has a good wife has a good home. So we start preparing children at their early stages to become good husbands and wives who will start strong families." (P11, Male, FBO)
Values, rights, culture and sexuality	Sexual abstinence	"Teaching a child about not having sex is spiritual because the seventh commandment prohibits us from having unauthorised sex." (P11, Male, FBO)
	Dressing norms	"It is prohibited in our religion to put on trousers, miniskirt, having artificial hairs styles." (P03, Female, FBO)
	Prevent sexual abuse	"The law protects those who are under 18. It is against the law for adults to date a minor. They get arrested." (P16, Male, Public Institution)
Understanding gender	Gender equality	"Gender does not mean favouring boys or girls, but instead giving equal opportunities to all. They [boys and girls] should all be supported the same way and benefit equally from education." (P17, Female, Government)
	Gender roles	"We teach them that there are no roles specific to boys and girls; their roles are interchangeable. We want them to understand that one is capable of doing what another is supposed to do." (P01, Female, Ministry)
	Fostering self-confidence	"We focus on the development of self-confidence, decision-making, and teaching them to have self-trust and how to make informed choices, and critical thinking." (P08, Male, FBO)
	Sexual diversity	"... we know it [LGBTI] is also part of sexuality... I feel the framework around sexuality should incorporate that because it is how they are. Maybe it is not easy to find it among early adolescents, but at 16 to 19 years, you might have cases. So it would be good if programming could also look at this." (P02, Female, NGO)
Violence and staying safe	Refusing unwanted sexual activity	"Sexual and reproductive health education of early adolescents covers ... saying NO to unwanted sexual activity, resist temptations and reporting information related to rape." (P14, Female, Public Institution)
Skills for health and well-being	Independent decision-making	"We teach them to make informed decisions and their rights, they can get married. They can take decisions without being easily influenced." (P16, Male, Public Institution)
	Condom use	"... provide open information on access to condoms. It is very confidential. Girls and boys go and go back and obtain the information they need." (P02, Female, NGO)
Human body and development	Understanding human body	"We focus on teaching children about body anatomy and physiology so that they understand how they [their bodies] work... know when it is risky and how they can protect themselves." (P16, Male, Public Institution)
	Sexual pleasure	"... you should also approach the positive side. Boys and girls want to talk about it, they have questions, and sometimes questions are not just the consequences of unprotected sex and early pregnancy but also how can I have pleasurable sex. Sometimes it is very difficult to ignore the positive side of the information."
Sexuality and sexual behaviour	Appropriate behaviour	"They [educators] mostly talk about how early adolescents should behave, and the consequences of inappropriate behaviours." (P10, Female, Public Institution)
	Sexual instinct	"Sexual instinct is something natural which increases as someone grows, but you will not find teachers or parents telling their children about that... but if they were to be taught this earlier to know how to behave in such a situation, to know that sexual intercourse is a natural need." (P01, Female, Public Institution)

Table 2 (continued)

Area of CSE	Topics arising from interviews	Illustrative quotes
Sexual and reproductive health	Prevention of pregnancy and STIs	"Girls do not misbehave like boys. Society does not perceive it as a big deal when boys misbehave. However, it is shameful when girls misbehave. They [adults] fear having girls with an unexpected pregnancy, but boys do not conceive." (P03, Female, FBO)
	Circumcision	"They are taught about circumcision, and I would not say that circumcision is still considered strange as it was before." (P13, Female, Public Institution)
	SRH services	"We focus mainly on access to information. We provide information about services provided regarding reproduction such as contraceptives, going to the hospital for delivery, pregnancy tests, ante- and post-natal care." (P16, Male, Public Institution)
	Pros and cons of birth control methods	"Some [people] believe that teaching contraceptives may encourage [early adolescents] to have sex... sexual activity is already there. Therefore, [we] have a program of teaching [early adolescents] about birth control and different methods they can use." (P12, Male, FBO) "They advise parents to provide condoms to their children when they go to school, but I think that is not the first thing to teach" (P05, Male, Public Institution)

adolescents should focus on cultural values and norms of "ideal girls" (called *Ni Nyampinga*) who abstain from sex, prevent HIV and other STIs, and/or use condoms. Participants perceived abstinence from sex as an important biblical spiritual requirement. They highlighted the role of FBOs in teaching girls about their specific dress codes, including avoiding miniskirts and trousers and keeping their hair natural. Participants also explored meanings and perceptions associated with dress codes in the context of values, culture and sexuality, saying that the way someone (a girl) dresses has a meaning. They had observed that people associated wearing short clothes like miniskirts with being modern and civilised, which they believed was a wrong perception. On the other hand, participants said that people believed short clothes symbolised attracting people's attention and a sign of being easily approachable for dating. Finally, participants articulated how the law protects early adolescents, highlighting that adolescents should not be abused and report sexual abuse (Table 2).

The fourth area mainly emphasised by the CSE for early adolescents in Rwanda is understanding gender (key concept 3). This area comprises three topics: social construction of gender and gender norms; gender equality, stereotypes and bias; and gender-based violence [24]. There were eight CSE competences in the curriculum, six of which focused on gender equality, stereotypes, and bias (Fig. 1). Qualitative results in this area revealed that sexuality education for early adolescents focused on gender equality and the importance of giving equal opportunities to both boys and girls. In addition, key informants highlighted that CSE of early adolescents tackled gender roles and responsibilities of boys and girls. While some

participants viewed the early adolescent boys and girls' roles as interchangeable and complementary, despite their biological differences, some participants said they teach early adolescents differential roles and responsibilities in marriage. For example, the husband is expected, among other things, to secure shelter, food and clothing for the family, including the wife. In contrast, married women's responsibilities involve respecting their husbands and food and bed preparation, including bed making and being ready for sex. Some participants advocated for sexuality education that strengthens self-confidence, decision-making, critical thinking, independence, and self-reliance. At the same time, someone recommended introducing content on lesbian, gay, bisexual, transgender, and intersex (LGBTI) as an integral part of sexuality at later stages of their sexual development in adolescence (Table 2).

The area of relationships (key concept 1) comprises four topics: families; friendship, love and romantic relationships; tolerance, inclusion and respect; and long-term commitment and parenting [24]. The curriculum review showed that this area yielded six CSE competences, most of which fell on friendship, love, and romantic relationships. There were no CSE competences related to long-term commitments and parenting (Fig. 1). Qualitative findings in this area indicated that teaching CSE focused on establishing good and safe relationships with friends, especially between boys and girls. In addition, they suggested that early adolescents should learn about marriage and the qualities of good husbands and wives who will build good families. Key informants from faith-based organisations (FBOs) offered a special emphasis on teaching about long-term commitments, quoting the

importance of Biblical virtues, including avoiding conjugal infidelity and abortion, decision-making and the meaning of marriage (Table 2).

The next area of CSE covered by the competence-based curriculum in Rwanda was sexuality and sexual behaviours (key concept 7). This area consists of two topics: sex, sexuality, and sexuality life cycle, and sexual behaviour and sexual response [24]. The curriculum review indicated that this area has only five CSE competences for early adolescents (Fig. 1), mainly on the topic of sexual behaviour and sexual response, which had four competences. Qualitative findings in this area indicated that sexuality education for early adolescents emphasised behaviours that were appropriate to their developmental stage and the consequences of inappropriate behaviours. One participant from a public institution indicated that sexual instinct is an important topic for early adolescents and perceived it as a natural phenomenon of developmental processes but regretted that most teachers and parents tend to overlook it (Table 2).

The area of skills for health and wellbeing (key concept 5) comprises the following five topics: norms and peer influence on sexual behaviours; decision-making; communication, refusal and negotiation skills; media literacy and sexuality; and finding help and support [24]. The curriculum review showed that this area had four CSE competences in total, with three on decision-making and one on norms and peer influence. There were no CSE competences for the remaining three topics (Fig. 1). Qualitative findings in this area highlighted that early adolescents learn to foster their decision-making and skills related to access and use of condoms (Table 2).

The area of violence and staying safe (key concept 4) comprises three topics of violence; consent, violence and bodily integrity; safe use of information and communication technologies (ICTs) [24]. This area was the least represented in CSE competences, with only two competences related to the topic of violence. There were no competences on consent, privacy, bodily integrity, and safe use of information and communication technologies (Fig. 1). Qualitative findings emphasize that early adolescents learn to refuse unwanted sexual activity, resist temptations, and report any information related to sexual violence. In addition, girls learn self-respect, standing firm, and to 'say no' to all requests for undesired sexual activity (Table 2).

Discussion

The current study provides a review of the content of CSE as reflected in the competence-based curriculum for early adolescents in Rwanda, and assesses which aspects of international guidelines on sexuality education are represented in this curriculum of CSE in the Rwandan

schools. The literature indicates that sexuality education may be delivered as a stand-alone or integrated subject [7, 25]. In this review, the competence-based curriculum integrates CSE into existing subjects. In other settings, sexuality education is delivered in the subject of Biology to emphasise biological aspects of sexuality [9, 22, 42, 43] rather than focusing on human rights and skills development. As the selection of such subjects depends on the country, the types of school, and other conditions [25, 43], the findings from this study highlighted that the subjects of Social Studies, Science and Elementary Technology, and Knowledge of Environment were the ones that accommodate CSE in Rwanda in addition to other subjects mentioned in the current study.

Integrating CSE into extant subjects is preferred in Sub-Saharan Africa and has the advantage of reducing pressure of an additional subject on students and teachers, as well as the need for a specially trained teacher [44]. However, studies indicate that CSE may be given inadequate weight when integrated into other subjects because it is perceived as diluted into other subjects [45, 46]. In addition, this integration may result in allocating limited budget to CSE for some schools and development of inadequate teaching materials by untrained teachers [22]. Finally, when CSE is integrated into elective and/or non-examinable subjects, students may miss some CSE content, or, some teachers may pay little attention to these subjects that are not examinable [45, 47]. It is however important to note that the competence-based curriculum in Rwanda indicates that the subjects in which CSE is integrated are mandatory and examinable [40]. A standalone CSE subject provides opportunities for monitoring and evaluating programming, and revising the curriculum when necessary [7]. Therefore, delivering CSE as a standalone or integrated subject, or a combination of both in Rwanda has its implications that are beyond the scope of this research.

This study showed that the competence-based curriculum integrates sexuality education in pre-primary education level, which echoes the recommendations to initiate CSE in childhood, including kindergarten and preschool [48]. The number of CSE competences included in the curriculum increases progressively by age, with a small amount of CSE competences in lower grades and high amount of competences in lower-secondary education (12–14 years). This echoes sexuality education guidelines indicate that CSE should be age- and developmentally appropriate [2, 3, 24, 48, 49].

The Government of Rwanda recognizes that CSE should cover equally the eight key areas recommended by ITGSE [34]. However, this review of the competence-based curriculum in Rwanda indicates that CSE emphasises some key concepts and overlooks some equally

important others. Of the 58 CSE competences identified through all reviewed CSE curricula, many of them pertained to the key concept of sexual and reproductive health. CSE competences related to understanding, recognising and reducing the risk of STIs, including HIV, and those related to pregnancy and its prevention were respectively the most frequent in the competence-based curriculum. Keogh et al. [30] indicate that imbalances in coverage of CSE are due to prioritisation of certain areas over others. HIV and other STDs and pregnancy prevention were also the main focus of sexuality education programs in the United States of America (USA) [50], which contrasts with current findings. Similarly, in Mexico [51], CSE emphasizes on topics related to the human body and development, such as sexual and reproductive health anatomy, physiology, and puberty. Qualitative findings from the current study showed that the main reason for the Rwandan competence-based curriculum to focus on aspects of reproductive health anatomy and physiology is to teach early adolescents to protect themselves and reduce risks related to unsafe sexual activity, like the sex education in several settings, including the USA [26]. Furthermore, while the participants indicate that CSE focuses on preventing sexual violence among early adolescents, the results from the curriculum review show that this area is the least represented in CSE competences, which suggests a further elaboration of this area in the curriculum.

Although the competence-based curriculum defines the CSE content for early adolescents in Rwanda, it is important to provide a reference book for teachers of the pre-primary and primary levels in order to standardize and optimize the implementation of CSE program in Rwanda. The Rwanda Education Board published in 2018 a teachers' reference book on CSE in secondary education level [34]. The main objectives of this book are, among others, to help teachers address their own value conflicts and build learners' knowledge, skills and attitudes related to sexuality, reproductive health and communication. However, this book does not allocate the content to each intended education levels nor provide guidance on CSE for the pre-primary and primary levels, which suggest different pathways of implementation at these levels.

Globally, despite the existence of sexuality education standards [24–27, 52], the content of CSE programs is dissimilar across countries [50]. For example, contrary to Ghana, where most of sexuality topics are taught [30], this review of the competence-based curriculum shows that prescribed contents of CSE programme for early adolescents in Rwanda does not address all key concepts and topics suggested by UNESCO's ITGSE [24]. This study aligns with the findings from other settings that

there are differences and gaps in sexual health education curriculum content within and across countries, namely in the USA, United Kingdom, Mainland China, Hong Kong, and Taiwan [3]. While sexual health education in Kenya puts little emphasis on gender and sexual and reproductive rights [30], this study indicated the need to emphasise on the key concepts that were not sufficiently reflected in the CSE programme for early adolescents in Rwanda. These key concepts include violence and staying safe (key concept 4), skills for health and wellbeing (key concept 5), sexuality and sexual behaviours (key concept 7), and relationships (key concept 1). In addition, these key concepts have a limited number of CSE competences in the competence-based curriculum. In addition, eight of the 27 CSE topics suggested by UNESCO's ITGSE [24] are not addressed by the CSE programme for early adolescents as indicated in this study. These findings suggest that early adolescents officially receive little or no information about the following important topics: long-term commitment and parenting; cultural aspects of sexuality; bodily integrity; safe use of information and communication; negotiation of safe sex; effective use of media for better sexual health, seeking help and body image. Furthermore, six recommended CSE topics appear only once in the competence-based curriculum in Rwanda, which suggests a further representation of these topics in the curriculum. These topics include families; and tolerance, inclusion, and respect in key concept 1; social construction of gender and gender norms and gender-based violence in key concept 3; norms and peer influence on sexual behaviour in key concept 5; and sex, sexuality and sexual life cycle in key concept 7.

Qualitative findings suggested additional CSE topics to the competence-based curriculum in Rwanda, such as safe sex, sexual pleasure, desire, and sexual orientation. This study noted that the CSE curriculum tends to focus more on the consequences of unprotected sexual activity and fails to consider safer and pleasurable sex topics. Despite being controversial [9], a previous qualitative study indicates that discourse around pleasured sex is often associated with negative outcomes such as not using condoms, rushing into sex, regretted sex, pregnancy or sexually transmitted diseases [53]. However, many scholars advocate that this topic be included in CSE content [9, 17, 26, 49, 54], as CSE on sexual expression and pleasure yielded more positive outcomes [16]. Integrating sexual pleasure into CSE offers a positive approach to adolescents' sexuality, leading to increased contraceptive use and sexual agency [43].

Although mentioned by only one participant in this study, teaching young adolescents about controversial topics such as sexual orientation, namely about lesbian, gay, bisexual, transgender, or intersex (LGBTI), is an

important topic that aligns with international guidance on sexuality education [24]. This finding echoes the recommendations from Crockett, Deardorff [42] to prevent associated harassment and discrimination against LGBTI people. In this perspective, scholars in Sub-Saharan Africa advocate for including in the curriculum and teaching culturally controversial topics such as abortion, homosexuality, and masturbation because these topics are avoided, skipped in the CSE programs or discussed in a negative light [44]. According to the UNFPA, sexual diversity is part of the topics about which children and young people should acquire accurate information [23]. In addition, the need to extend CSE to practical skills related to contraceptives was documented in Ghana [55].

Due to anticipating the consequences of an unexpected pregnancy, participants in the current study perceived that CSE for early adolescents focuses on pregnancy prevention more for girls than for boys. A study on young Romanian people indicated that, at the family level, girls get involved most often in sexual and reproductive health education compared to boys to prevent the negative effects of sexual activity, including early pregnancy [56]. In addition, research evidence on gender norms and sexuality of young adolescents in Uganda indicated that, compared to boys, adolescent girls experience more challenges in their sexual health and need more protection and supervision [57]. A previous study depicts girls as more vulnerable to unwanted sexual behaviour [58]. This study found that the competence-based curriculum focuses narrowly on violence and staying safe (key concept 4) and stresses the need to educate early adolescents, especially girls, on this topic, as they are more prone to physical and sexual assault than boys [50].

Participants from the current study disagree about the presence of some topics in the CSE programme for early adolescents in Rwanda such as abstinence, birth control methods including condoms. Participants from FBOs rely on Biblical virtues and support contents encouraging abstinence while public institutions aim to introduce birth control methods to prevent early pregnancy. FBOs argue that some content of CSE, especially condom use, because it compromises moral values and may lead to initiating early sexual activity among early adolescents. Studies indicate that CSE has significant positive results on adolescents' behaviours [59, 60] and increases condom or contraceptive use [61]. Furthermore, evidence from a cluster randomized trial in Uganda concluded that delivering CSE to early adolescents does not result in early initiation of sexual activity [18].

This study highlights the influence of FBOs on the content of CSE programs and it is important to note that the Rwandan population is highly religious, as 93% of them are affiliated with different religions, dominated by

Christianity [37]. Research in east and southern Africa indicates that religious leaders are willing to provide and influence CSE programmes for children in Africa because of the presence of religious institutions in most communities and their authority [62]. It is equally important to note that effective CSE should be broader and provides a wide range of possibilities for young people to practice safer sex, and is not limited to promoting abstinence only [63]. Regrettably, studies on sexuality education in four low- and middle-income countries highlight that contraception methods are neglected [30] or less emphasised [9, 64], and CSE focuses only on abstinence as the main method of preventing pregnancy [44]. The ITGSE suggests that engaging with religious leaders may help resolve these different views on the content of CSE programmes and conciliate what religions teach, scientific evidence, and lived reality of young adolescents [24].

Limitations

We do not claim to have exhausted the analysis of all topics covered by comprehensive sexuality education as reflected in the competence-based curriculum in Rwanda. This study reviews only the competence-based curriculum published by the Rwanda Education Board, the only institution mandated to develop and distribute curricula documents to Rwandan public schools. Private international schools' curricula were not included in this review. Despite this limitation, this study provides an overview of the scope of CSE programme for early adolescents for safe sexual and reproductive health and the extent to which the competence-based curriculum aligns with international guidelines on sexuality education. Further studies would assess the quality and challenges related to implementing CSE among early adolescents. There is also a need to extend this study to early out-of-school adolescents. Furthermore, this review was limited to the curriculum designed for public schools although some private schools use the same curricular. Future research would also aim to understand how private schools using other international curricula in Rwanda meet the education need of early adolescents in terms of CSE coverage, which would provide additional findings to reflect on the overall content of CSE for early adolescents in general. Finally, there is a need to understand how the implementation of the Rwandan competence-based curriculum influences learning about CSE for early adolescents. Specifically, studies should assess whether CSE competences described in the curriculum correspond to what early adolescents really learn in their schools or represent their actual CSE competences in Rwanda, as well as what factors influence the implementation of CSE curriculum in Rwanda.

Conclusion

CSE is an effective means to facilitate access to sexual and reproductive health and rights information and improve the knowledge of young adolescents. The Rwandan competence-based curriculum introduced the CSE to respond to inadequate knowledge about sexuality, gender, and reproductive health among learners in 2016. The review of this curriculum suggests that it aligns to some extent with international guidelines on sexuality education but needs further elaboration to serve its purpose among early adolescents in Rwanda. In addition, education stakeholders in Rwanda need to harmonize the content of CSE and extend the focus to areas of CSE that are not adequately addressed, including those that are still locally controversial but internationally recommended.

Abbreviations

CARTA	Consortium for Advanced Research Training in Africa
CMHS	College of Medicine and Health Sciences
CSE	Comprehensive Sexuality Education
ITGSE	International Technical Guidance on Sexuality Education.
IRB	Institutional Review Board
HREC	Human Research Ethics Committee
NCST	National Council for Science and Technology
REB	Rwanda Education Board
SRH	Sexual and reproductive health
SRHR	sexual and reproductive health and rights

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Authors' contributions

VM, DNC, and SG participated in the conception and design of the manuscript. VM drafted the manuscript and collected and analysed data, while DNC and SG reviewed the manuscript and supported the writing process including data reporting and interpretation. All authors read and approved the final manuscript.

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Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

This study obtained ethical approval from the Human Research Ethics Committee (HREC) of the University of the Witwatersrand (Clearance certificate no. M190303) and the Institutional Review Board (IRB) of the College of Medicine and Health Sciences (CMHS) at the University of Rwanda (approval notice No 401/CMHS IRB/2018). The Rwanda National Council for Science and Technology (NCST) also granted a research permit for this study (reference: No

NCST/482/136/2019). We conducted interviews in designated key informants' private rooms of their work settings. Participants had time to read all study-related information and ask questions. Participants also signed informed consent forms before interviews. Interviewers digitally recorded the interviews with the approval of the participants. Access to data was restricted to the research team only. The study findings were anonymously reported using specific codes assigned to each participant. All methods in this study were performed in accordance with the Declaration of Helsinki on ethical principles for medical research involving human subjects.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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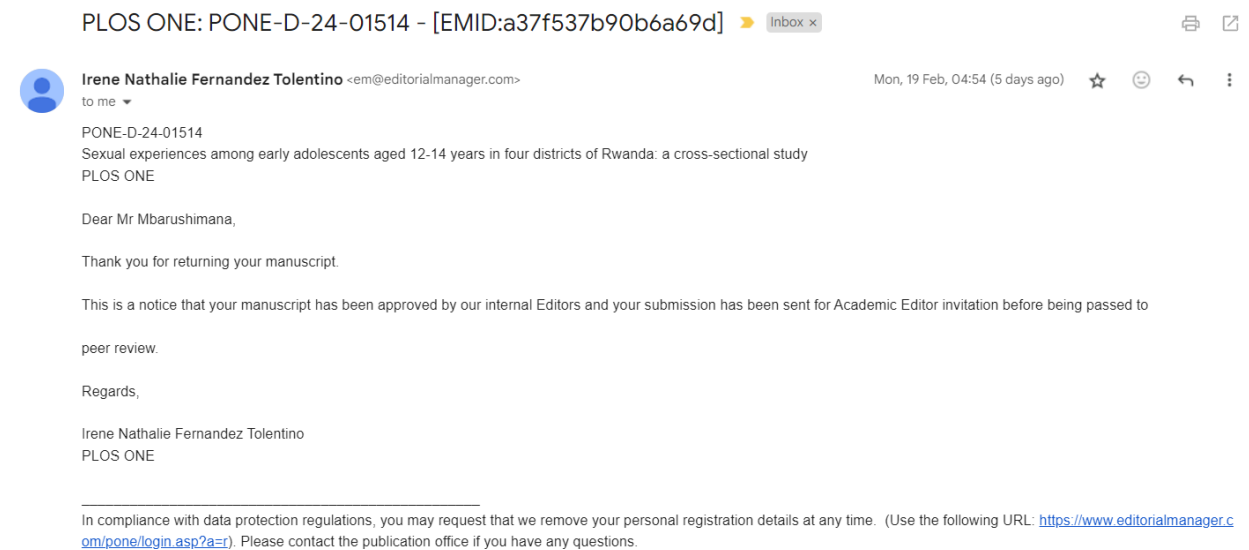
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APPENDIX 31: PAPER 3 (UNDER REVIEW IN PLOS ONE)



Sexual experiences among early adolescents aged 12-14 Years in four districts of Rwanda: a cross-sectional study

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Abstract

Background

Globally, early adolescents (10-14 years) represent 8% of the world population, and Africa accounts for 25% of them. Although a minority of early adolescents have initiated sexual intercourse, their sexual curiosity results in the exploration and understanding of sexuality. Early sexual intercourse may lead to sexually transmitted infections, HIV/AIDS, early pregnancy or fatherhood, and early marriage. Early sexual activity is associated with high rates of unplanned pregnancy, multiple sexual partners, and other forms of risky sexual behaviours. Understanding sexual activity among early adolescents can contribute to designing interventions that adequately address their needs. However, there is limited information about early adolescents' sexual activity

and the social-ecological factors associated with their sexual experiences. This study aimed to determine the prevalence of sexual activity and the social-ecological factors associated with sexual experiences among early adolescents (12-14 years) in Rwanda.

Methods

We conducted a descriptive cross-sectional study among early adolescents (12-14 years) from four districts between 01/09/2020 and 17/12/2020. A multistage sampling technique was used to select 56 participants from each school, including 28 males and females from grades one and two, who were randomly selected. We used an adapted version of the Illustrative Questionnaire for Interview - Surveys with Young People. Questions focused on nonpenetrative and penetrative sexual experiences in addition to sociodemographic and other social-ecological characteristics. Ethical clearance was obtained from the University of Rwanda and the University of the Witwatersrand, Johannesburg. Written parental or legal guardian consent and participants' assent were obtained. We conducted the data analysis in Stata 14.2. We used descriptive statistics (frequencies and proportions) and bivariate and multivariate logistic regression analyses with 95% confidence intervals (CIs) and a significance level of p-value <0.05.

Results

The study included 811 participants, 55.1% of whom were aged 14, 30.5% were aged 13, and 14.4% were aged 12. Most participants (n=539, 73.5%) lived with both parents, and 48.8% (n=395) described the socioeconomic status of their households as well-off. Nearly 81% (n=658) of the participants indicated that they had experienced non-penetrative sex, and 53 of 759 participants (7%) reported that they had experienced penetrative sex. The social-ecological factors significantly associated with nonpenetrative sexual experiences were attending parties (AOR=6.8, 95% CI= 1.6-29.2), internet use (AOR=1.9, 95% CI= 1.1-3.3) (individual level), and their fathers' low education (primary: AOR=2.6, 95% CI= 1.4-5.0; secondary: AOR=1.9, 95%CI: 1.0-3.8) (family level). Individual level factors such as male sex (AOR: 4.6, 95% CI= 1.8-12.4), alcohol consumption (AOR=3.5, 95% CI= 1.4-8.8), watching pornography (3-4 times: AOR=7.5, 95% CI= 1.6-34.9, ≥ five times: AOR= 5.1, 95% CI= 1.7-15.0), being a double orphan (AOR:17.8, 95% CI= 1.9-170.2), discussing sex matters often with one's father (AOR=6.5, 95% CI= 1.8-23.2) (family and relationship level), and forced sexual intercourse (AOR=8.2, 95% CI= 2.7-25.4) (community level) were social-ecological factors associated with penetrative sexual experience.

Conclusion

Nonpenetrative sexual experience was common, with few participants reporting penetrative sexual experience. The social-ecological factors associated with sexual experiences among early adolescents are modifiable and can assist in planning healthy sexual interventions for this age group.

Keywords: sexual and reproductive health and rights, early adolescence, sexual experience, social-ecological framework, Rwanda

Introduction

Globally, the population of early adolescents (10-14 years) represents 8% of the world population, and the majority of these individuals live in developing countries [26]. Of the estimated 545 million early adolescents in developing countries in 2016, 143 million (26%) lived in Africa [26]. This population of early adolescents in the developing world will grow by 5% by 2030, mainly in Africa, where it is predicted to grow by 34%; this population will stabilise in Asia and decrease in Latin America and the Caribbean by 2030 [26]. In Rwanda, the fourth population and Housing Census 2012 estimated early adolescents (10-14 years) to constitute 12% of the total population [249]. Sexual experiences during early adolescence are a particular focus of this study because behaviours adopted during this period tend to persist into late adolescence and adulthood; hence, there is a need for timely intervention [32].

Adolescence is a critical period of life during which people undergo significant biological, psychological, and social changes [33], and this period marks the transition from childhood to adulthood, during which major sexual developments occur [3, 42]. The literature categorises adolescence into early (at times called very young) adolescence (10-14 years) and late (15-19 years) adolescence [1, 36, 37]. One of the salient changes in early adolescence is the body changes and sexual maturation [26]. As these changes occur in early adolescents, they acquire information, develop attitudes, adopt new behaviours, and initiate sexual relationships [2]. This period provides an opportunity to address sexual violence and gender discriminatory norms before they become solid by late adolescence and adulthood [43].

Although a minority of early adolescents have initiated sexual intercourse, sexual curiosity increases during adolescence and leads to the exploration and understanding of sexuality [2, 42, 64]. Sexual exposure becomes important during this period and may result in sexually transmitted infections, HIV/AIDS, adolescent pregnancy, adolescent fatherhood, and early marriage [2, 42], all of which can have further consequences [105]. In particular, sexual activity in adolescents aged under 15 years is associated with high rates of unplanned pregnancy, multiple sexual partners, and other forms of risky sexual behaviours [104]. Therefore, parents, policymakers and stakeholders must intervene before early adolescents face these risks and understand their behaviours to undertake timely, appropriate interventions.

The literature indicates that the sexual and reproductive health and rights of early adolescents are influenced by their social-ecological conditions [14, 53, 123, 246]. Deriving from Bronfenbrenner's Ecology of Human Development [52], Svanemyr et al. suggest that a social-ecological framework recognises multiple influences on sexual behaviours and health outcomes operating at intrapersonal (e.g., sex, religious affiliation, etc.), interpersonal (e.g., relationships with parents), organisational (e.g., structures such as type of school), community (e.g., access to media) and public policy (e.g., current policies and laws on adolescent sexual and reproductive health) levels [53, 246]. Furthermore, this framework suggests that such influence interacts across these levels and requires focusing on specific behaviours and outcomes (e.g., sexual experience)

[246]. Finally, the framework suggests that effective interventions should be conducted at multiple levels [246]. The ecological model is applied to understand the predictors of a wide range of behaviours and sexual health outcomes [246], including sexual experiences among early adolescents. In this study, we reasoned that the nonpenetrative and penetrative sexual experiences of early adolescents occur in this social-ecological environment and that the factors associated with such experience are embedded in this framework.

The literature focusing on early adolescents (10-14) is relatively sparse compared with that on older adolescents (15-19 years) [26, 199, 393]. Most often, surveys on sexual behaviours miss this age group because of their young age, and subsequently, national programmes do not reach them [321]. In addition, many studies emphasise vaginal experience, and a few of them discuss nonvaginal experience during adolescence [42]. Furthermore, the literature conceptualises sexual experience as penile-vaginal intercourse [24]. Nevertheless, sexual development is multidimensional, and credit should also be given to other romantic relationships, such as boyfriend or girlfriend, nonpenetrative sexual experiences including holding, hugging, kissing or touching, and penetrative experiences (vaginal, oral, anal) [24]. However, evidence on the nonpenetrative and penetrative sexual activities of early adolescents is still scant, especially in sub-Saharan Africa. The purpose of this study was to assess the prevalence of all sexual activity among early adolescents (12-14 years) and to determine, from the social-ecological perspective, the factors associated with their sexual experiences in four districts of Rwanda.

Materials and methods

Study design

We conducted a descriptive cross-sectional study between 01/09/2020 and 17/12/2020 as part of a larger study of early adolescents' knowledge, beliefs, and behaviours regarding gender and sexuality: implications for sexual experience and health outcomes in Rwanda.

Study setting

This study was conducted in 16 secondary schools in four districts with a higher prevalence of adolescent pregnancy based on the data from the Demographic and Health Survey conducted in 2014-2015 [255]. These included two urban districts (Gasabo with 12.5% and Nyarugenge with 8.8%) and two rural districts (Rwamagana: 11.9% and Ruhango: 8.2%) [255].

Study population and sampling

The study population comprised school-going early adolescents (12-14 years) in the four selected districts. We used a multistage sampling strategy to recruit the study participants from 16 secondary schools. We randomly sampled two public and two private secondary schools in each district. In each school, we selected early adolescents in senior one and senior two classes of lower secondary education levels because, according to the Rwanda curriculum framework, we expected early adolescents (12-14 years) to be in these grades [182]. We randomly sampled one class for each school grade from several other classes and chose the existing class for schools with only one

grade. We used a lottery method in each class to randomly select an equal number of boys and girls per grade. Therefore, 14 boys and 14 girls were selected to obtain 28 early adolescents for each grade (senior one or senior two). Consequently, 56 early adolescents were sampled from each school. We collected data from 896 learners but excluded data from 85 learners because they were older than 14 years. The final sample size was 811 early adolescents. All participants provided informed consent from their parents or legal guardians and signed informed assent forms.

Data collection procedures

We contacted Heads of schools to whom we presented the study approvals and authorisation documentation. This documentation included ethical approvals and other administrative authorisations from the relevant institutions controlling research in Rwanda. We then discussed and set together the data collection plans with Heads of schools and affiliated school staff, including the school counsellors. A research team comprising the principal investigator and eight trained research assistants collected the data. On agreed dates, the Heads of schools and other staff members assisted the research team in connecting with the study participants and facilitated the data collection process. Participants received information about the study's objective and topics addressed in the questionnaire. Participants were advised that their participation was voluntary and that they had the right to stop answering survey questions whenever they wished. The data were collected in classrooms where participants gathered at adequate distances to keep their answers confidential. Each participant received a hard copy of the survey questionnaire and individual assistance from the research team members to answer the questions. The survey questions were read aloud one by one by research assistants, and the participants were given adequate time to record their answers on the questionnaire. Research team members monitored the entire process of data collection until completion.

Data collection tool

We adapted and used the World Health Organisation (WHO)'s illustrative questionnaire for interview – survey with young people [271]. This questionnaire was designed to investigate the sexual and reproductive health of young people, including early adolescents [271], and was approved by the WHO [203]. This questionnaire has been used in low- and middle-income countries where high validity has been reported [193], and it has been previously used in studies of older [204, 209, 272, 273] and early adolescents [155, 193, 231]. The questionnaire content was supplemented by literature on sexual experiences [24-29, 84, 105, 205, 219, 221, 240]. Professionals translated the questionnaire into the local language (Kinyarwanda) and back-translated it into English to ensure consistency. The adapted version was pretested on 20 early adolescents from two schools who were not part of the sample to ascertain the clarity and conciseness of the questions.

Measures

Outcome variables

In this study, sexual experience comprises nonpenetrative and penetrative/coital sexual experiences. We asked participants if they had ever had a partner using a dichotomous question (yes/no): do you have or have you ever had a girlfriend, boyfriend or partner (someone whom you 'dated' (dating: going out together unaccompanied by other adults)? The participants who responded (yes) responded to a series of dichotomous questions (yes/no) as indicated in Table 1 to reflect on their involvement in the nonpenetrative activity.

Lifetime nonpenetrative sexual experience was a composite measure obtained from eight questions on various sexual activities, including hugging, holding hands, caressing, kissing, touching, or stroking genitals, as depicted in Table 1. A positive response (yes) to these activities was considered to indicate the presence of nonpenetrative sexual experience.

Lifetime penetrative sexual experience was also a composite measure generated from three questions on experience of oral sex and anal and/or vaginal intercourse. A positive response (yes) to any of these questions was considered as an indication of lifetime penetrative sexual experience. Because we expected few cases of penetrative sexual experience among early adolescents, we preferred lifetime experience to a past year's experience for low-frequency sexual behaviours [24, 28].

Table 1: Measures of participants' lifetime sexual experience

Type of experience	Questions asked	Level of measurement
Nonpenetrative sexual experience	Did you and your boy/girlfriend/partner have any physical contact, such as hugging? Did you and your boy/girlfriend/partner have physical contact, such as holding hands? Did you and your boy/girlfriend/partner have any physical contact, such as caressing each other's bodies? Did you ever kiss your boy/girlfriend/partner on the lips? Did you ever touch your boy/girlfriend/partner's vagina/penis with your hand? Did you ever stroke your boy/girlfriend/partner's vagina/penis so that she/he climaxed? Did your boy/girlfriend/partner ever touch your penis/vagina with her /his hand? Did your boy/girlfriend/partner ever stroke your penis/vagina so that you climaxed?	Yes/no
Penetrative sexual experience	Have you ever had oral sex? (oral sex is when a partner puts his/her mouth on your sex organs or you put your mouth on his/her sex organs) Have you ever had anal intercourse? (when a man inserts his penis into his partner's anus)	Yes/no

	Have you ever had vaginal intercourse with anyone? (Vaginal intercourse is when a boy/man inserts his penis into a girl's/woman's vagina)	

Social-ecological covariates

We collected social-ecological covariates at the individual, family relationships, and community levels. At the individual level, we included sex (female/male), age in years (12-14), school grade (senior one or two), and religious affiliation (catholic/protestant/others). We also included information such as ever using a mobile phone (yes/no), ever attending parties where young people danced (yes/no), ever drinking alcohol (yes/no), ever smoking cigarettes (yes/no), ever using of cannabis (yes/no), ever using the internet (yes/no), ever searching for pregnancy or puberty information on the internet (yes/no), and ever watching pornography (never, 1-2 times, 3-4 times, ≥ 5 times). Covariates included at the family and relationships level were parents' life status (none, one, both); living with these parents (none, one, both); household economic status as measured in the Ubudehe category (categories one to two and categories three to four) [299], father's and mother's level of education (primary or lower, technical and vocational education training-TVET, secondary, higher); ever discussed sex matters with the father, mother, brothers or sisters (often, occasionally, never); and perceived ease in communicating with the father, mother, and brothers or sisters (very easy, average, very difficult, do not see him/her/them). Social-ecological covariates at the community level included access to SRHR information (yes/no), type of school (public/private), ever being forced to have sexual intercourse (yes/no), and ever being touched on private parts (e.g., breast) unwillingly.

Data analysis

We conducted the data analysis in Stata 14.2 for Windows. We constructed frequency tables for all the sociodemographic characteristics of the participants. We conducted bivariate and logistic regression analyses to assess the factors associated with nonpenetrative and penetrative experiences. All variables with statistically significant results ($p < 0.05$) at the bivariate analysis level were included in the logistic regression analysis, where we assessed the effect of each social-ecological covariate on participants' sexual experience. We report crude and adjusted odds ratios (ORs) with their 95% confidence intervals (CIs). The results with $p < 0.05$ were considered as significant.

Ethical considerations

This study received ethical approval from the Institutional Review Board (IRB) of the College of Medicine and Health Sciences at the University of Rwanda (UR-CMHS) (No. 543/CMHS IRB/2019) and the Human Research Ethics Committee (HREC)-Medical of the University of the Witwatersrand (clearance certificate no. M190303). In addition, the National Council for Science and Technology (NCST) in Rwanda issued a research permit no. NCST/482/136/2019 for the current study. Before the data collection, we provided the study information to the parents and legal guardians of the participants and the participants themselves. During the recruitment process,

both parents or legal guardians and participants were given opportunities to ask questions and we responded to each question to their satisfaction. We requested parents to voluntarily provide written informed consent to recruit their children to the study. Participants whose parents or legal guardians consented were requested to voluntarily provide written informed assent. Only participants who provided written assent were recruited for the study. We collected the data anonymously using personal identification codes on the questionnaires. There was adequate distance between participants for their privacy and data confidentiality reasons. We conducted this study following all national regulations and with the principles governing research involving human subjects. School counsellors were ready to assist in cases of child distress.

Results

Participants' characteristics

Individual characteristics

Of the 811 participants included in the analysis, 413 (50.9%) were girls, and the majority 447 (55.1%) were 14 years old. The overall mean age was 13.4 ± 0.7 years. Most participants, 423 (52.2%), were in senior one. Of the 803 participants who indicated their religious affiliation, 290 (36.1%) participants were affiliated with the Roman Catholic Church, and the majority, 370 (46.1%), were affiliated with the Protestant Church (ADEPR and Adventist). More boys (36.4%) than girls (31.2%), $n=788$, reported that they had ever used mobile phones.

Table 2: Distribution of sociodemographic and behavioural characteristics of participants by sex

		Male		Female		All	
Characteristics	Categories	n	%	n	%	n	%
Individual characteristics and behaviours							
Age in years (n=811)	12	57	14.32	60	14.53	117	14.43
	13	105	26.38	142	34.38	247	30.46
	14	236	59.30	211	51.09	447	55.12
	Mean	13.5 ± 0.7		13.4 ± 0.7		13.4 ± 0.7	
School grade (n=811)	Senior 1	212	53.27	211	51.09	423	52.16
	Senior 2	186	46.73	202	48.91	388	47.84
Religion (n=803)	Catholic	140	35.44	150	36.76	290	36.11
	Protestant	185	46.84	185	45.34	370	46.08
	Others	70	17.72	73	17.89	143	17.81
Behaviours							
Ever used a mobile phone (n=788) ***	Yes	287	74.35	246	61.19	533	67.64
	No	99	25.65	156	38.81	255	32.36
Ever attended parties where young people dance (n=782)	Yes	48	12.24	38	9.50	86	10.86
	No	344	87.76	362	90.50	706	89.14
Ever drink alcohol (n=776) *	Yes	59	15.28	38	9.74	97	12.50
	No	327	84.72	352	90.26	679	87.50
Ever smoked cigarette (n=788)	Yes	12	3.13	6	1.49	18	2.28
	No	372	96.88	398	98.51	770	97.72

		Male		Female		All	
Characteristics	Categories	n	%	n	%	n	%
Ever use of cannabis (n=775) **	Yes	16	4.21	3	0.76	19	2.45
	No	364	95.79	392	99.24	756	97.55
Ever used internet (n=762) ***	Yes	216	57.60	174	44.96	390	51.18
	No	159	42.40	213	55.04	372	48.82
Ever searched SRH information from the internet (n=620)	Yes	116	36.48	109	36.09	225	36.29
	No	202	63.52	193	63.91	395	63.71
Frequency of ever watching pornographic films (n=783) ***	Never	228	59.69	316	78.80	544	69.48
	1-2 times	101	26.44	58	14.46	159	20.31
	3-4 times	16	4.19	6	1.50	22	2.81
	≥ 5 times	37	9.69	21	5.24	58	7.41
Family & relationships							
Parents are alive (n=802)	None is alive	7	1.79	2	0.49	9	1.12
	One parent is alive	37	9.44	36	8.78	73	9.10
	Both parents are alive	348	88.78	372	90.73	720	89.78
Living with parents (n=733)*	None parent	9	2.55	23	6.05	32	4.37
	One parent	74	20.96	88	23.16	162	22.10
	Both parents	270	76.49	269	70.79	539	73.53
Household economic status Categories (n=811)+	Category 1/2	129	32.41	157	38.01	286	35.27
	Category 3/4	196	49.25	199	48.18	395	48.71
	Do not know	73	18.34	57	13.80	130	16.03
Father's level of education (n=625)	Primary & lower	123	41.00	116	35.69	239	38.24
	TVET	38	12.67	37	11.38	75	12.00
	Secondary	79	26.33	102	31.38	181	28.96
	Higher	60	20.00	70	21.54	130	20.80
Mother's level of education (n=693)	Primary or lower	140	41.67	165	46.22	305	44.01
	TVET	31	9.23	35	9.80	66	9.52
	Secondary	94	27.98	96	26.89	190	27.42
	Higher	71	21.13	61	17.09	132	19.05
Ever discussed sex matters with the father (n=790)	Often	29	7.53	24	5.93	53	6.71
	Occasionally	116	30.13	102	25.19	218	27.59
	Never	240	62.34	279	68.89	519	65.70
Ever discussed sex matters with the mother (n=790)***	Often	69	17.97	175	43.10	244	30.89
	Occasionally	130	33.85	155	38.18	285	36.08
	Never	185	48.18	76	18.72	261	33.04
Ever discussed sex matters with the brothers or sisters (n=788)*	Often	37	9.61	52	12.90	89	11.29
	Occasionally	94	24.42	121	30.02	215	27.28
	Never	254	65.97	230	57.07	484	61.42
Perceived ease in communicating with the father (n=696)	(Very) easy	198	59.28	198	54.70	396	56.90
	Average	59	17.66	69	19.06	128	18.39
	(very) difficult	48	14.37	60	16.57	108	15.52
	Do not see him	29	8.68	35	9.67	64	9.20
Perceived ease in communicating with the mother (n=773)	(Very) easy	313	83.47	324	81.41	637	82.41
	Average	34	9.07	38	9.55	72	9.31
	(very) difficult	22	5.87	26	6.53	48	6.21
	Do not see her	6	1.60	10	2.51	16	2.07

		Male		Female		All	
Characteristics	Categories	n	%	n	%	n	%
Perceived ease in communicating with brothers or sisters (n=789)	(Very) easy	317	81.49	319	79.75	636	80.61
	Average	36	9.25	35	8.75	71	9.00
	(very) difficult	26	6.68	36	9.00	62	7.86
	Do not see them	10	2.57	10	2.50	20	2.53
Community							
Ever accessed puberty/pregnancy information (n=811)**	Yes	357	89.70	393	95.16	750	92.48
	No	41	10.30	20	4.84	61	7.52
Type of school (n=811)	Public	207	52.01	217	52.54	424	52.28
	Private	191	47.99	196	47.46	387	47.72
Ever been forced to have sexual intercourse (n=750)	No	337	92.08	353	91.93	690	92.00
	Yes	29	7.92	31	8.07	60	8.0
Ever been touched on private parts (breast, etc.) without their willingness (n=739)	No	323	91.76	354	91.47	677	91.61
	Yes	29	8.24	33	8.53	62	8.39

Note:

+ **Economic status categories of households:** According to Ezeanya-Esiobu [299], the Government of Rwanda categorises households into four groups according to their socioeconomic status (the Ubudehe categories): the very poor and vulnerable individuals who are unable to feed themselves (category 1), those who can access low-class accommodations, those who have no paid employment, and those who eat twice or less a day (category 2). Those who earn money from their employment belong to Category 3, and those who have permanent employment and are well-off belong to Category 4.

TVET: Technical and vocational education and training

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

Almost 11% (n=86) of the 782 participants had ever attended parties where young people danced, including 48 boys (6.1%) and 38 girls (4.8%). Nearly 13% (n=97) of the 776 participants reported ever drinking alcohol, with a significantly greater proportion of boys (7.6%) than girls (4.9%). Furthermore, only 18 of the 788 participants (2.3%) reported ever smoking a cigarette, and 19 participants (2.5%), including 16 boys (4%), indicated having ever used cannabis. In total, 390 of the 762 participants (51.2%) had ever used the internet, with a significantly greater proportion of boys (28.4%) than girls (22.8%). However, 225 of the 620 participants (36.3%) searched SRH information online. Concerning watching pornography, 544 of the 783 participants (69.5%) noted that they had never watched pornographic films showing sexual activity. However, 159 of these participants (20.3%) watched these films 1-2 times, 58 of them (7.4%) have watched these films five times or more, and higher proportions of boys than girls watched such films.

Family and relationships

Of the 802 participants who provided the life status of their parents, 720 (89.8%) indicated that both of their parents were alive. Nearly 74% (n=539) of the 733 participants stayed with both parents, while 32 (4.4%) stayed with their parents. The findings indicated that households of 395 participants (48.7%) belonged to the third or fourth category of socioeconomic status, and 35% (n=286) of households belonged to the first or second category (low income). In contrast, 49% of

the participants were from high-income households (n=395). However, 130 participants (16%) needed to know the socioeconomic status of their households (Table 2). Primary and lower were the most common education levels for the participants' fathers (38.2%) and mothers (44%) of the 625 and 693 participants (respectively), followed by secondary education (28.9%) and (27.4%), respectively.

Concerning the perceived ease of communicating with their fathers, 396 (56.9%) indicated that this communication was easy or very easy, while 15.5% reported that it was difficult or very difficult. Although most participants indicated that they could communicate easily with their mothers (82%, n=637), 48 of them (6%) noted that this communication was difficult or very difficult. On the other hand, 637 participants (82%) expressed ease of communication with mothers, and 636 (81%) reported that it was easy or very easy to communicate with brothers or sisters.

Regarding discussing sex matters with family members, 519 (65.7%) of the 790 participants had never discussed sex matters with their fathers, while 33% had never had such a discussion with their mothers. Similarly, 484 (61%) never discussed sex issues with brothers or sisters (Table 2).

Community level

Seven hundred and fifty participants (92.2%) had access to SRHR information (including information on puberty and/or pregnancy), with a significantly greater percentage of girls (48.5%) than boys (44.0%) (Table 2). Most participants were from public schools (n=424, 52.3%). Sixty participants (8%) reported ever being forced to have sexual intercourse, while 62 (8.4%) participants indicated ever being touched on private parts against their will.

Early adolescents' sexual experience

Nonpenetrative sexual experiences

In terms of nonpenetrative sexual experience, participants reported having held hands (73.6%, n=787), hugged (58.6%, n=783), kissed their lips (13.3%, n=769), or caressed each other's body (12.1%, n=780). Twenty-three of the 757 participants (3%) indicated that they had ever stroked their partner's genitals to climax, and 20 of the 779 participants (2.6%) indicated that their partners had done this to them. Touching the partner's genitals was reported by 34 of 773 (4.4%) participants, while 36 of 764 participants (4.7%) indicated that their partners had ever touched theirs. Overall, the findings show that 532 of the 658 participants (80.9%) reported some form of nonpenetrative sexual experience (Table 3). In bivariate analysis, the factors associated with nonpenetrative sexual experience without adjustment for other factors included ever using mobile phones (COR= 1.6, 95% CI= 1.1-2.4); ever attending parties (COR= 9.9, 95% CI= 2.4-41.1); ever drinking alcohol (COR= 4.1, 95% CI= 1.6-10.3); ever using the internet (COR= 1.7, 95% CI= 1.1-2.5); and their father having a primary or lower education level (COR= 1.9, 95% CI= 1.1-3.5). Multivariate logistic regression analysis revealed that ever attending parties where young people danced (AOR= 6.8, 95% CI= 1.6-29.2), ever using the internet (AOR= 1.9, 95% CI= 1.1-3.3), and

having a father with lower education level (primary or lower: AOR=2.6, 95% CI= 1.3-5.0, and secondary education: AOR=1.9, 95%CI: 1.0-3.8) were factors significantly associated with nonpenetrative sexual experience (Table 4).

Table 3: Sexual experience of early adolescents by biological sex

Sexual experience	Gender							p-value
	Male		Female		All			
	n	%	n	%	n	%		
Non-penetrative experience								
Hugging	Yes	231	60.2	228	57.1	459	58.6	0.392
	No	153	39.8	171	42.9	324	41.4	
	Total	384	100.0	399	100.0	783	100.0	
Holding hands	Yes	290	74.9	289	72.3	579	73.6	0.393
	No	97	25.1	111	27.8	208	26.4	
	Total	387	100.0	400	100.0	787	100.0	
Caressing each other's bodies	Yes	63	16.4	31	7.8	94	12.1	<0.001
	No	321	83.6	365	92.2	686	87.9	
	Total	384	100.0	396	100.0	780	100.0	
Kissing a boy/girlfriend/partner on the lips	Yes	61	15.9	41	10.6	102	13.3	0.030
	No	322	84.1	345	89.4	667	86.7	
	Total	383	100.0	386	100.0	769	100.0	
Touching a boy/girlfriend/partner's vagina/penis with a hand	Yes	27	7.1	7	1.8	34	4.4	<0.001
	No	354	92.9	385	98.2	739	95.6	
	Total	381	100.0	392	100.0	773	100.0	
Stroking a boy/girlfriend/partner's vagina/penis so that she/he climaxed	Yes	18	4.9	5	1.3	23	3.0	0.004
	No	348	95.1	386	98.7	734	97.0	
	Total	366	100.0	391	100.0	757	100.0	
His/her boy/girlfriend/partner ever touch her/his penis/vagina with her /his hand	Yes	26	6.8	10	2.6	36	4.7	0.006
	No	354	93.2	374	97.4	728	95.3	
	Total	380	100.0	384	100.0	764	100.0	
His/her boy/girlfriend/partner ever stroke his/her penis/vagina so that you climaxed	Yes	16	4.2	4	1.0	20	2.6	0.006
	No	369	95.8	390	99.0	759	97.4	
	Total	385	100.0	394	100.0	779	100.0	
Prevalence of nonpenetrative sexual experience	Yes	262	81.9	270	79.9	532	80.9	0.516
	No	58	18.1	68	20.1	126	19.1	
	Total	320	100.0	338	100.0	658	100.0	
Penetrative experience								
Ever had oral sex	Yes	18	4.6	3	0.7	21	2.6	0.001
	No	373	95.4	402	99.3	775	97.4	
	Total	391	100.0	405	100.0	796	100.0	
Ever had anal intercourse	Yes	21	5.4	1	0.2	22	2.8	<0.001
	No	369	94.6	402	99.8	771	97.2	
	Total	390	100.0	403	100.0	793	100.0	

Ever had vaginal intercourse with anyone	Yes	26	6.9	10	2.5	36	4.7	0.004
	No	353	93.1	384	97.5	737	95.3	
	Total	379	100.0	394	100.0	773	100.0	
Prevalence of penetrative sexual experience	Yes	41	11.1	12	3.1	53	7.0	<0.001
	No	330	88.9	376	96.9	706	93.0	
	Total	371	100.0	388	100.0	759	100.0	

Penetrative experience

The results highlighted that some participants had experienced some form of penetrative sex, including vaginal, anal, or oral sex. The findings indicated that 36 of 773 participants (4.6%) have had vaginal intercourse, 22 of the 793 (2.7%) have had anal intercourse, and 21 of the 796 participants (2.6%) reported ever having had oral sex. Overall, 53 of 759 (7.0%) reported any of these activities involving penetrative sexual experience (oral, vaginal, anal penetration) (Table 3). The bivariate analysis of penetrative sexual experience indicated that the factors associated with penetrative sexual experience included male sex (COR= 3.9, 95% CI= 2.0-7.5), ever attending parties where young people danced (COR= 3.2, 95% CI= 1.6-6.4), ever drinking alcohol (COR= 7.1, 95% CI= 3.8-13.2), ever smoking cigarettes (COR= 16.7, 95% CI= 6.3-44.3), ever using cannabis (COR=57.9, 95% CI= 18.0-186.3), and ever watching pornographic films (COR= 3.5, 95% CI= 1.9-6.4). In addition, participants whose both parents were not alive (COR= 19.2, 95% CI= 4.9-74.4), who perceived that communication with their mothers was difficult (COR= 3.4, 95% CI= 1.4-8.3), and whose communication with brothers or sisters was perceived as difficult (COR= 2.6, 95% CI= 1.2-6.1) had higher odds of penetrative sexual experience. Additional factors associated with penetrative sexual experience in the bivariate analysis included ever being forced to have sexual intercourse (COR= 9.8, 95% CI= 5.1-19.0) and ever being touched on private parts (COR= 4.8, 95% CI= 2.4-9.5). Discussing sex matters often with fathers was associated with higher odds of penetrative sexual experience (COR= 3.5, 95% CI=1.5-8.2). The multivariate logistic regression analysis indicated that male participants (AOR= 4.6, 95% CI= 1.8-12.4) ever drinking alcohol (AOR= 3.5, 95% CI= 1.4-8.8), ever watching pornography (3-5 times, AOR= 7.5, 95% CI= 1.6-34.9; $\geq$ five times, (AOR= 5.1, 95% CI= 1.7-15.0); being full orphan (AOR= 17.8, 95% CI= 1.9-170.2), and ever being forced to have sexual intercourse (AOR= 8.2, 95% CI= 2.7-25.4). In addition, often discussing sex matters with one's father (AOR= 6.5, 95% CI= 1.8-23.2) was associated with higher odds of penetrative sexual experience (Table 4).

Table 4: Results from the bivariate and multivariate logistic regression analyses between participants' sexual experience and social-ecological covariates

		Non-penetrative sexual experience		Penetrative sexual experience	
Variable	Categories	COR (95%CI), p-value	AOR (95%CI), p-value	COR (95%CI), p-value	AOR (95%CI), p-value
Individual characteristics and behaviours					
Sex	Female	1		1	1
	Male	1.1(0.7-1.7), 0.516		3.9 (2.0-7.5), <0.001	4.6(1.8-12.4), 0.002
Age in years	12	1		1	

		Non-penetrative sexual experience		Penetrative sexual experience	
Variable	Categories	COR (95%CI), p-value	AOR (95%CI), p-value	COR (95%CI), p-value	AOR (95%CI), p-value
	13	0.8(0.5-1.6), 0.701		0.5 (0.2- 1.3), 0.164	
	14	1.1(0.6-1.9), 0.864		0.8 (0.4- 1.9), 0.779	
School grade	Senior 1	1		1	
	Senior 2	0.7(0.5-1.1)		0.6 (0.3- 1.2), 0.210	
Religion	Catholic	1		1	
	Protestant	1.0(0.7-1.6), 0.939		0.5 (.2- 1.0), 0.053	
	Others	0.8(0.4-1.4), 0.369		0.7 (0.3-1.6), 0.499	
Behaviours					
Have you ever used a mobile phone?	Yes	1	1	1	
	No	0.6(0.4-0.9), 0.023	1.0 (0.6-1.8), 0.999	1.0 (0.5-1.8), 0.970	
Ever attend parties where young people dance	No	1	1	1	1
	Yes	9.9(2.4-41.1), 0.002	6.8 (1.6-29.2), 0.010	3.2 (1.6-6.4), 0.001	0.9(0.3-3.0), 0.982
Ever drink alcohol	No	1	1	1	1
	Yes	4.1(1.6-10.3), 0.003	1.9 (0.6-5.8), 0.217	7.1 (3.8-13.2), <0.001	3.5(1.4-8.8), 0.008
Ever smoked cigarette	No	1		1	1
	Yes	omitted		16.7 (6.3-44.3), <0.001	2.4(0.3-19.5), 0.415
Ever use of cannabis.	No	1		1	1
	Yes	3.2(0.4-25.2), 0.253		57.9(18.0-186.3), <0.001	5.1(0.7-38.8), 0.111
Ever used internet	No	1	1	1	
	Yes	1.7(1.1-2.5), 0.010	1.9 (1.1-3.3), 0.023	1.1 (0.6-1.9), 0.722	
Ever searched SRH information on the internet	No	1		1	
	Yes	1.4(0.8-2.2), 0.154		0.7 (0.3-1.4), 0.292	
Frequency of ever watching pornographic films	Never	1		1	1
	1-2 times	1.6(0.9-2.8), 0.062		2.4 (1.2-4.9), 0.012	1.9(0.7-5.4), 0.193
	3-4 times	1		10.1 (3.5-29.0), <0.001	7.5(1.6-34.9), 0.010
	≥ 5 times	1		4.7 (2.0-10.9), <0.001	5.1(1.7-15.0), 0.003
Family & relationships					
Parents are alive	None is alive	1		19.2 (4.9-74.4), <0.001	17.8(1.9-170.2),0.013
	One parent is alive	0.8(0.4-1.6), 0.667		1.7 (0.7-4.11), 0.185	2.6(0.8-8.5),0.118
	Both parents are alive	1		1	
Living with parents	None parent	0.5(0.2-1.2), 0.115		2.6 (0.8-8.0), 0.090	
	One parent	1.1(0.6-1.7), 0.835		1.2 (0.6-2.6), 0.497	
	Both parents	1		1	
Household Economic status	Poor (Category 1/2)	1		1	
	Well-off (Category 3/4)	1.4(0.8-2.1), 0.163		0.7 (0.4-1.4), 0.370	
	Do not know	1.3(0.7-2.4), 0.370		2.3 (1.1-4.6), 0.019	
Father's level of education	Primary & lower	1.9(1.1-3.5), 0.025	2.6 (1.4-5.0), 0.003	2.0 (0.6-6.2), 0.230	
	TVET	0.9(0.4-1.9), 0.854	1.4 (0.6-3.1), 0.389	0.8 (0.2-4.7), 0.853	
	Secondary	1.4(0.7-2.6), 0.255	1.9 (1.0-3.8), 0.039	2.6 (0.8-8.3), 0.090	
	Higher	1	1	1	
Mother's level of education	Primary or lower	0.9(0.5-1.6), 0.727		0.8 (0.3-1.9) 0.650	
	TVET	0.9(0.4-2.4), 0.930		1.8 (0.6-5.1), 0.220	

		Non-penetrative sexual experience		Penetrative sexual experience	
Variable	Categories	COR (95%CI), p-value	AOR (95%CI), p-value	COR (95%CI), p-value	AOR (95%CI), p-value
	Secondary	0.8(0.4-1.6), 0.578		0.4 (0.1-1.3), 0.136	
	Higher	1		1	
Ever discussed sex matters with the father	Often	0.6(0.3-1.2), 0.121		3.5(1.5-8.2), 0.004	6.5(1.8-23.2), 0.004
	Occasionally	0.8(0.5-1.3), 0.385		1.9(1.0-3.6), 0.046	1.7(0.7-4.3), 0.202
	Never	1		1	1
Ever discussed sex matters with the mother	Often	1		1	
	Occasionally	1.2(0.7-1.8), 0.528		0.6 (0.3-1.4), 0.221	
	Never	1.2(0.7-1.9), 0.456		1.6 (0.8-3.2), 0.188	
Ever discussed sex matters with brothers or sisters	Often	1		1	
	Occasionally	0.7(0.3-1.5), 0.417		1.2 (0.4-3.3), 0.775	
	Never	0.6(0.3-1.3), 0.201		0.9 (0.4-2.5), 0.931	
Perceived ease in communicating with the father	(Very) easy	1		1	
	Average	0.8(0.5-1.5), 0.640		0.9 (0.4-2.5), 0.953	
	(very) difficult	1.8(0.9-3.4), 0.088		1.4 (0.6-3.5), 0.446	
	Do not see him	1.0(0.5-2.1), 0.088		2.1 (0.8-5.4), 0.141	
Perceived ease in communicating with the mother	(Very) easy	1		1	1
	Average	0.8(0.5-1.6), 0.640		1.7 (0.7-4.4), 0.236	1.5(0.4-5.9), 0.535
	(very) difficult	4.0 (0.9-16.9), 0.059		3.4 (1.4-8.3), 0.006	2.7(0.8-8.8), 0.101
	Do not see her	0.7(0.2-2.6), 0.610		1	1.1(0.1-14.8), 0.955
Perceived ease in communicating with brothers or sisters	(Very) easy	1		1	1
	Average	0.5(0.3-1.0), 0.051		1.4 (0.5-3.6), 0.529	1.5 (0.4-5.5), 0.535
	(very) difficult	1.0(0.5-2.2), 0.942		2.6 (1.2-6.1), 0.020	2.7 (0.8-8.7), 0.101
	Do not see them	0.5(0.2-1.5), 0.242		3.2 (0.8-11.4), 0.077	1.1(0.07-14.8), 0.955
Community level					
Type of school	Public	1		1	
	Private	0.9(0.6-1.3), 0.639		1.7 (.9- 3.0), 0.060	
Access to pregnancy or puberty information	No	1		1	
	Yes	1.2(0.6-2.5), 0.542		2.2 (0.5-9.3), 0.284	
Ever been forced to have sexual intercourse	No	1		1	
	Yes	2.5(0.9-7.3), 0.079		9.8 (5.1-19.0), <0.001	8.2(2.7-25.4), <0.001
Ever been touched on private parts without their willingness	No	1		1	
	Yes	1.8(0.7-4.4), 0.183		4.8 (2.4-9.5), <0.001	0.8(0.2-2.9), 0.736

*COR: crude odds ratio; AOR: adjusted odds ratio

Discussion

This study aimed to assess the sexual experiences and the social-ecological factors associated with such experiences among early adolescents from selected districts in Rwanda. The findings indicated that more than four out of five early adolescents (81%) had started engaging in at least one nonpenetrative sexual activity, including hugging, holding hands, caressing, and touching or being touched on their genitals. Concerning being touched by genitals among girls, the prevalence ranged from 1 to 2.6% in the present study, which corroborates the findings of Maina et al., who

reported a prevalence of 1% among very young adolescent girls in Nairobi, Kenya [226]. However, the prevalence of caressing in this study was 7.8% among girls, which Maina et al. [226] did not include. Furthermore, this study found a greater prevalence of hugging (57.1%) and holding hands (72.3%) than was found by Maina et al., which were respectively 6% and 9% among very young adolescent girls in Nairobi, Kenya [226]. In addition, the prevalence of kissing was greater among girls (10.6%) in the present study, while Maina et al. reported 2% of young adolescents in Nairobi, Kenya [226]. In a different study in Kenya, Kågesten et al. indicated that most early adolescents have not engaged in romantic and sexual activities [24]. Findings from early adolescents (11-14 years) in Korogocho slums, Kenya, indicated that the proportions of hugging (8.6%), kissing (2.7%), holding hands (10.5%), and fondling (2.5%) were lower than those in this study, with boys having higher proportions than girls [24]. In general, these findings suggest that early adolescents experience some nonpenetrative sexual activities, with differences among boys and girls.

Concerning the factors associated with nonpenetrative sexual experience, logistic regression analysis revealed that attending parties involving other young people, using the internet, and having a primary and secondary education level of the participants' fathers were found to be independent predictors of nonpenetrative sexual experiences. The literature highlights the role of the internet in the provision of SRHR information [34, 76, 78, 122, 129] and in influencing the sexual behaviours of adolescents. For example, pornography and sexually explicit photographs teach young adolescents about sex and what it looks like, which may have both positive and negative consequences for the sexual behaviours of adolescents [122, 365]. Parents are the main sources of SRHR information for adolescents [121, 123]. They constitute important models in their children's lives and transmit values, traditions, and lifestyles that inform healthy decision-making about sexual health [99]. Furthermore, improved communication between parents and adolescents contributes to healthy sexual behaviours [321, 373, 374], and parents' education may be beneficial in promoting adolescent reproductive health [375]. However, discussing sex matters often with one's father was a risk factor for penetrative sexual experience in this study from penetrative sexual experience. This finding contrasts with the knowledge that parent-child communication about sexual issues enhances healthy sexual behaviours among adolescents [317, 321, 371, 372].

Nearly 7% of all early adolescents, including 11% of boys and 3% of girls, reported penetrative sexual experiences, including oral sex and anal and/or vaginal intercourse. Studies of early adolescents (12-15 years) have shown similar estimates (6.9%) of lifetime sexual intercourse in Low and Middle-income Countries (LMICs) [359] and among American Indian and Alaskan Native Youth aged 12-14 years (6.5%) [28]. Similarly, Roman et al. reported that sexual initiation among Brazilian early adolescents (12-14 years) was lower in girls (7%) than in boys (18%) [227], which was similar to the trend observed in this study and others in LMICs and Korea [359, 360]. Nevertheless, penetrative sexual experience was slightly lower in Indonesia (5.3%, including 6.9% of boys and 3.8% of girls) than in the present study, as indicated in the 2015 Global School-based Health Survey by Rizkianti et al. [229]. In addition, Maina et al. reported that the proportion of girls (10-14 years) with sexual intercourse was 2% in Nairobi, Kenya [226], compared to 3% in

this study. The prevalence of sexual intercourse before age 13 in the United States of America was found to be slightly greater than that in the present study (7.6%) [228]. In contrast, Magnusson reported that 17% of adolescents were younger than 15 years at first sexual intercourse [361], and Hellerstedt et al. reported that 42% of American Indian Youths aged 13-15 years had ever had sexual intercourse [362]. In addition, Kushal et al. reported that early sexual initiation was 14.2% among early adolescents (12-15 years) in 50 countries where the Global School-based Health Survey was conducted between 2009 and 2015. The prevalence of penetrative sexual experiences among early adolescents is in line with the findings of other studies in LMICs. Nonetheless, this prevalence differs in the United States of America, where a higher prevalence has been reported, as well as in Indonesia and Kenya, where lower penetrative sexual experiences have been indicated.

Concerning the factors associated with penetrative sexual experience, this study showed that ever being forced to have sexual intercourse was strongly associated with penetrative sex. On this point, the literature indicates that early sexual experience among adolescents occurs in the context of sexual coercion and violence [26, 105, 363]. This study also revealed that a high frequency of watching pornographic films was associated with penetrative sexual experience, which is consistent with previous studies indicating that exposure to pornography may have harmful effects on sexual maturation and behaviours in adolescents [14, 120, 364] and that first sex was associated with exposure to pornography [366-368]. In addition, another study involving adolescents aged 10-19 years in rural eastern Uganda found that watching sexually explicit films was associated with ever having sexual intercourse [108]. Furthermore, pornography use by adolescents results in unprotected penetrative and oral sex, a high frequency of casual sex, and an earlier onset of sexual activity [369]. The current study also highlighted that male participants were more likely to experience penetrative sexual experiences, which is consistent with findings from Reis et al. [134], Kushal et al. [232], and Roman et al. [227]. This may be due to masculinity norms encouraging boys to early sexual initiation [134].

Smoking and ever-drinking alcohol in the present study were associated with penetrative sexual experiences. This finding is consistent with other research indicating that smoking cigarettes and using alcohol and other drugs were associated with sexual intercourse among in-school adolescents from five sub-Saharan African countries [230] and among older adolescents and youths [376]. Furthermore, a study of the factors associated with sexual initiation among participants, including early adolescents in Brazil, revealed that the use of alcoholic beverages was associated with early sexual initiation [227, 370]. Similarly, a higher prevalence of early sexual initiation (14.2%) was reported in another study involving early adolescents aged 12-15 years in 50 countries [232].

Study limitations and strengths

This study has several limitations. One of them is the use of cross-sectional data to determine causality. Another limitation of this study is the generalizability of the findings. However, the selected number of participants was representative of the study population, and their data provided

insights into the SRHR knowledge and sexual experience of early adolescents in Rwanda. In addition, the findings were obtained based on participants' self-reports about sexuality, which might have been affected by social desirability, especially when reporting (underreporting or overreporting) sexual experiences [77, 192]. We minimised this through privacy, anonymity and voluntary participation. Finally, there is the possibility of recall bias because participants had to remember and report their sexual experiences, which suggests that they might have forgotten important information related to their sexual experiences. Despite these limitations, this study contributes to the extant body of literature on early adolescents by providing an overview of the prevalence and factors associated with sexual experience in sub-Saharan Africa, specifically in Rwanda. This study enriches the body of literature and provides baseline information for SRHR interventions to improve the sexual and reproductive health and rights of early adolescents in Rwanda and elsewhere.

Conclusion

This study showed that the prevalence of nonpenetrative sexual experience among early adolescents was 81%, and 7% of the participants reported penetrative sexual experience. Penetrative sexual experience at the individual level was associated with being male sex, and behaviours such as drinking alcohol and watching films showing sexual content. Being a double orphan and often discussing sex matters with one's father were independently associated with increased odds of penetrative sexual experience (family and relationships level). Being forced to have sexual intercourse was also associated with penetrative sexual experience (community level). The study showed that behaviours such as attending parties, using the internet, and reporting a low father's education level (family level) were associated with nonpenetrative sexual experiences. These findings suggest the need for public health interventions, including educating early adolescents, especially boys, about SRHR, reducing alcohol consumption, addressing child abuse, monitoring access to SRHR information sources, especially the internet, scaling up parental education levels, especially about SRHR, and discussing SRHR with family members. These findings have implications for achieving sustainable development goals (SDGs) related to early adolescent sexual and reproductive health and rights in Rwanda, regionally and globally.

Acknowledgements

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APPENDIX 32: ABSTRACT FOR THE 8TH JOINT ADVANCED SEMINARS CONFERENCE 23-24 SEPTEMBER 2021

BOOK OF ABSTRACTS



8th Annual Joint Advanced Seminars
Conference 23rd & 24th September
2021

Subtheme1: Research on Sexual and Reproductive Health

Paper 1: Condom knowledge and attitudes of very young adolescents in Rwanda: a cross-sectional study.

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Abstract

Introduction

Used with adequate knowledge, condoms provide protection against pregnancy and sexually transmitted diseases. However, many adolescents including very young ones continue to harbour misconceptions about condoms. Condom knowledge enables very young adolescents to engage in safer sexual behaviours upon sexual debut as they emerge as sexual beings. Evidence of condom knowledge of very young adolescents is limited. This study assessed the knowledge, attitudes towards condoms among of schooling very young adolescents in Rwanda.

Methods

A descriptive cross-sectional study was undertaken. A multistage sampling strategy was applied. The study tool adapted from a standard questionnaire developed for the World Health Organization. We measured condom knowledge using participants' answers (agree, do not know, and disagree) on six questions, e.g. condoms are an effective method for preventing pregnancy.

We measured condom attitude using eight questions, e. g: condoms reduce sexual pleasure, with answers ranging from agree, do not know, and disagree. We computed knowledge and attitudes scores. Data were analysed as recommended by the author of the tool and other scholars. Participants' characteristics were also collected. Data were analysed in Stata 14. Frequency tables, and mean (95% CI) were used to summarize data.

Results

Overall, 811 very young adolescents of whom 50.9% were females participated in the study. Their mean age was 13.41[95% CI: 13.36-13.46]. Most participants (46.08%) were Protestants, followed by the Roman Catholic Church (36.11%). The mean score for condom knowledge was 3.71 out of 6 (95%CI: 3.61-3.81). The overall mean score for condom attitude was 3.41 out of 8 (95% CI: 3.27-3.55). The overall mean score for condom knowledge and attitudes was 7.11 out of 14 (95% CI: 6.90-7.32).

Conclusion

Very young adolescents hold low knowledge and attitudes towards condoms. Educational interventions need to foster their knowledge and attitudes towards condoms.

APPENDIX 33: APPROVAL FOR ORAL PRESENTATION AT WITS SPH RESEARCH DAY AND CARTA CONFERENCE



Faculty of Health Sciences, 27 St Andrew's Road, Parktown 2193; Johannesburg; South Africa T +27 (0) 11 717 2543 www.wits.ac.za/publichealth

18 August 2023

Dear Mr Valens Mbarushimana

Email: vmbarushimana@cartafrica.org

The Wits SPH Research Day and CARTA Conference Committee is delighted to inform you that your abstract has been accepted as an oral for the Wits SPH Research Day and CARTA Conference.

Your submission was reviewed by our panel of reviewers, who were impressed with the quality and relevance of your research. Your work aligns well with the themes and objectives of our conference, and we believe it will make a valuable contribution to the academic community in Public Health.

As an accepted presenter, you are expected to give an oral presentation during the conference. Please note that the allocated time for each presentation will be communicated to you in the coming weeks.

Additionally, we will soon be sending you further details regarding the schedule, session format, and any technical requirements for your oral presentation.

Title of abstract: Influences of sexual and reproductive health and rights knowledge on early adolescents' sexual health outcomes in Rwanda: a mixed-method study.

Submission Category: Oral presentation

Sub-theme: Social and commercial determinants of health

Date: 14 /15 September 2023

Please confirm your acceptance of this invitation to present by no later than 25 August 2023. Below are the reviewers' comments for your consideration. You may want to revise your abstract before you resubmit on accept or reject link above.

[CLICK HERE to Accept or Reject offer to present at the SPH Research Day](#)

Yours sincerely,

Dr Daphney Nozizwe Conco

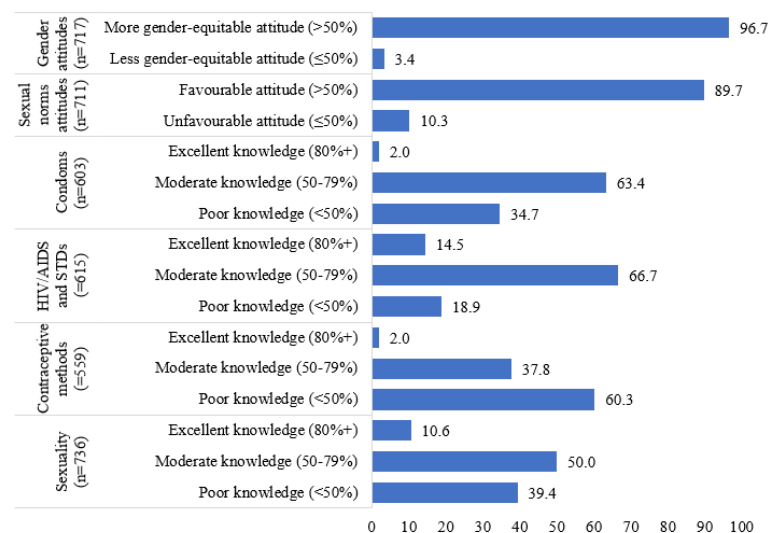
Wits SPH Research Day and CARTA Conference Committee: Chair

APPENDIX 34: JOINT DISPLAY COMPARING FINDINGS FROM STUDY OBJECTIVES

Research objective	Summary of findings	Fit of data integration and interpretation of findings
1. To assess the extent to which gender and sexuality policies address the specific information needs of early adolescents in Rwanda.	Context: Local and international commitments influence the SRHR context; Inadequate SRHR knowledge and challenges in accessing SRHR information; SRHR services are limited to those who are ≥18 years old; Gender inequality between men and women; Existence of sexual and gender-based violence; Existence of the CSE curriculum. Content: Various ways (sources) of accessing SRHR information: Focus on the general population without mentioning early adolescents; Mentions broadly areas of SRHR information; Recognises the importance of supporting <SRHR information providers; Recognizes equal SRH rights for all people but the age of majority remains 18+. Process: Extensive consultations with local and international partners; Desk reviews, research, field visits, roundtables; Coordination by key institutions, task sharing, teamwork, plans, multisectoral collaboration, reviews, meetings, monitoring; Actors: Other than early adolescents.	No clear indication about addressing the specific SRHR information needs of early adolescents. Their needs are tackled generally along with those of older adolescents and adult people. Mentions the existence of a CSE curriculum. Findings in objective 1 allow us to explore the international, regional, and local context informing adolescent sexual and reproductive health and rights, specifically for early adolescents. While policy grants equal SRHR rights to all people, the provision of SRHR services to those aged 18+: this is discordance. And does not allow providing non-judgmental SRHR to those <18 years old. Universality of delivered SRHR information and the process of coordinating various actors in delivering such information are not clear in the policy.
2. Describe the social context, including personal, relationships and community factors, influencing early adolescents' gender and sexuality knowledge, beliefs and behaviours in Rwanda.	SRHR stakeholders recognized the importance of sexuality education for this age group; Multiple-level factors influence access to SRHR information among early adolescents.	Findings indicate complexities in enabling access to SRHR information for early adolescents in Rwanda. Findings from objective 2 expand on those from objective 1 in understanding the SRHR environment of adolescent sexual health in Rwanda. It provides a further understanding of the Rwandan context of SRHR for early adolescents. It is necessary to customise SRHR information for boys and girls due to some differences in SRHR needs.
3. To analyse Sexual and Reproductive Health and Rights (SRHR) messages conveyed to early adolescents by different sources of information in Rwanda.	Major focus on four topics: sexual and reproductive health; human body and development; values, rights, and sexuality; and understanding gender; Little focus on four topics: violence and staying safe, skills for health and wellbeing, sexuality and sexual behaviour, and relationships.	Qualitative data from key informants expanded on the focus of CSE for early adolescents and provided further topics to be considered for CSE. Confirmation of findings from the content of the SRHR policy (objective 1).

4. To describe early adolescents' knowledge, beliefs and behaviours related to gender and sexuality in the selected districts of Rwanda.

- Low SRHR knowledge:



- Some social-ecological factors associated with SRHR knowledge:
- Access to SRHR information was associated with higher scores on sexuality and condom knowledge.
- Higher condom knowledge for boys, those who are well-off, in senior 1, those who often discuss sex matters with their mothers, brothers or sisters; attending parties.
- Higher boys' scores on sexual norms.
- Higher HIV/AIDS and STDs knowledge for girls
- Higher sexuality knowledge in rural than in urban setting, those whose communication with father is easy,
- Higher contraceptive knowledge for those whose communication with the mother is perceived as average; those who attend parties; drinking alcohol;
- Searching SRH information from internet was associated with higher scores on sexuality, contraception and condom knowledge.
- Caressing, kissing, and watching pornography were associated with higher scores on condom knowledge and sexual norms attitudes.
- Being well off was associated with higher scores on sexual norms.
- Communication with brothers or sisters was associated with higher scores on gender attitudes.

Findings in objective 3 indicated that early adolescents learn, to some extent, about SRHR. Findings in objective 4 indicated how much knowledge early adolescents have. Low knowledge **confirms** findings from SRHR stakeholders (objective 2).

High HIV/AIDS knowledge is commonly reported in other studies.

There were gender differences on matters related to condom and HIV/AIDS and STDs knowledge, and sexual norms, which suggest the need to customise interventions targeting SRHR knowledge on these two topics.

Access to information about pregnancy and reproduction yields higher scores on sexuality and condom knowledge but not for other domains of sexuality assessed.

Communication with parents and other family members contributes to higher knowledge and shaping gender attitudes and this suggests that, despite challenges raised about poor parent-child communication in phase one, intervention targeting enhancement of this type of communication might yield positive results on early adolescents knowledge.

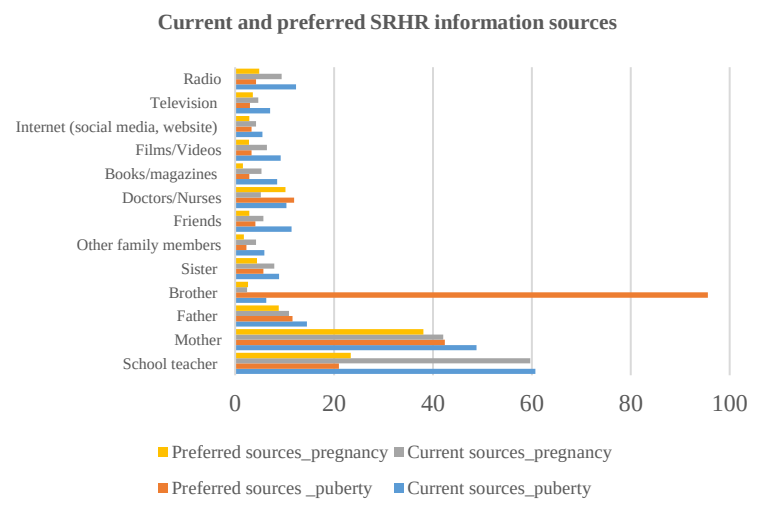
The promotion of safe sexual behaviours and sexual norms attitudes should also target early adolescents who do not have careening, kissing, and pornography experiences.

Interventions on sexual norms attitudes should target early adolescents with lower scores, and these were those who were socio-economically poor.

Attending parties is beneficial to early adolescents knowledge, sexual norms and gender attitudes but supervision efforts should be undertaken to mitigate to prevent related unsafe behaviours.

5. To determine the relationship between the early adolescents' sexuality and gender knowledge, beliefs and behaviours and their sexual experiences.	81% report non-penetrative sexual experience; 7% reported penetrative sexual experiences; Gender difference found: most boys reported sexual experiences compared to girls. Social-ecological factors associated with non-penetrative sexual experiences: being male, attendance of parties, use of the internet, lower education level; Social-ecological factors associated with penetrative sexual experience: Higher scores on condom knowledge, attitudes towards sexual norms and gender associated with nonpenetrative sexual experience. Higher scores on condom knowledge and attitudes towards sexual norms associated with penetrative sexual experiences; Higher scores on HIV/AIDS knowledge were associated with a lack of penetrative sexual experience.	Only high knowledge of knowledge about HIV/AIDS was associated with less penetrative sexual experience; Higher scores on condom knowledge, attitudes towards gender, and attitudes towards sexual norms were associated with non-penetrative sexual experience. Higher scores on condom knowledge, and attitudes towards sexual norms were associated with penetrative sexual experience. Future studies should focus on investigating reasons for engaging in sexual experiences when early adolescents have higher SRHR knowledge.
6. To determine the relationship between early adolescents' gender and sexuality knowledge, beliefs and behaviours and specific health outcomes (STIs, pregnancy) in the selected districts of Rwanda.	31% engaged in friendship relationships; Condoms were the mostly used contraceptive method; 5% attracted to people of the same sex; 8% reported ever being forced to have sexual intercourse; 8.4% reported ever being touched on private parts unwillingly; Average lifetime sex partners: three; Existence of commercial sex: 6% 25% of those who have sex do not use contraceptive methods Only 39% regretted having had sexual intercourse; The first sex partner was non-intimate; Boys engage in sexual intercourse later than girls: 12.5±0.9 for boys and 11.5±0.7 for girls; 70.5% will not have sexual intercourse until marriage; Most feel no pressure to have sex: 92.9%; friends (57.5%) are the main source of pressure to have sex. Health outcomes: 1.3% of boys have ever been involved in pregnancy; No girls reported ever being pregnant; 31% have ever undergone an HIV test; 3% ever had a sexually transmitted disease. High knowledge and less traditional attitudes were associated with undergoing an HIV test;	Findings on being forced to have sexual intercourse, being touched on private parts, or having a first-sex partner who is non-intimate confirm the presence of sexual and gender-based violence as indicated in the policy review (objective 1) Low use of contraceptive methods indicates high-risk sexual behaviours. Qualitative findings (FGDs) explain reasons for low SRHR knowledge (in objective 4) and reasons for inadequate behaviours reported in objective 6: unreliable information resulting in misinformation (expansion). “We need reliable information to protect ourselves.” FGDs findings suggest how early adolescents use their SRHR knowledge to shape behaviours (expansion) “I cannot accept early sexual activity because I am very aware of its consequences.” “Bad friends lead us into bad behaviours, and we should avoid bad peer influences related to sexual intercourse and drug use.” Findings from FGDs also expand on the benefits of CSE expressed by stakeholders in objective 2. “It helped me to be aware of HIV/AIDS and other sexually transmitted diseases and various ways of preventing them.” Findings from FGDs expand those from SRHR stakeholders and those on SRHR knowledge, behaviours and sexual experiences of early adolescents.

7. To determine the relationship between exposure to different sources of information and early adolescents' gender and sexuality knowledge, beliefs and behaviours in selected districts of Rwanda.



Some sources were linked to higher SRHR knowledge and less traditional attitudes: one's mother and sister, healthcare providers (nurses /doctors), radio, television, books and magazines.
Early adolescents have justifications for preferred sources.

Multiple sources deliver SRHR information, which **confirms** findings from policy reviews and key stakeholders

Schoolteachers are the main sources of information on pregnancy, and this **confirms** the findings from stakeholders and FGDs that pregnancy is a major concern during adolescence.

One's mother is consistently an important source of information on puberty and pregnancy, which **contradicts** the focus of healthcare providers and healthcare institutions believed to deliver much of SRHR information to this age group.

Healthcare providers (nurses and doctors) are not among the most preferred sources.

Despite cultural challenges for parents to deliver SRHR information (policy review finding), parents are actively involved in delivering SRHR information.

Justifications **expand** findings on current and preferred sources of information and provide directions for future policy-making processes.

APPENDIX 35 : PROOF OF EDITING



Centurion

Tshwane

precision4edits@gmail.com

CIPC: (2024/014377/07)

MANUSCRIPT REVIEW PROOF

20 March 2024

To Whom It May Concern

This letter is to confirm that the manuscript titled, **EARLY ADOLESCENTS' KNOWLEDGE, BELIEFS AND BEHAVIOURS REGARDING GENDER AND SEXUALITY IN RWANDA: IMPLICATIONS FOR THEIR SEXUAL EXPERIENCES AND HEALTH OUTCOMES** by **Valens Mbarushimana**, was edited by a professional language editor. As the language editor, the author was supplied with two versions: the first contained comments and edits [track changes], and the second was the accepted version with no track changes. As the language editor, I cannot be held responsible for the author or authors' decisions concerning the edits and comments supplied.

Sincerely,



Language Editor

PRECISION EDUCATION CONSULTANCY

APPENDIX 36: PLAGIARISM DECLARATION AND TURNITIN COVER PAGE



PLAGIARISM DECLARATION TO BE SIGNED BY ALL HIGHER DEGREE STUDENTS

I Valens Mbarushimana (Student number: 1584607) am a student registered for the degree of Doctor of Philosophy, Public Health in the academic year 2017.

I hereby declare the following:

- I am aware that plagiarism (the use of someone else's work without their permission and/or without acknowledging the original source) is wrong.
- I confirm that the work submitted for assessment for the above degree is my own unaided work except where I have explicitly indicated otherwise.
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- I understand that the University of the Witwatersrand may take disciplinary action against me if there is a belief that this is not my own unaided work or that I have failed to acknowledge the source of the ideas or words in my writing.
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