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Knowledge, Attitudes, and Practices towards Sexual and Reproductive Health among Secondary School Students in Kicukiro District, Rwanda

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Abstract:

Background: *The study aimed to assess the knowledge, attitudes, and practices (KAP) regarding sexual and reproductive health (SRH) among secondary school students in Kicukiro District, Rwanda. Specifically, it sought to determine the level of SRH knowledge, identify attitudes towards SRH, and evaluate SRH-related practices among these students. Using a cross-sectional survey design, the study targeted students from semi-rural and semi-urban schools in the district. Stratified random sampling was used to select 423 respondents from a population of 2,170 students.*

Methods and Materials*: Data were collected through questionnaires with both open and closed-ended questions, supplemented by documentary review. Descriptive statistics, including frequencies and percentages, were used for data analysis. The findings indicated high levels of SRH knowledge among students, with strong awareness of puberty, menstruation, contraceptive methods, and HIV transmission routes. However, there were still misconceptions about condom effectiveness and HIV transmission, highlighting the need for targeted education. Attitudes towards SRH varied, with positive acceptance of discussing condom use and contraceptive methods but differing views on premarital relationships and abortion. Proactive practices such as contraceptive use and seeking STI check-ups were noted, but areas needing improvement included delaying sexual debut and consistent contraceptive use.*

Results: *The study found a strong positive correlation between SRH knowledge and practices (Pearson correlation coefficient = 0.864, $p < 0.01$), suggesting that students with greater SRH knowledge tend to engage in more positive SRH practices. Additionally, a moderate to strong positive correlation was observed between SRH attitudes and practices (Pearson correlation coefficient = 0.581, $p < 0.01$), indicating that students with more positive SRH attitudes are more likely to engage in favorable practices. Both knowledge and attitudes significantly predicted SRH practices among the students. The regression model showed a moderate correlation ($R = 0.652$, R Square $= 0.426$) between attitudes, knowledge, and practices, explaining about 42.6% of the variance in SRH practices. The regression coefficients for knowledge ($B = 0.315$, $p < 0.001$) and attitudes ($B = 0.374$, $p < 0.001$) were both statistically significant predictors of SRH practices. Overall, the study concluded that while students generally had high SRH awareness, their attitudes and practices varied. The moderate to strong positive correlations between SRH knowledge, attitudes, and practices underscore the importance of comprehensive SRH education.*

Conclusion: *The study recommended implementing extensive SRH education programs, addressing misconceptions, promoting positive attitudes, ensuring access to youth-friendly SRH services, and involving parents and the community. It also suggested further research to enhance understanding and promote positive SRH outcomes among secondary school students in Kicukiro District and beyond.*

Key Words*: KAP, Sexual and Reproductive Health, Secondary School Students, Kicukiro District, Rwanda.*

i. Introduction

Adolescence is a time of transition from childhood to adulthood that is characterized by substantial obstacles and changes in the physical, emotional, and psychological domains. This stage of development can be difficult since it can be painful, traumatic, embarrassing, and unsatisfying for cognitive, physical, and social growth. Adolescence brings about social, physical, and cognitive changes, as well as sexual and reproductive health (SRH) changes that impact their future well-being. Many young adolescents can be reached through sexuality education programs in schools.

Introducing sexuality education at this critical stage, when attitudes and behaviors are forming, offers short-term benefits like reducing risky sexual behavior and preventing teenage pregnancy, and long-term benefits that enhance their overall well-being throughout life (Woog and Kågesten, 2017). Adolescence is a period of profound growth and development in five domains: the physical (growth and hormonal changes), the cognitive (alterations in brain function), the emotional (managing stress and emotions), the social (changing romantic, familial, and social relationships), and the moral/values (perceptions of one's place in the world).

This period introduces new vulnerabilities, including potential human rights abuses related to sexuality, marriage, and childbearing.

Many adolescents start new romantic and sexual relationships, facing risks like unplanned pregnancies and sexually transmitted infections. As they transition into adulthood, they encounter various health and social challenges. The experiences of older adolescents (18-19 years old) vary greatly depending on factors like gender, race, ethnicity, and socioeconomic status, all of which affect how they respond to physical and emotional development and take on adult roles. During late adolescence, individuals often form a stronger sense of identity, including their personal views on gender and sexuality, sexual behavior, and romantic relationships. One of the most important steps toward adulthood and possible parenting is starting a sexual life. Adolescents who lack the knowledge and skills necessary for safe sexual encounters are more vulnerable to unwanted pregnancies, unsafe abortions, and STDs including HIV/AIDS (UNFPA, 2019).

In the realm of sexuality, optimal sexual health is defined by the attainment of physical, emotional, mental, and social well-being (Connolly & McIsaac, 2019). This encompasses the absence of illness, dysfunction, or impairment, as well as the promotion of pleasurable and safe sexual experiences that are free from coercion, prejudice, or violence. Additionally, it entails cultivating a positive and respectful attitude towards sexual interactions (Connolly & McIsaac, 2019). The realization of sexual health requires recognizing fundamental rights, such as freedom from discrimination, the right to privacy, freedom from torture or other forms of cruel treatment, the freedom to make decisions regarding family planning, and freedom from sexual assault (Connolly & McIsaac, 2019).

Reproductive and sexual health are deeply intertwined, encompassing multiple factors including physical characteristics, psychological elements, social dynamics, cultural norms, and prior experiences (World Health Organization [WHO], 2021). These elements collectively contribute to an individual's sexual well-being. As such, maintaining health standards in this domain requires attention to critical aspects such as HIV/AIDS prevention, maternal and newborn health promotion, and access to contraception (WHO, 2021). Taking a holistic approach is essential to promoting sexual reproductive health and rights (SRHR) (WHO, 2021). To support progress in this field, the World Health Organization has developed guidelines for conducting research and implementing programs that prioritize sexual health (WHO, 2021). Increasing recognition of the significance of teenage sexual health, both in relation to reproductive health and overall well-being throughout life, is encouraging. However, certain challenges persist, such as addressing ingrained gender stereotypes that impact teenagers during their transition from adolescence to adulthood, as well as ensuring comprehensive reproductive health care and education (WHO, 2021).

Accurate information is vital for closing knowledge gaps, dispelling misconceptions, fostering comprehensive understanding, and promoting empowering skills, positive attitudes, and healthy behaviors (Dombola GM, et al., 2019). According to the Knowledge-Attitude-Behavior paradigm, gaining knowledge is the first step toward changing behavior, as it shapes beliefs and attitudes, ultimately influencing health-related actions. The level of awareness among very young adolescents about key sexual and reproductive health (SRH) issues is crucial for informed decision-making regarding contraception, pregnancy, and the prevention of HIV and other sexually transmitted infections (Finlay, 2020). In Malaysia, sexuality education is integrated into various subjects, including science, biology, moral philosophy, and Islamic studies. National schools emphasize reproductive and social health topics within health education (Coast and Strong, 2019). Despite this, Malaysian teenagers exhibit poor knowledge of sexuality and are less aware of reproductive health, according to an assessment of SRH knowledge among adolescents. In India, students' knowledge of SRH is lower compared to students from other ethnic backgrounds. However, the influence of ethnicity on SRH knowledge among elementary school students in Malaysia has not been studied (Graham, Ckenzie, & Lamaro, 2016).

In Sub-Saharan African countries, particularly South Africa, high school students are highly vulnerable to HIV infection due to factors such as unprotected casual relationships, multiple sexual partners, insufficient information about HIV/AIDS and SRH, limited access to HIV services, early sexual debut, peer pressure, and sexual experimentation (Lutende, 2016). High rates of teenage pregnancies and maternal mortality are significant causes of death among adolescent females in the region. Annually, 430,000 young people in Africa contract HIV, with 2.6 million living with the disease. In 2020, 150,000 of the 400,000 adolescents (aged 10 to 24) who contracted HIV for the first time were between 10 and 19 years old.

This issue is exacerbated by the fact that only 25% of adolescent females and 17% of adolescent boys aged 15 to 19 in Southern Africa and Japan are knowledgeable about HIV prevention, according to the latest data. The Rwandan government has worked hard to enhance sexual and reproductive health by offering health records, training, and counseling; providing a range of safe and affordable contraceptives; ensuring quality prenatal and obstetric care for all pregnant women; conducting pregnancy and HIV testing; preventing and managing STIs; promoting healthy behaviors; and encouraging teenagers to actively participate. These efforts are crucial for improving adolescent health (World Health Organization, 2017). This study aims to assess the knowledge, attitudes, and practices of secondary school students in Rwanda's Kicukiro District regarding sexual and reproductive health. The main objective of this study was to evaluate the knowledge, attitudes, and practices regarding sexual and reproductive health among secondary school students in Kicukiro District, Rwanda. It was guided by the following specific objectives:

i. To assess the level of knowledge about sexual and reproductive health among secondary school students in Kicukiro District, Rwanda.
ii. To identify the attitudes toward sexual and reproductive health among secondary school students in Kicukiro District, Rwanda.
iii. To determine the practices related to sexual and reproductive health among secondary school students in Kicukiro District, Rwanda.

ii. Theoretical Framework

Social Cognitive Theory

Drawing upon his previous work on Social Learning Theory, Albert Bandura developed Social Cognitive Theory (SCT), which holds significant relevance in the fields of psychology, education, and communication. SCT posits that individuals acquire knowledge through observation of others in social contexts, personal experiences, and exposure to external media outlets.

By observing a model's behavior and its outcomes, individuals can remember and regulate their own behaviors accordingly. This observational learning process enables people to adopt new behaviors without direct personal experience, which is essential for human adaptation and growth. The likelihood of behavior replication is influenced by observed rewards or punishments. Media play a significant role by providing various behavioral models in diverse settings. The conceptual roots of SCT date back to the 1931 work of Edwin B. Holt and Harold Chapman Brown, who theorized that all animal actions are driven by psychological needs such as feelings, emotions, and desires. SCT posits that imitation cannot occur without an individual being observed and imitated.

Neal E. Miller and John Dollard (1941) proposed revisions to Holt's theory, suggesting that drives, cues, reactions, and rewards are integral components of the learning process. They emphasized the importance of social motivation, which involves imitation as a mechanism through which behavior imitates specific cues and is influenced by positive or negative reactions. According to Miller and Dollard, explicit observation, imitation, and positive reinforcement facilitate learning when an individual is motivated to acquire a behavior. Social Cognitive Theory (SCT) further highlights the triadic reciprocal interaction among the environment, behavior, and cognition. Individuals' cognitive processes are influenced by every activity they perceive, and their surroundings may shape their future behavior. For example, a caregiver's mindset can create an environment conducive to particular behaviors in children. SCT's core concepts are illustrated through triadic reciprocal causation, showing that behavior reproduction is influenced by the learner's belief in their ability to perform it.

Behavioral factors involve responses received after performing a behavior, such as learning success from correct performance. Environmental factors include setting aspects that influence successful behavior completion, such as providing support and materials to enhance self-efficacy. Learning can occur without visible behavior change, as posited by J.E. Ormrod. Social learning theorists argue that observation alone can lead to learning without immediate performance evidence.

Alex Stajkovic and Fred Luthans propose that motivated behavior is influenced by various factors, including activities, individuals, and circumstances. According to Social Cognitive Theory (SCT), individuals learn by observing others, considering the outcomes, and envisioning similar consequences for their own behavior. SCT emphasizes human agency, suggesting that individuals are proactive and self-regulating rather than solely shaped by their environments or internal forces. Human agency in SCT operates through three modes: individual (personal environmental influence), proxy (others securing individual interests), and collective (group efforts for common benefits).

It encompasses four core properties: intentionality (active decision-making), forethought (anticipating outcomes), self-reactiveness (regulating behavior), and self-reflectiveness (evaluating behavior). Self-efficacy, a key construct in SCT, refers to beliefs about one's ability to influence life events. SCT also includes various constructs such as reciprocal determinism, behavioral capability, observational learning, reinforcements, and expectations. For instance, SCT can help identify motivating factors for increasing physical activity, addressing health issues related to physical inactivity. According to a study by Yael Netz and Shulamith Raviv, improving perceived self-efficacy can improve public health because it is linked to greater physical activity. SCT can also explain declines in physical activity during adolescence and guide interventions to reverse this trend. Increased self-efficacy predicts positive changes in exercise behavior for both men and women. Studies highlight the importance of self-efficacy in public health campaigns promoting physical activity. For example, Miller's 2005 study demonstrated that relatable models in campaigns effectively increased self-efficacy and promoted healthy behaviors among inner-city teenagers.

Similarly, Azza Ahmed's 2009 study used SCT strategies to boost breastfeeding rates among mothers of preterm infants. The program featured personal models demonstrating breastfeeding techniques, weekly skill reinforcement check-ins, and an observational checklist for behavior completion. These strategies, addressing SCT determinants, effectively increased breastfeeding rates, showcasing SCT's practical applications in health education.

iii. Conceptual Framework

A conceptual framework is a theoretical structure that guides research by providing a clear set of concepts and their interrelationships. It serves as a blueprint for a study, helping researchers to clarify key concepts, illustrate relationships, guide research design, and provide focus. The framework comprises several components: variables (such as independent, dependent, moderating, and mediating), operational definitions of these variables, hypothesized relationships among them, the underlying theoretical foundation, and often a visual diagram. The importance of a conceptual framework lies in its ability to provide clarity and focus, guide the research process, ensure consistency with theoretical foundations, and facilitate evaluation and critique of the study.

To tackle the research problem, the study investigated how independent variables, such as knowledge and attitude, relate to dependent variables, namely sexual and reproductive health practices, among secondary school students in Rwanda's Kicukiro District.

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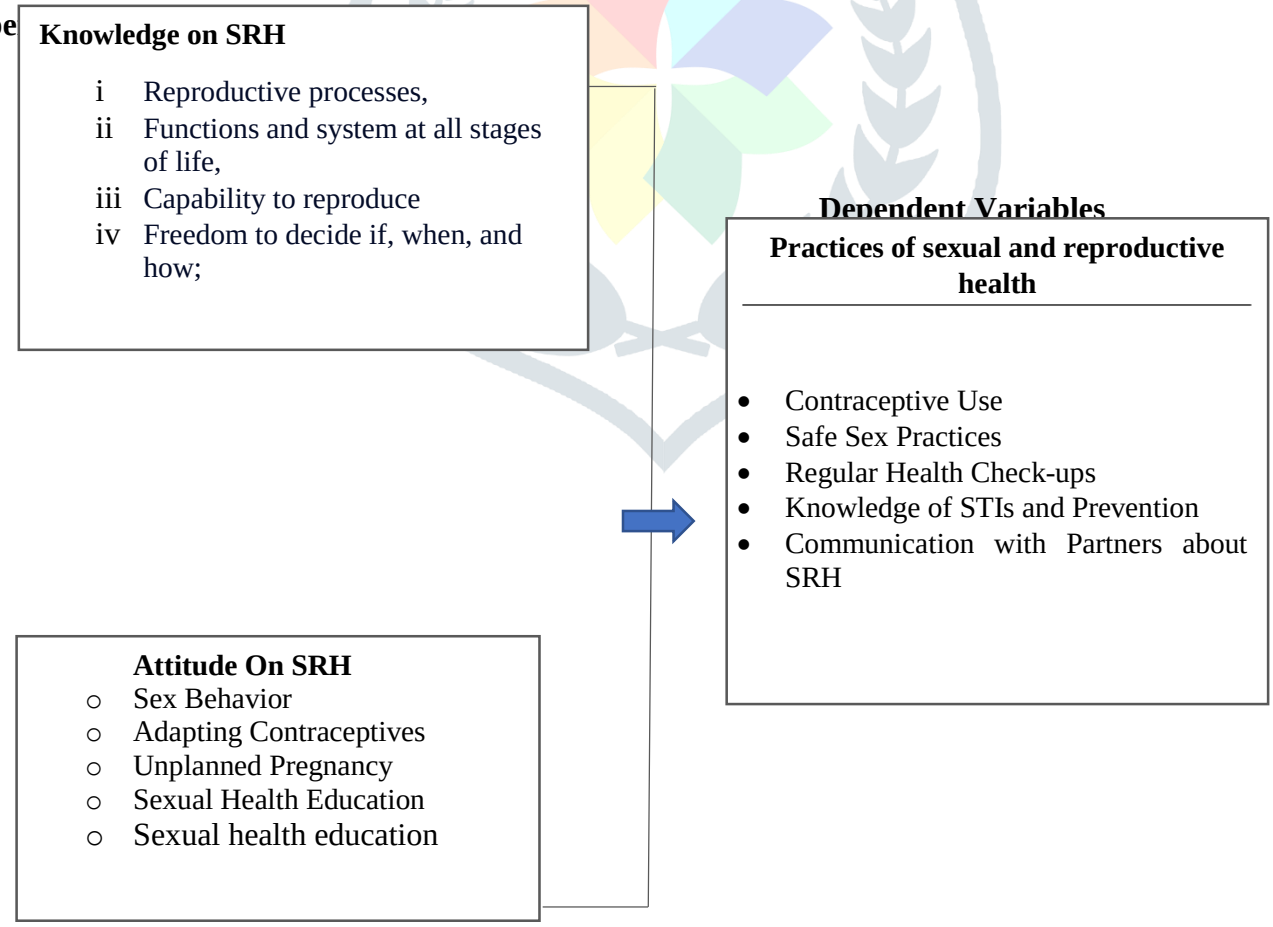

Source: Researcher conceptualization (2023)

Figure 1: Conceptual framework

Sexual health is vital for the overall well-being of individuals, couples, and families, and it significantly influences the social and economic development of communities and nations. Embracing sexual health involves approaching sexuality and sexual relationships positively and respectfully, with the potential for safe and pleasurable experiences devoid of coercion, discrimination, and violence. Achieving sexual health relies on several factors:

- Access to comprehensive, high-quality information about sex and sexuality.
- Awareness of risks associated with unprotected sexual activity.
- Availability of sexual health care.
- Living in environments that support and promote sexual health.

Sexual health issues cover a wide range of topics, such as relationships, pleasure, sexual expression, gender identity, and sexual orientation. Along with related problems including cancer and infertility, unwanted pregnancy and abortion, sexual dysfunction, sexual abuse, and harmful practices like FGM, they also involve unfavorable outcomes like infections like HIV, STIs, and RTIs.

iv. Research Methodology

Research Design

This study used a cross-sectional research design, which is an observational research method that collects data on variables within a sample population or predefined subset at a certain period in time. This method, also referred to as cross-sectional analysis, transversal research, or prevalence studies, aimed to offer quantitative descriptions of frequencies, percentages, and insights into teenagers' knowledge, attitudes, and practices regarding sexual and reproductive health among secondary school students in Rwanda's Kicukiro District.

Research Setting

The research was conducted in Kicukiro, a neighborhood in Kigali, the capital city of Rwanda. Kicukiro Sector, where the Kicukiro headquarters are located, is part of this district. Kicukiro encompasses several sectors, including Gatenga, Gikondo, Kigarama, Niboye, Kagarama, Kicukiro, and Gahanga. Given the short duration of this study, the research focused on assessing respondents' perceptions, knowledge, attitudes, and practices related to sexual and reproductive health.

Study Population

The target population for this study consisted of secondary school students attending both semi-rural and semi-urban schools in the Kicukiro District. Specifically, the schools included in the study were Groupe Scolaire Saint Vincent Pillotie Gikondo, representing an urban school, and EFOTEK, representing a rural school. The intended demographic for these two schools totaled 2,170 students.

Sample Design

A sample design outlines the strategy used to select a portion of a larger population for the purpose of conducting a study. It ensured that the sample accurately represents the population, allowing for valid and reliable results.

Sample Size

Fisher's formula was used to calculate the sample size for this investigation (Hassan, 1991). This method is frequently used in research to determine sample sizes depending on the expected population proportion that possesses the trait of interest, the required level of precision, and the confidence level.

$$n = \frac{\left(\mathrm{Z1} - \frac{\alpha}{2}\right) 2 * \mathrm{p}(1 - \mathrm{p})}{d^2}$$

where; n= Minimum sample size for a statistically significant survey. $\mathrm{Z1} - \frac{\alpha}{2}$= is standard normal variant at 5% type 1 error ($p<0.05$) that brings 1.96. p = expected proportion knowledge of students on SRH are 50%, since there are measures to teach them in secondary schools. d= absolute error or precision has to be decided by the researcher which is 5% or 0.05. q=1-p= probability of failure in one trial is 0.5.

$n = \frac{1.96^2 * 0.5(1-0.5)}{0.05^2} = 384$ Respondents.

The sample size obtained is 384 which is the exact number of respondents that added on its 10% error. That means the exact sample size was 423 respondents if the 10% error was added to the 384 respondents in the computed sample size.

Sampling Techniques

Random and stratified sampling strategies were used in the study to guarantee a representative sample of the intended audience. Using stratified sampling, the population is split up into smaller groups, or strata, according to traits or attributes that they have in common, such grades, schools, and educational achievement.This method enhances the ability to analyze demographic data accurately and ensures that each subgroup is adequately represented. To implement this approach, the entire population of students from Groupe Scolaire Saint Vincent Pillotie Gikondo and EFOTEK in the Kicukiro District was divided into homogeneous strata.

These strata allowed the researcher to draw a sample that closely mirrors the overall population. From these strata, 423 respondents were selected using a combination of stratified and simple random sampling techniques. This selection ensures that the sample is diverse and representative, reducing bias and increasing the reliability of the study's results.

Table1: Population of the Study

Schools	Sample size
Groupe Scolaire Saint Vicent Pillote Gikondo	185
EFOTEK	238
Total	**423**

Source: *schools' information (2023)*

Data Collection Methods

Data collection is the methodical procedure of acquiring and quantifying data from various origins or individuals with the intent of conducting research, analysis, decision-making, or record-keeping. It constitutes a pivotal phase in the research and information-acquisition process, encompassing the subsequent key elements (Kabir, 2016). For this research, data collection methods encompassed both primary and secondary sources.

Data Collection Instruments

Primary data collection utilized questionnaires, enabling respondents to freely express their answers to the posed inquiries. This approach encouraged participants to provide candid and direct responses, even to sensitive queries, facilitating the acquisition of crucial information for the researcher. The questionnaires, prepared in English, comprised a mix of open-ended and close-ended questions. These were distributed among a specific group of participants, namely the students from the chosen schools.

Data Collection Procedures

The data collection process was conducted in accordance with university recommendations. The study was carried out at Groupe Scolaire Saint Vincent Pillote Gikondo and EFOTEK, with official authorization secured through research introduction letters. The central secretaries of the two selected schools assisted in disseminating the questionnaires to various students. Before distributing the questionnaires, the researcher explained the purpose and content to ensure clear understanding. Additionally, the researcher sought permission from the head teachers to conduct the research without restrictions, aiming to gather comprehensive data. Responses were collected over a three-week period, with some questionnaires left for respondents to complete at their convenience.

v. Research Findings and Discussion

Socio-Demographic Characteristics of Respondents

The respondent profile provides essential demographic and background details about the participants from Groupe Scolaire Saint Vincent Pallotti Gikondo and EFOTEK who participated in the study or survey. The aim of developing this profile is to provide a concise overview of their attributes, facilitating comprehension of the collected data and enabling meaningful interpretations. This demographic overview typically encompasses factors such as age, gender, educational attainment, and marital status, as outlined in Table 2 below.

Table 2: Socio-Demographic Characteristics of Respondents

Variables	Categories	Frequencies	Percentages
Age	15years	121	29.0
	16years	133	31.9
	17years	78	18.7
	18years and above	85	20.4
Gender	Male	88	21.1
	Female	329	78.9
Marital status	Single	384	92.1
	Married	19	4.6
	Live with a partner	14	3.4
Religious	Catholic	135	32.4
	Protestant	121	29.0
	Adventist	70	16.8
	Islam	91	21.8

Source: *Primary data (2024)*

Based on the data presented in Table 2, the respondents predominantly fall within the adolescent age range of 15 to 18 years, with the highest representation found among 16-year-olds, comprising 31.9% of the sample. This age distribution aligns well with the study's focus on sexual and reproductive health among secondary school students. The sample is predominantly composed of females, constituting 78.9% of respondents, whereas male participation stands at 21.1%. This gender disproportionality might indicate either a heightened interest or awareness among girls regarding sexual and reproductive health issues, or a greater willingness among them to engage in such surveys.

Regarding marital status, the majority of respondents are single (92.1%), which corresponds with the typical marital status of secondary school students. Only a small fraction (8.0%) report being married or cohabiting with a partner, suggesting that the study population primarily comprises unmarried adolescents. Additionally, respondents exhibit a diverse range of religious affiliations, with Catholicism (32.4%) and Protestantism (29.0%) being the most prevalent, followed by Islam (21.8%) and Adventism (16.8%). This diversity in religious backgrounds offers a wide-ranging perspective on attitudes and practices concerning sexual and reproductive health across various cultural contexts.

Presentation of Findings

In this section, the results are presented and analyzed concerning the level of knowledge, attitudes, and practices regarding sexual and reproductive health among secondary school students in Kicukiro District, Rwanda.

Knowledge on Sexual and Reproductive Health among Secondary School Students

The findings emphasize the urgent necessity for continuous educational and awareness campaigns to address misconceptions and ensure that students possess a comprehensive understanding of sexual and reproductive health. These efforts should aim to convert this knowledge into practical behavior and informed decision-making, ultimately fostering positive sexual and reproductive health outcomes in Kicukiro District. This focus is particularly relevant for students at Groupe Scolaire Saint Vicent Pillote Gikondo and EFOTEK.

Table 3: The Knowledge of Students on SRH among Secondary School Students in Kicukiro District

Statements	Yes		No	
	n	%	N	%
Knowing Puberty (how the male and female body changes during adolescence);	367	88	50	12
Menstruation is one form of disease	368	88.2	49	11.8
Knowing where the ova and sperm are formed and how pregnancy occurs	372	89.2	45	10.8
Have you ever heard of contraceptive methods?	371	89	46	11
Contraceptive methods are effective to prevent pregnancy;	371	89	46	11
Condoms are an effective method to prevent pregnancy	371	89	46	11
A condom can only be used once;	367	88	50	12
Sex without contraceptives can cause HIV AIDS;	369	88.5	48	11.5
Girls can get pregnant the first time have sex;	351	84.2	66	15.8

Kissing can cause HIV transmission	61	14.6	356	85.4
HIV does not spread the virus from an infected person's coughing and sneezing	89	21.3	328	78.7
HIV spreads through the mosquito and flea	80	19.2	337	80.8
Overall Average	**295**	**70.7**	**122**	**29.3**

Source: Primary data (2024)

Table 3 displays the perspectives of respondents concerning different facets of sexual and reproductive health (SRH) among secondary school students in Kicukiro District, Rwanda. The results reveal that the majority of students exhibit a solid comprehension of puberty and its associated changes in both male and female bodies during adolescence. Specifically, 88% (n=367) responded affirmatively with "Yes," while 12% (n=50) answered negatively with "No." This indicates a favorable level of awareness among the surveyed population. Additionally, most students correctly perceive menstruation as a natural process and not a disease, with 88.2% (n=368) answering "Yes" and 11.8% (n=49) answering "No." Students also demonstrated knowledge about the formation of ova and sperm and the process of pregnancy, with 89.2% (n=372) confirming their understanding and 10.8% (n=45) indicating a lack of knowledge.

Awareness of contraceptive methods and their effectiveness is high, with 89% (n=371) of students affirming their understanding and 11% (n=46) indicating otherwise. Similar levels of understanding were observed regarding condom effectiveness and misconceptions about condoms, with 89% (n=371) and 88% (n=367) respectively, showing correct perceptions.

Students also showed substantial awareness of HIV transmission, with 88.5% (n=369) correctly understanding how HIV is transmitted, and 84.2% (n=351) recognizing the risk of pregnancy. However, there are notable gaps in understanding specific misconceptions about HIV transmission routes, with only 14.6% (n=61) holding incorrect beliefs, and a significant portion, 78.7% (n=328), correctly understanding how HIV is not transmitted through mosquitoes.

Overall, the average knowledge level among students on SRH topics in Kicukiro District indicates that 70.7% of students answered "Yes" to the statements, demonstrating awareness and understanding of various SRH topics. Conversely, 29.3% of students answered "No," highlighting gaps in their knowledge. This suggests that while a significant majority of students have a good understanding of key SRH concepts, there remains a notable proportion who lack essential knowledge, underscoring the need for improved education and awareness programs in this area. The figure below illustrates the level of knowledge, with categories defined as follows: below 10% is considered low, 11-49% is moderate, 50-75% is high, and above 75% is very high. As shown in Figure 4.2, the majority of students fall into the high to very high knowledge levels regarding SRH among secondary school students.

Level of Knowledge of Students on SRH among Secondary School Students

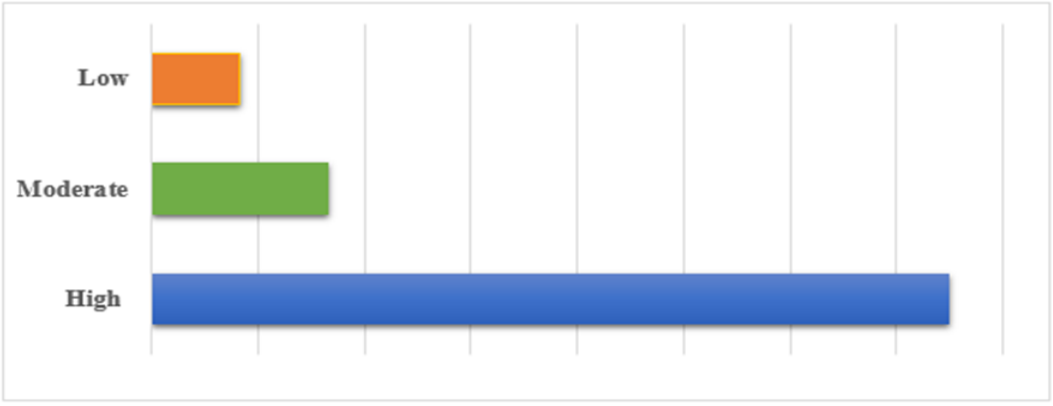

Figure 2: Level of Knowledge of Students on SRH among Secondary School Students

As depicted in Figure 2, the majority of respondents (75.0%) demonstrate a high level of knowledge on sexual and reproductive health (SRH), while only 8.3% of respondents exhibit a low level of knowledge.

Attitudes on SRH among Students in Secondary Schools in Kicukiro District

The findings regarding attitudes on sexual and reproductive health (SRH) among students in secondary schools in Kicukiro District suggest the existence of a study or survey pertaining to SRH attitudes in this demographic.

Table 4: Findings on Attitudes of Students in Secondary Schools in Kicukiro District about SRH

Statements	SD	D	N	A	SA	Mean	Std.
	n (%)	n (%)	n (%)	n (%)	n (%)	(x)	Dev.
Positive Statement							
I could carry a condom with me in case I needed one;	36(8.6%)	36(8.6%)	112(26.9%)	82(19.7%)	151(36.2%)	3.662	1.282
It's good to talk about using condoms with any sexual partner;	49(11.8%)	62(14.9%)	102(24.5%)	65(15.6%)	139(33.3%)	3.439	1.386
I could talk about contraceptives with a potential partner;	51(12.2%)	40(9.6%)	119(28.5%)	59(14.1%)	148(35.5%)	3.511	1.375
I could convince my partner to use preservative materials for preventing HIV or unplanned pregnancy;	47(11.3%)	42(10.1%)	109(26.1%)	72(17.3%)	147(35.3%)	3.552	1.355
I could say no to sex if my partner refused to use a contraceptive;	32(7.7%)	43(10.3%)	111(26.6%)	70(16.8%)	161(38.6%)	3.684	1.288
I or my partner hold emergency contraception before or after sex;	79 (18.9%)	33(7.9%)	100(24.0%)	63(15.1%)	142(34.1%)	3.374	1.488
I believe it is ok to have a boyfriend or girlfriend before marriage;	102(24.5%)	59(14.1%)	93(22.3%)	50(12.0%)	113(27.1%)	3.031	1.526
I believe it is ok for boys and girls to have sex if they use contraceptive methods to prevent pregnancy;	20(4.8%)	32(7.7%)	109(26.1%)	83(19.9%)	173(41.5%)	3.856	1.182
Negative statement							
	60(14.4%)	45(10.8%)	98(23.5%)	65(15.6%)	149(35.7%)	3.475	1.431

I believe that it is the girl's responsibility to make sure to use contraception regularly;							
I believe abortion is ok when there is an unplanned pregnancy.	62(14.9%)	33(7.9%)	105(25.2%)	62(14.9%)	155(37.2%)	3.516	1.431
Overall Average mean						**3.51**	**1.3744**

NB: SD= Strongly disagree, D=Disagree, N=neutral, A=Agree, SA=Strongly Agree; n=frequency; %=percentage.
Source: primary data (2024)

The data in Table 4 reveal significant insights into the attitudes of secondary school students in Kicukiro District, Rwanda, towards various aspects of sexual and reproductive health (SRH).

A considerable proportion of students, 36.2%, strongly agree with carrying condoms for protection, reflecting a positive attitude towards safe sexual practices. The mean score of 3.662 indicates a general tendency towards agreement, with a standard deviation of 1.282 showing moderate variability in responses.

When it comes to discussing condom use, the mean score of 3.439 suggests a neutral to slightly agreeable attitude. However, the standard deviation of 1.386 indicates a higher variability in responses compared to the previous statement. Regarding the discussion of contraceptive methods, 35.5% of students strongly agree, suggesting openness and a positive attitude towards these discussions. The mean score of 3.511 supports this tendency towards agreement, with moderate variability in responses as indicated by a standard deviation of 1.375. Additionally, students generally agree with being assertive in sexual decision-making, with 38.6% strongly agreeing.

This agreement is demonstrated by the mean score of 3.684, while the standard deviation of 1.288 indicates moderate variability. Positive sentiments are also evident in the awareness and readiness for emergency contraception, with 34.1% of students strongly agreeing. The high standard deviation of 1.488 suggests significant heterogeneity in responses, whereas the mean score of 3.374 suggests a tendency towards agreement. Diverse attitudes exist towards premarital relationships, with 24.5% of students disagreeing and 27.1% strongly agreeing that having a partner before marriage is acceptable. The mean score of 3.031 indicates a slight inclination towards agreement, but the large standard deviation of 1.526 highlights the wide range of opinions.

Acceptance of sexual activity with contraceptive use is reflected in the responses, with 41.5% of students strongly agreeing. The overall average mean of 3.51 for attitudes on SRH indicates a general tendency towards positive attitudes among students. However, the standard deviation of 1.3744 shows moderate variability, highlighting a significant spread in attitudes. These findings underscore the importance of continued and enhanced SRH education to address the diverse perspectives among students and ensure comprehensive understanding and acceptance. While many students hold favorable attitudes towards SRH, such as carrying condoms, discussing contraceptives, and using contraception, there are notable proportions with neutral or less favorable views. This highlights the need for targeted educational efforts to bridge the knowledge gaps and foster a more universally positive attitude towards SRH among all students.

Attitudes of Students in Secondary Schools Regarding SRH;

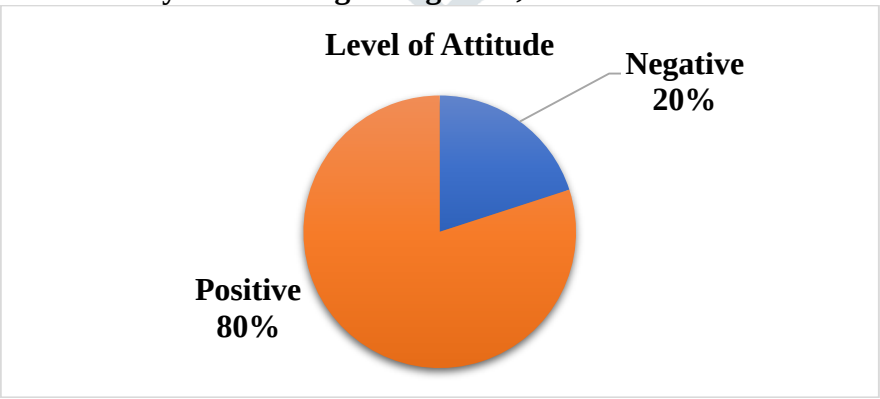

Figure 3: Level of Attitudes of Students in secondary schools regarding SRH

The figure 3 confirmed that majority of 80% respondents have positive attitude toward SRH while remaining 20% respondents had negative attitude regarding SRH.

The Practices of SRH among Secondary School Students in Kicukiro District

The findings presented in this report encompass a wide range of topics, including sexual education, contraceptive use, access to reproductive health services, attitudes towards SRH, and the prevalence of risky sexual behaviors.

Table 5: The Practices of SRH among Secondary School Students in Kicukiro District

Statements	Yes		No	
	n	%	N	%
Using contraceptives always to prevent unintended pregnancies;	316	75.8	101	24.2
Engaging in open discussions about sexual health with peers and trusted adults;	317	76	100	24
Seeking regular medical check-ups and screenings for sexually transmitted infections (STIs);	403	96.7	14	3.4
Empowering oneself with comprehensive sexual education;	362	86.9	55	13.2
Advocate for access to sexual and reproductive health services;	403	96.7	14	3.3
Support peers in accessing reproductive health information and resources;	365	87.6	52	12.5
Delay sexual debut to focus on education and personal development;	202	48.4	215	51.6
Promoting healthy lifestyles and behaviors to maintain sexual and reproductive well-being;	342	82.1	75	18
Practice the prevention of sexually transmitted illnesses;	378	90.6	39	9.4
Overall Average	**343**	**82.3**	**74**	**17.7**

Source: primary data (2024)

The findings presented in Table 5 shed light on the practices of sexual and reproductive health (SRH) among secondary school students in Kicukiro District. A majority of students (75.8%) reported always using contraceptives to prevent unintended pregnancies, indicating a positive practice towards contraception. However, 24.2% reported not always using contraceptives, signaling the need for further education and improved access to contraception. A significant proportion of students (76%) reported engaging in open discussions about sexual health with peers and trusted adults, indicating a positive practice towards seeking information and support regarding SRH issues. The vast majority of students (96.7%) reported seeking regular medical check-ups and screenings for STIs, demonstrating a proactive approach towards maintaining sexual health and preventing STIs.

A significant portion of students (86.9%) expressed actively engaging in comprehensive sexual education, demonstrating a positive attitude towards acquiring knowledge and skills related to sexual and reproductive health (SRH). Additionally, a significant majority of students (96.7%) expressed support for the availability of sexual and reproductive health services, demonstrating their commitment to guaranteeing that these vital tools and assistance are accessible to all.

Additionally, the majority of students (87.6%) reported assisting their peers in accessing reproductive health information and resources, highlighting the presence of a supportive peer network and a willingness to share knowledge and resources. Approximately half of the students (48.4%) reported delaying sexual debut to focus on education and personal development, suggesting a recognition of the importance of prioritizing academic and personal goals over early sexual activity.

A significant proportion of students (82.1%) reported promoting healthy lifestyles and behaviors to maintain sexual and reproductive well-being, indicating a proactive approach towards overall health and well-being. The majority of students (90.6%) reported practicing the prevention of sexually transmitted illnesses, emphasizing the importance of preventive measures in reducing the risk of STIs.

The overall average findings for the practices of SRH among secondary school students in Kicukiro District indicate that 82.3% of students engage in positive SRH practices, while 17.7% do not. This high percentage of students participating in beneficial practices reflects a strong commitment to maintaining and promoting sexual and reproductive health. However, the 17.7% who do not engage in these practices highlight a need for ongoing education and support to ensure all students have the knowledge and resources to adopt healthy SRH behaviors.

Overall Score Practices of SRH

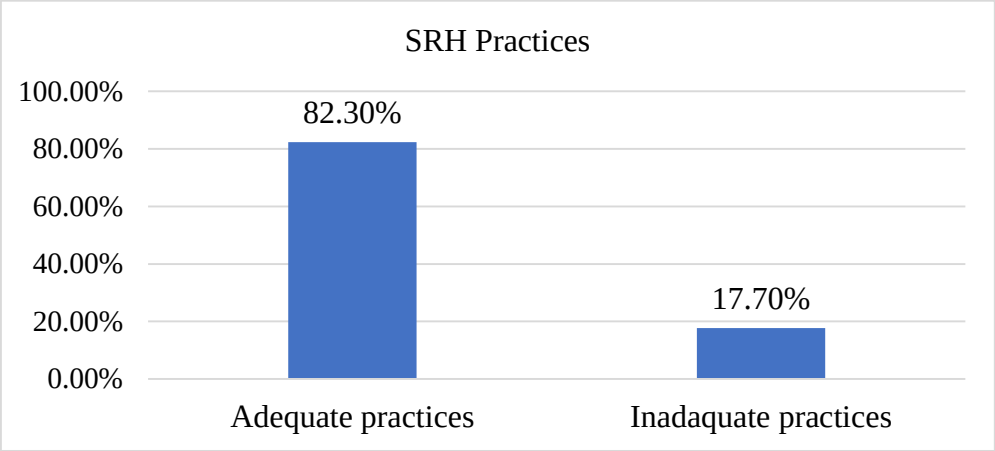

Figure 4: Overall Practices of SRH among Secondary School Students in Kicukiro District

The findings indicated on figure 4 illustrates majority of 82.3% respondents who have adequate practices of SRH while 17.7% respondents presented inadequate practices on SRH.

Association between Knowledge, Attitudes regarding SRH and Practices of Sexual and Reproductive Health

The findings for inferential statistics analysis delve into correlations between attitudes towards sexual and reproductive health (SRH) and various demographic variables, such as gender or religious affiliation. Correlation analysis examines the strength and direction of linear relationships between variables, aiding in identifying predictors of SRH outcomes among students and informing targeted interventions and policy initiatives to improve SRH outcomes in the community.

Table 6: Correlations Coefficient Matrix results

		Knowledge	Attitudes	Practices towards SRH
Knowledge	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	417		
Attitudes	Pearson Correlation	.497**	1	
	Sig. (2-tailed)	.000		
	N	417	417	
Practices towards SRH	Pearson Correlation	**.864****	**.581****	**1**
	Sig. (2-tailed)	.000	.000	
	N	417	417	417

**. Correlation is significant at the 0.01 level (2-tailed);

The results shown in Table provide insight into the relationships between secondary school students in Rwanda's Kicukiro District and their knowledge, attitudes, and practices about sexual and reproductive health (SRH). A robust positive correlation emerges between SRH knowledge and SRH practices ($r = 0.864$, $p < 0.01$), indicating that students with a deeper understanding of SRH tend to engage in more favorable SRH practices.

Likewise, a significant positive correlation is observed between SRH attitudes and practices concerning sexual and reproductive health ($r = 0.581$, $p < 0.01$), suggesting that students who hold positive attitudes toward SRH are more inclined to adopt beneficial SRH practices. The outcomes of the multivariate analysis provide valuable insights into the factors that shape sexual and reproductive health (SRH) outcomes among secondary school students in Kicukiro District, Rwanda.

The researcher finds critical elements impacting SRH outcomes by closely examining the interactions between numerous independent variables, such as SRH knowledge, attitudes, and practices regarding sexual and reproductive health, as dependent variables of interest. This analysis facilitates comprehension of the relative significance of different factors in shaping SRH outcomes and furnishes essential information for crafting targeted interventions and policies aimed at fostering positive SRH behaviors and outcomes among secondary school students.

Multiple Linear Regression Analysis

Table 7: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	**.652[a]**	**.426**	**.423**	**7.02351**

a. Predictors: (Constant), Attitudes, Knowledge

b. Dependent Variable: Practices towards Sexual and Reproductive Health

The model summary displayed in Table 7 reveals that the correlation coefficient (R) is 0.652, indicating a positive correlation between the predictors (attitudes and knowledge) and the dependent variable (practices toward sexual and reproductive health). The R-squared (r^2) value of 0.426 suggests that approximately 42.6% of the variance in practices toward sexual and reproductive health can be explained by the predictors incorporated in the model. The adjusted R-squared value of 0.423 is nearly identical to the R-squared value. The standard error of the estimate, at 7.02351, signifies the average disparity between the actual values of the dependent variable and the predicted values by the regression model.

Table 8: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15140.009	2	7570.005	**153.457**	**.000[b]**
	Residual	20422.501	414	49.330		
	Total	35562.510	416			

a. Dependent Variable: Practices towards Sexual and Reproductive Health

b. Predictors: (Constant), Attitudes, Knowledge

The ANOVA table (Table 8) offers insight into the overall significance of the multiple linear regression model in predicting practices toward sexual and reproductive health among secondary school students in Kicukiro District, Rwanda. The F-statistic (153.457) is derived by dividing the mean square of the regression by the mean square of the residual. It evaluates whether the variance elucidated by the predictors is significantly greater than the unexplained variance. The significance level (Sig. = .000) denotes the likelihood of obtaining the observed F-statistic by chance if the alternative hypothesis positing that the predictors affect the dependent variable is true and retained. In this instance, the p-value is less than 0.01, indicating that the regression model is statistically significant.

Table 9: Regression Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.733	2.333		3.744	.000
	Knowledge	.315	.039	.343	7.990	.000
	Attitudes	.374	.039	.410	9.561	.000

a. Dependent Variable: Practices towards Sexual and Reproductive Health

The Regression Coefficients outlined in Table 9 detail the coefficients for the predictors (knowledge and attitudes) incorporated in the multiple linear regression model forecasting practices toward sexual and reproductive health among secondary school students in Kicukiro District, Rwanda. The constant term (B = 8.733) signifies the estimated value of the dependent variable (practices toward sexual and reproductive health) when all predictor variables are zero. The coefficient for knowledge (B = 0.315) indicates the alteration in the dependent variable for a one-unit increase in the predictor variable (knowledge), while holding all other variables constant. Likewise, the coefficient for attitudes (B = 0.374) signifies the alteration in the dependent variable for a one-unit increase in the predictor variable (attitudes), maintaining all other variables constant. The t-statistic evaluates the significance of each coefficient, with both knowledge and attitudes displaying highly significant coefficients (Sig. = .000), signifying their substantial contributions to predicting practices toward sexual and reproductive health.

Discussion of Findings

The socio-demographic characteristics provide valuable insights into the study population, helping contextualize findings concerning knowledge, attitudes, and practices regarding sexual and reproductive health (SRH) among secondary school students in Kicukiro District, Rwanda.

Findings on the Level of Knowledge on Sexual and Reproductive Health (SRH) among Secondary School Students

The findings from this study show a high level of knowledge on sexual and reproductive health (SRH) among secondary school students in Kicukiro District, with an average knowledge level of 70.7%. The majority of students understand critical SRH topics such as puberty changes, menstruation, pregnancy, and contraceptive methods, with over 88% demonstrating accurate knowledge in these areas. However, misconceptions persist, particularly regarding HIV transmission myths, as evidenced by the 14.6% of students who incorrectly believe that kissing can cause HIV.

This level of knowledge aligns with the findings of Ndayishimiye et al. (2019) in Rwanda, who also reported high awareness of basic SRH topics among adolescents but noted gaps in understanding specific issues like HIV transmission. Similarly, a study by Sultana et al. (2022) in Bangladesh found that while adolescents generally had good knowledge of SRH, misconceptions about HIV transmission were common, indicating a global trend. The findings also resonate with those of Tadesse et al. (2021) in Ethiopia, where students displayed strong knowledge of SRH concepts but were less informed about the nuances of HIV prevention and transmission. These comparisons suggest that while SRH education is relatively effective, targeted interventions are needed to address persistent knowledge gaps, particularly around HIV.

Findings on Attitudes towards Sexual and Reproductive Health (SRH) among Secondary School Students

The study reveals generally positive attitudes towards SRH among secondary school students in Kicukiro District, with an average mean score of 3.51, indicating a favorable disposition towards SRH issues such as condom use, contraceptive discussions, and assertiveness in sexual decision-making. However, attitudes towards premarital relationships show significant variability, reflecting diverse views within the student population. These findings are consistent with the attitudes reported by Ali et al. (2021) in Pakistan, where students showed positive attitudes towards the use of contraception and open discussions about SRH. However, like the current study, Ali et al. also found variability in attitudes towards premarital sex, influenced by cultural and religious factors. Ochieng et al. (2020) observed similar trends in Kenya, where positive attitudes towards SRH were present but tempered by cultural norms regarding premarital sex. These comparisons highlight the complex interplay between education, culture, and attitudes towards SRH, suggesting that while education can foster positive attitudes, cultural sensitivities must be considered in SRH programs.

Findings on the Practices of Sexual and Reproductive Health (SRH) among Secondary School Students

The study indicates a strong commitment to positive SRH practices among secondary school students in Kicukiro District, with 82.3% engaging in practices such as regular contraceptive use, open discussions about sexual health, and seeking medical check-ups. However, the 17.7% of students who do not consistently engage in these practices highlight the need for improved education and access to SRH resources. These findings are similar to those of Zulu et al. (2020) in Zambia, where a majority of adolescents reported positive SRH practices, particularly in the use of contraception and STI prevention.

However, like the current study, Zulu et al. identified a subset of adolescents who did not consistently engage in safe SRH practices, often due to barriers such as stigma or lack of access to services. Tadesse et al. (2021) also reported high engagement in positive SRH practices among Ethiopian adolescents but noted that inconsistent contraceptive use and lack of access to SRH services were common issues. These comparisons underscore the importance of addressing both educational and structural barriers to ensure all students can engage in healthy SRH practices.

The findings from this study highlight a generally high level of knowledge, positive attitudes, and strong engagement in SRH practices among secondary school students in Kicukiro District. However, persistent gaps in knowledge, variability in attitudes, and inconsistent practices among a minority of students suggest the need for ongoing education and support. These findings are consistent with previous research in similar contexts, indicating that while progress has been made, there is still work to be done to ensure comprehensive SRH education and resource access for all students.

Addressing these gaps will be crucial for promoting positive SRH outcomes in the long term. The regression analysis confirms the significance of both knowledge and attitudes in predicting SRH practices, emphasizing the need for comprehensive SRH education programs that focus on knowledge acquisition and attitude development. Overall, these findings underscore the necessity for tailored interventions and policies aimed at promoting positive SRH behaviors and outcomes among secondary school students in Kicukiro District, Rwanda.

vi. Conclusion

The study provides a comprehensive overview of sexual and reproductive health (SRH) among secondary school students in Kicukiro District, Rwanda. The findings reveal a commendable level of SRH knowledge, with students demonstrating a solid

understanding of essential concepts such as puberty, menstruation, pregnancy, and contraception. This high level of awareness is positively correlated with more favorable attitudes and practices related to SRH. The research highlights a moderate positive association between SRH knowledge and attitudes, indicating that students who possess a deeper understanding of SRH issues are more likely to hold positive attitudes towards these topics. Similarly, there is a robust positive correlation between SRH knowledge and practices, suggesting that better-informed students are more inclined to engage in positive SRH behaviors.
Moreover, the study reveals a strong positive relationship between SRH attitudes and practices, showing that students with favorable attitudes towards SRH are more likely to adopt constructive practices. This underscores the importance of not only imparting knowledge but also shaping attitudes through comprehensive SRH education. In conclusion, the findings emphasize the need for holistic SRH education initiatives in Kicukiro District. Such programs should focus on both enhancing knowledge and fostering positive attitudes to promote healthier SRH practices among students. By creating an environment that supports both educational and attitudinal development, these initiatives can significantly improve sexual and reproductive health outcomes within the community.

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