

PREVALENCE OF UNWANTED TEENAGE PREGNANCY AMONG TEENAGERS ATTENDING KIBAGABAGA LEVEL II TEACHING HOSPITAL, RWANDA

¹Mick Ndayishimiye, ²Maurice B. Silali, (PhD)

¹ Corresponding author, Mount Kigali University Rwanda.

² Co-author, Department of Public Health, Mount Kigali University Kigali, Rwanda

DOI: <https://doi.org/10.5281/zenodo.20955369>

Published Date: 27-June-2026

Abstract: Globally, an unwanted adolescent pregnancy is one of the biggest concerns. Annually, around 12 million adolescents between the ages of 15 and 19 experience pregnancy, with 75% residing in sub-Saharan Africa. In Rwanda, unwanted adolescent pregnancy is recognized as a critical public health setback requiring coordinated efforts across multiple sectors. Despite previous successes in reducing teen pregnancies in Rwanda, progress has recently stalled. No studies have been published to elucidate level of unwanted teenager pregnancy in Gasabo district or Kibagabaga Level II Teaching hospital. It was this reasons that let to study prevalence of unwanted teenager pregnancy in Gasabo district and lastly evaluate knowledge, attitude and practice (KAP) among teenagers attending Kibagabaga Level II Teaching Hospital, Rwanda. The study employed both quantitative and qualitative approaches through interviews and surveys. The design was descriptive, cross-sectional, and retrospective, covering data from the last five years. A sample of 341 teenage girls was selected using purposive and retrospective sampling techniques, and data were analyzed in SPSS version 25 using descriptive and inferential statistics. The results indicated that the period prevalence rate of teenage pregnancy among teenagers was 9.18% (31) with associated significant protective values of RR (0.01, 0.91) and p-value of 0,023. Knowledge of the negative attitudes and practices toward contraception significantly increased vulnerability. 94 (30.3%) of the respondents identified condoms as the method they were most familiar with. However, awareness of long-acting reversible contraceptives (LARCs) such as implants (4.1%) and emergency contraceptive pills (6.3%) was notably low. Attitudinal and practice assessments revealed similarly concerning trends where 58.1% (198) believed a girl should not suggest condom use to her boyfriend, and only 10.6% (36) reported using them consistently, while 60.7% (207) used them occasionally, and 28% (98) never used condoms. The study concluded that comprehensive SRH education, accessible youth-friendly services, and engagement of religious and cultural leaders are critical. Recommendations included establishing a youth-dedicated room (Icyumba cy'urubwiruko) at Kibagabaga Hospital served by trained SRH providers, expanding school and community outreach programs, integrating SRH into all education levels, and strengthening parent-adolescent communication on sexuality.

Keywords: Prevalence, teenage pregnancy, health information, knowledge, attitude, practice, Kibagabaga, Rwanda.

1. INTRODUCTION

1.1 Introduction and Background Information

Teenage pregnancy is a global public health concern. The global adolescent population stands at 1.2 billion. However, up to 15% of teenage girls become mothers before turning 18 (Kassa, et al., 2018). South East Asia experiences a significant number of teenage pregnancies, attributed to its high population density, with Bangladesh leading in the region (Yadufashije, Sangano and Samuel, 2017). Conversely, Sub-Saharan Africa holds the worst per capita level of adolescent

pregnancies where UNICEF reports that globally, 13 million children are born annually to girls under 20, with over 90% of these deliveries occurring in developing world (Kassa et al., 2018).

Teenage pregnancy is a phenomenon that affects all societies, but its prevalence and consequences vary significantly across different countries and regions (Kumar et al., 2018). This issue is due to a complex interplay of socioeconomic factors, such as poverty, cultural norms that endorse child marriage, disparities between genders, acts of sexual aggression, insufficient access to education, and cultural practices (Yadufashije, Sangano, and Samuel, 2017). The majority of teenage births—95%—occur in low- and middle-income countries (LMICs), highlighting the uneven distribution of this public health concern between high- and low-income nations (Kumar et al., 2018). In developing countries, millions of teenage girls face unintended pregnancies each year, which pose significant health risks for both the mothers and their babies, including maternal mortality, complications during childbirth, and neonatal health issues (Kassa et al., 2018).

Bringing the status quo to the level of Sub-Saharan Africa. Annually, 12 million adolescents between 15 and 19 become pregnant globally, with 75% occurring in sub-Saharan Africa (Griggs, 2013). In Niger, for instance, 75% of married teenage girls and women have given birth before turning 18, marking the worst teen pregnancy and child marriage globally (Kamal et al., 2015). In Africa, the number of adolescent mothers' increases by 10% annually, predominantly due to unintended pregnancies which present significant challenges, including the perpetuation of the poverty cycle for the next generation (Yakubu, 2018).

Adolescent pregnancy rates across Africa were reported at 18.8%, with Sub-Saharan Africa specifically at 19.3% (Kassa et al., 2018). Kassa, Arowojolu, Odukogbe, and Yalew (2018) indicated that Northern Africa had the lowest prevalence at 9.5%, whereas East Africa had the highest at 21.5%. In 2018, the world's teenage pregnancy was estimated at 44 births per 1,000 girls aged 15 to 19 where the highest regional rate was observed in West and Central Africa, with 115 births per 1,000 girls while countries with the highest teenage birth rates, exceeding 178 births per 1,000, included the Angola, Chad, Niger, Central African Republic and Mali (Griggs, 2013).

Sub-Saharan Africa (SSA) countries have a larger proportion of young people per capita compared to other highly populated regions such as Southeast Asia (Kassa et al., 2018). Additionally, complications from adolescent pregnancy, including an increased risk of pre-eclampsia and sepsis, are the first cause of death for girls between ages of 15 and 19 (Yakubu, 2018). Adolescent pregnancy also leads to significant emotional distress for many girls, heightening the risk of depression and social and economic difficulties, which contribute to at least 70,000 deaths each year (Mayor, 2020).

Chandra et al. (2015) notes that the United Nations' implementation of various agendas and policies from 1990 to 2015 resulted in a significant global reduction in adolescent pregnancies, where these initiatives have notably enhanced women's lives, particularly in the most impacted regions, by supporting educational opportunities for girls and women who become pregnant. Moreover, the UN's policies have financed and encouraged research focused on family planning, resulting in the development of modern contraceptive methods and campaigns against restrictive laws and practices related to women's access to family planning (Kamal et al., 2015).

However, significantly more efforts are required to reduce adolescent pregnancies in the Global South and Sub-Saharan Africa (SSA) due to several factors which include the fact that these regions are characterized by severe socioeconomic disadvantages, with most residents living in extreme poverty, influenced by cultural differences, and frequently experiencing seasonal conflicts, all of which worsen the issue of teenage pregnancies (Chandra et al., 2015). Additionally, many of these countries heavily rely on financial assistance, including substantial donations and loans from international banks, which come with conditions that limit financial autonomy which often leads to the critical issue of teenage pregnancies being neglected and results in inadequate funding to provide necessary resources for adolescent mothers and their infants (Kamal et al., 2015).

Neal et al. (2015) performed an in-depth analysis of adolescent pregnancy in countries of East African Community using disaggregated data from DHS for Uganda, Kenya, and Tanzania where the findings revealed that a significant proportion of women in these countries experienced their first childbirth before the age of sixteen, ranging from 7% to 12%.

Bringing it to the Rwandan level, Rwanda's economy is experiencing rapid expansion in Africa, according to reports from International Monetary Fund (IMF) and the World Bank. The relationship between a youthful population and development is evident in numerous countries, notably in the Far East Asia region while also it is notable that a large youth demographic can be a double-edged sword if the nation fails to provide essential services for population welfare and sustainable long-term health (Behuria, 2018).

According to NISR (2015), a significant portion of the country's population consists of young people under 25 with the high rate of youth unemployment in Rwanda leading to various negative outcomes, including prostitution, robbery, and sexual trafficking. One notable impact of youth unemployment is the incidence of teenage pregnancies, which complicates the implementation of long-term national social and economic projects evidenced by studies which have shown that economic growth is not guaranteed by population growth unless the population is productive (Behuria, 2018). Adolescents from economically disadvantaged backgrounds face these adverse effects directly, experiencing poor living conditions, limited educational opportunities, and environments unsuitable for child-rearing which often result in neglect of the development, health, and well-being of teenagers, particularly females, potentially leading to teenage pregnancies (Yakubu, 2018). Although both boys and girls are affected, girls are more susceptible to exploitation due to societal norms where they are more likely to engage in unprotected or coerced sexual activities with older men or other teenage boys, increasing the risk of unplanned pregnancies (Lawther, 2017).

According to DHS5, in Rwanda, one-third of teenagers are sexually active by the age of twenty and 6.8% of girls aged 15 to 19 reported having had sexual relationships before the age of 15 (NISR, 2020). Despite initiatives to address the issue, Rwandan adolescents continue to high unwanted teenage pregnancy, unsafe abortions, as well as an increased risk of HIV infection (Ministry of Health, 2015).

The Rwandan government has undertaken initiatives to enhance the Sexual and Reproductive Health (SRH) of adolescents and youths by implementing various policies and strategies aimed at providing accessible and equitable services (Enabel, 2016). Despite these efforts, Rwanda still faces significant challenges in adolescent sexual and reproductive health (ASRH), such as early sexual activity, teenage pregnancies, unsafe abortions, risky sexual behaviors, and insufficient use of contraceptives (Bahati, 2013). Additionally, opportunities for young individuals to explore and discuss subjects such as sexuality, puberty and family planning are quite restricted due to social stigma and cultural and religious obstacles (Sally Effie, 2015).

Regarding the legal framework, Rwanda has endorsed several regional and international human rights agreements relevant to sexual and reproductive health rights including the African Youth Charter, the Maputo Protocol, the International Covenant on Economic, Social, and Cultural Rights, the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW), the Convention on the Rights of the Child, and the African Charter on Human and Peoples' Rights (Bekker, Dolzer, and Waibel, 2010; Bahati, 2013; Svanemyr, Scolaro, Chandra-Mouli, Blondeel, and Temmerman, 2013; Umozurike, 1983; Sally Effie, 2015). Although legal frameworks are in place, according to research conducted by Haguruka (2018) there are several critical challenges faced by adolescent mothers including insufficient awareness of their legal rights, issues related to gender-based and sexual violence, and a limited understanding of sexual and reproductive health.

The National Institute of Statistics in Rwanda (NISR) has classified teenage pregnancy as a significant public health concern that necessitates effective management to mitigate its short- and long-term impacts on both young mothers and their children (NISR, 2015). It is essential for the government to formulate and implement developmental policies and programs aimed at curbing the increase in adolescent pregnancies (Lawther, 2017). Additionally, efforts should focus on the health and well-being of teenage mothers and the social and psychological development of their children to prevent future unwanted pregnancies (Abbott et al., 2017).

2. MATERIAL AND METHODS

2.1. Material

2.1.1 Prevalence of Unwanted Pregnancies Among Teenagers

Globally, regionally and locally in Rwanda, the rise of new and old cases of unwanted pregnancies, especially in lower and middle-income countries (LMICs) remains a big challenge which seeds from family structure, peer pressure as well as accessibility and affordability of health education including the non-structural elements like politics as well as religion (Kwasi, 2018).

While teenage pregnancy rates have declined significantly in most high-income countries, they remain elevated across low- and middle-income countries. Globally, about one in four adolescent girls becomes pregnant. In Africa, the prevalence is estimated at 18.8%, with rates of 19.3% in sub-Saharan Africa and 21.5% in Eastern Africa. Across Eastern Africa, teenage pregnancy varies between 18% and 29%. In Rwanda, the 2014–2015 Demographic and Health Survey documented a rise

in teenage pregnancy, increasing from 4.1% in 2005 to 7.3% in 2014. The 2019–2020 RDHS later reported that around 5% of girls aged 15–19 had begun childbearing where 4% had already given birth and 1% were pregnant, reflecting a slight reduction from 2014/2015. However, rates are believed to have climbed again in the years following COVID-19, influenced by factors such as poverty, limited access to sexuality education, and socio-cultural pressures. These trends have driven policy discussions, including proposals to allow adolescents to obtain contraceptives without parental consent and to expand access to safe abortion for those under 18 (Nduhuye et al., 2024).

The family structure conducive to the proliferation of unintended pregnancies is notably associated with patriarchal or male-dominated structures where studies underscores a correlation between societies marked by male dominance and elevated rates of teenage pregnancies (Madise, Zulu, & Ciera, 2017). Observations made by Kwasi (2018) further elucidate that in those societies exhibiting hierarchical arrangements, granting men primacy in decision-making processes and marginalizing the involvement of women, family discord tends to arise, with adolescents bearing the brunt of parental conflicts. This familial turbulence, compounded by the absence of inclusive decision-making, detrimentally impacts adolescents' moral and social development, potentially fostering low self-esteem (Ahorlu, Pfeiffer, & Obrist, 2015). In seeking refuge from domestic challenges, neglected adolescents may gravitate towards alternative avenues, such as mingling with street youths, thereby heightening their vulnerability to mental health challenges and financial hardships especially exploitation by individuals masquerading as benevolent figures, who ensnare them into activities like prostitution, culminating in unintended adolescent pregnancies and the proliferation of sexually transmitted infections (Cook & Cameron, 2020).

In addition, adolescent pregnancy is significantly impacted by peer influence, as demonstrated by research where peer groups endorsing early sexual activity may normalize risky sexual behaviors and promote them among adolescents (Cook & Cameron, 2020). Similarly, some youths perceive sexual activity as a regular, casual behavior, stigmatizing those who choose abstinence (Ahorlu, Pfeiffer, & Obrist, 2015). Kukundakwe's study in 2021 revealed that positive peer interactions, delayed sexual initiation, and healthy friendships mitigate the risk of teenage pregnancy, while negative peer dynamics, early sexual engagement, and unhealthy friendships heighten the likelihood of teenage pregnancy underscoring the pivotal role of peer pressure in shaping teenage pregnancy rates (Kukundakwe, 2021).

Moreover, inadequate accessibility and affordability of health education or services aimed at preventing unwanted pregnancy are among environmental factors contributing to the rise of adolescent pregnancy. These challenges may stem from structural issues such as inadequate distribution points and the high cost of contraceptives, as well as non-structural factors like political barriers that restrict adolescents' access to comprehensive health education and contraceptive services. Despite adolescents' desire to manage their reproductive health, they may encounter difficulties in obtaining the necessary contraceptives or services, even with the support of their partners and influential individuals (Kukundakwe, 2021). Legal restrictions and policies may further impede access to contraceptives based on age or marital status, while adolescents often lack awareness of contraceptive availability, including where to access them and associated costs (Kwasi, 2018). The barriers presented by expensive services and inaccessible locations disproportionately affect teenagers, who often have limited mobility and financial resources to cover fees and transportation costs (Chandra and Akwara, 2020).

Restrictive laws and policies, particularly in politics, constitute non-structural environmental factors contributing to the rise in adolescent unwanted pregnancies. For instance, mandated waiting periods have been associated with increased occurrences of unwanted pregnancies among teenagers with research indicating that policies limiting abortion access may exacerbate teen pregnancy rates in this demographic (Coles et al., 2018). Furthermore, adolescents often face barriers to contraception access and utilization due to restrictive laws and policies which may restrict contraceptive distribution based on factors like age or marital status thus hindering adolescent contraceptive use significantly (Chandra and Akwara, 2020). Additionally, the reluctance or prejudice of healthcare workers in acknowledging adolescents' sexual health needs further compounds the issue of unwanted teenage pregnancies (WHO, 2024).

2.2 Knowledge, Attitude, and Practice (KAP) Associated with Unwanted Pregnancies among Teenagers

Knowledge, attitude, and practices (KAP) related to pregnancy prevention significantly influence the rise of unwanted pregnancies among adolescents. KAP acts as a proximate factor towards unwanted pregnancies. This is mainly through factors such as awareness and stance toward contraceptives, media impact, and behavioral patterns like the age of sexual initiation and engagement in risky sexual activities (Ayodeji, Njoku, & Odunola, 2013). Insufficient familiarity with and utilization of contraceptives represent notable contributors to pregnancies among women of reproductive age usually from a combination of limited expertise in contraceptive methods and constrained access to family planning resources, resulting in a substantial portion of women experiencing unmet contraceptive needs (Elul, 2019). Effectively employing

contraceptives and curbing teen pregnancies are imperative strides toward realizing sustainable development objectives including better health and well-being across all demographics, fostering gender equality and women's empowerment, facilitating universal access to quality education, and alleviating poverty (WHO, 2024). Nevertheless, numerous women are swayed by misconceptions and myths regarding the adverse effects and repercussions of contraceptive methods, which subsequently undermines their usage (Mardi et al., 2018). Furthermore, a pronounced contrast in contraceptive utilization exists between adolescent girls and adult women where adolescents, in particular, exhibit a lower propensity to utilize contraceptives, primarily due to inadequate knowledge or experience and a lack of autonomy in decision-making processes (Mardi et al., 2018).

Moreover, sexual practices and media influence are other considerable factors. Coles et al. (2018) observed that teenagers worldwide often initiate sexual activity before marriage or commit relationships, sometimes at a young age (Coles et al., 2018). In response, UNICEF has suggested establishing the legal age for consensual sex at 18 years but despite such recommendations, many youths in various countries persist in engaging in unprotected sex, disregarding age limits, including in Rwanda (Elul, 2019). For instance, in Nigeria, early initiation into sexual activity contributes significantly to the high rates of teenage pregnancy, increased instances of adolescents engaging in unprotected sex, having multiple partners, experiencing unintended pregnancies, and undergoing unsafe abortions (Hust et al., 2018). Furthermore, teenage marriage is a notable factor influencing adolescent pregnancy rates in Nigeria where it was found that married adolescents have a higher probability of becoming pregnant compared to their unmarried counterparts (Alukagberie et al., 2023).

Regarding media influence, although it may reinforce harmful stereotypes and encourage unsafe sexual practices, it also plays a crucial role in spreading reliable information and fostering beneficial societal standards (Coppens, 2014).

2.3 Conceptual Statement

Even though most studies in other countries have demonstrated how the prevalence of unwanted pregnancies among teenage girls is closely associated with socio-cultural and religion beliefs factors, socio-economic factors, there is a need to demonstrate how KAP, knowledge, attitude and practices (KAP) is associated with teenage pregnancy in the study area (Figure 2.1).

2.4. Conceptual framework

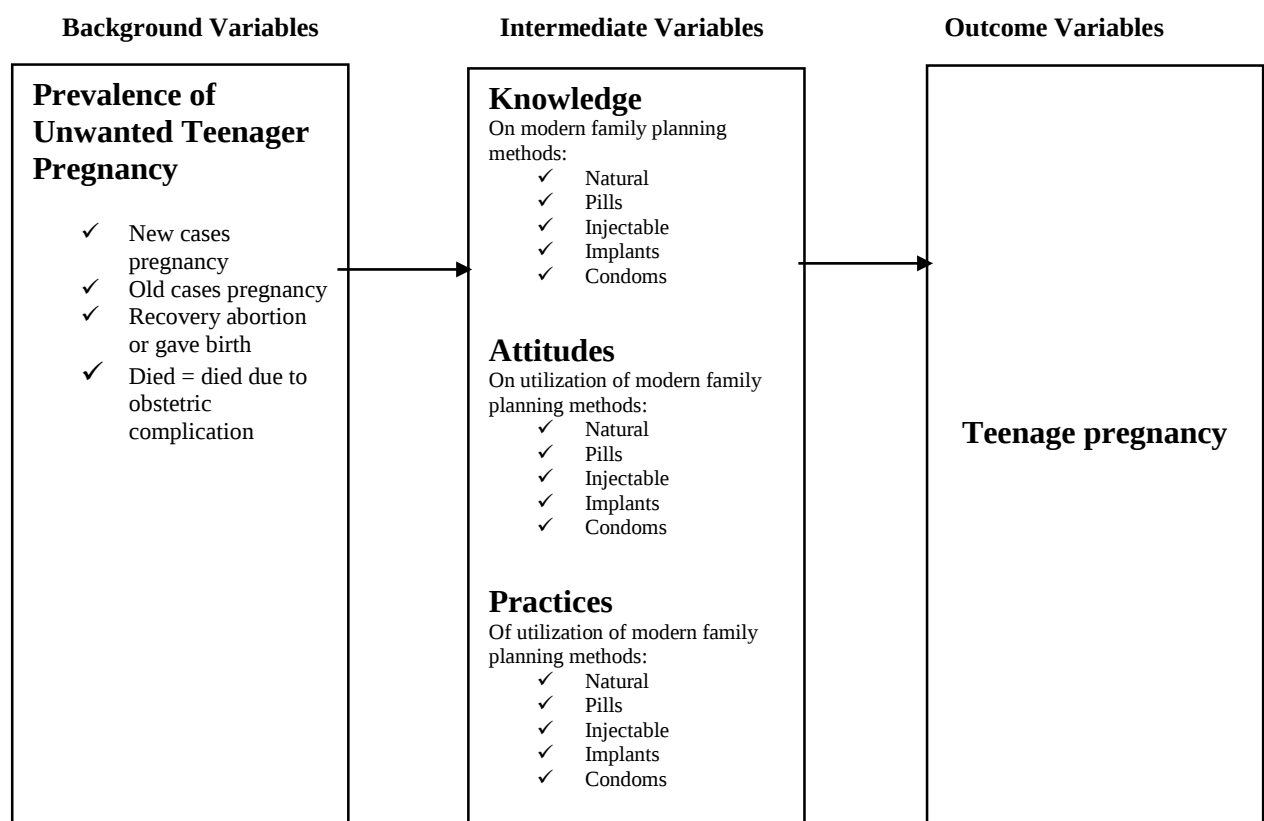


Figure 2-1. The conceptual framework of the Study. Source Silali (2025)

3. METHODS

3.1 Study Design

This study adopted a descriptive cross-sectional research design, integrating both quantitative and qualitative components to analyze factors associated with unwanted adolescent pregnancies. The design allowed simultaneous assessment of key variables, including independent variables such as socio-cultural influences, socio-economic status, environmental factors, religious beliefs, and adolescents' knowledge, attitudes, and practices. The dependent variable was the occurrence of unintended pregnancy among adolescent girls aged 15–19 years. By examining these variables at a single point in time and supplementing them with retrospective data, the study generated a comprehensive understanding of how these determinants interact and contribute to adolescent pregnancies within the Kibagabaga Hospital catchment area.

3.2 Study Area

The location of this study is Kibagabaga Level II Teaching Hospital, a public hospital located in Gasabo district, Rwanda. Gasabo district, situated in Kigali city, spans around 430.3 square kilometers and comprises 15 sectors. As of 2020, Gasabo's population was 677,000, representing 45% of Kigali City's population and 4.4% of Rwanda's total population. Women constitute 51.6% of the population, with a gender ratio of 106 females per 100 males, lower than the country average of 111 females per 100 males, ranking Gasabo fifth lowest in this aspect. Additionally, 26% of households in Gasabo are headed by females, with an additional 4% being de facto female-headed due to the absence of a usually present male head (NISR, 2020).

Kibagabaga Level II Teaching Hospital provides important primary healthcare services such as ANC, immunization, family planning, outpatient care, and other preventive and curative services. Because it serves people from both urban and peri-urban communities, it is an important facility for studying issues like teenage pregnancy and the factors associated with it. This makes it a suitable setting for understanding the prevalence of teenage pregnancy and the influence of KAP among teenage girls attending the study area.

3.3 Target Population

The study population was school going adolescent girls. The target population was adolescent girls' cohorts aged 15-19 years' old who was pregnant at the time of data collection.

3.4. Sample Techniques and Sample Size

3.4.1 Sample Size

We calculated the sample size using Cochran's formula. Since the adolescents aged 15-19 attending Kibagabaga Level II Teaching Hospital are fewer than 10,000 adolescents, the formula was modified to obtain the appropriate study sample size using a finite population adjustment formula. The study population of adolescents aged 15-19 in Gasabo district is 30,000 while those who are pregnant or have begun child bearing is 10% which is 3000 adolescents.

Cochran's formula states:

$$n = (Z^2 pq) / d^2$$

Where n = target population greater than 10,000

Z = degree of confidence (1.96)

p = Proportion of variable of interest in the target population (0.50)

q = 1- p (0.50)

d = the margin of error: 0.05

$$n = (1.96)^2 (0.5) (0.5) / (0.05)^2$$

$$n = 384$$

The sample size was adjusted using Fisher's (1998) finite population correction procedure since the projected number of adolescents who are pregnant or have begun child bearing is 3000 adolescents (less than 10,000). Hence corrected sample size:

$$n_f = n / (1 + (n/N)) \quad n_f = 384 / (1 + (384/3000))$$

Where:

n_f = desired sample size of respondents (corrected).

n = desired sample size of respondents before correction (384)

N = Total estimated and available target population size (3,000)

Hence:

$$N_f = 384 / (1 + \{384/3000\})$$

$$= 341 \text{ respondents}$$

3.4.2 Sampling Technique

The sampling technique was purposive sampling for primary respondents during the 3 months of data collection (October 2024 to January 2025) and retrospective for secondary data collection for the last 5 years (January 2019 to December 2023). We used non-probability sampling (purposive) because the cases were rare to find at the hospital due to government control and restriction. The retrospective form was used because the hospital had already recorded the data for over 5 years.

3.4.3 Inclusion Criteria

Aged 15-19, pregnant at the time of data collection

3.4.4 Exclusion Criteria

Dissent, incomplete records, health status non favorable for responding

3.5. Research Instruments

This study's data collection process used both qualitative and quantitative tools to gain complete insights into determinants of health education to reduce the prevalence of unwanted adolescent pregnancy among adolescents visiting Kibagabaga Level II Teaching Hospital. We used a semi-structured questionnaire for surveys/quantitative research, whereas we used FGDs and KIs for interviews for qualitative research.

3.6 Piloting Study

A pilot study to test research instruments was conducted at Muhima District Hospital. This study involved recruiting 34 adolescents visiting the hospital, representing approximately 10% of the target sample size for the main study. Given the pilot study's limited scope and the need for quick recruitment, participants were selected using convenience sampling techniques. The pilot study aimed to achieve several objectives: to assess the clarity and comprehensibility of the survey questionnaires, to test the reliability of the data collection methods, and to determine the feasibility of participant recruitment and retention. Feedback from both participants and field researchers was used to refine the study tools, address any ambiguities or misunderstandings, and enhance data collection procedure.

3.7 Testing for Validity, Reliability and Establishment of Trustworthiness

A pilot test of the survey was carried out with a segment of the target population to confirm its reliability and pinpoint any unclear, inconsistent, or ambiguous items. Cronbach's alpha was computed from the pilot test responses to evaluate internal consistency, with a value of 0.70 or above signifying strong reliability (Bolarinwa, 2015).

Ensuring the validity of research instruments was crucial for collecting accurate data. Content validity was verified through expert evaluations and consultations with stakeholders to ensure thorough coverage of the research subject. Construct validity was assessed using factor analysis or confirmatory methods to ensure the survey effectively measured the key dimensions associated with health education determinants, to reduce unintended teenage pregnancies among adolescents attending Kibagabaga Level II Teaching Hospital.

3.8 Data collection methods and procedures

This study at Kibagabaga Level II Teaching Hospital encompassed several phases of data collection to gather detailed information from adolescents. Upon obtaining ethical approval, researchers piloted the survey tools to ensure they were clear and reliable. Trained data collectors then conducted structured interviews with selected participants, either in person or electronically, according to their preferences. The survey covered topics such as demographic information, socio-cultural and socio-economic factors, environmental and religious impacts on unintended pregnancies, and adolescents' knowledge, attitudes, and practices regarding pregnancy. Additionally, secondary data from the previous five years were reviewed to complement the quantitative data. To capture qualitative insights, in-depth interviews or focus group discussions were held with some participants. The research process strictly followed ethical guidelines to ensure confidentiality and voluntary

participation. Detailed documentation of the data collection was maintained to ensure transparency, reproducibility, and the possibility of future follow-up studies.

3.9 Data Analysis Techniques and Presentation

Data was managed by the statistical package for social sciences version (SPSS) 25. The graphs were presented using Excel and SPSS output to demonstrate charts like bar graphs, histograms, and pie charts. Analysis was conducted through cross-tabulation of descriptive and inferential statistics.

3.10 Ethical considerations

Ethical approval of the proposal was sought from MKU School of Postgraduate Studies, and ethical clearance was obtained from both MKU and Kibagabaga Level II Teaching Hospital.

4. RESULTS AND FINDINGS

4.1. Demographic Profile

A total of 341 adolescents participated in the quantitative component of this study. All respondents were female, aged between 15 and 19 years, informed consent was given by the senior teacher of the respective schools, and were pregnant at the time of data collection. As illustrated in figure 4.1, the mean age of participants was 17.11 years, while the modal age was 17 years, representing 29.6% of the total sample. The least represented age group was 19 years (11.7%).

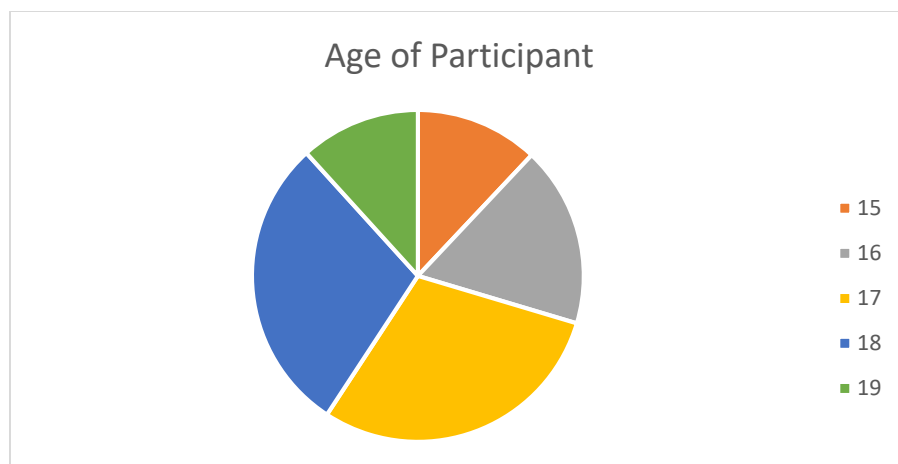


Figure 4-2. Distribution of age stratification for teenager pregnant participants.

The results opened that majority of pregnant 48% (165) respondents were in primary section and least 5.3% (18), teenager pregnant was realized at upper secondary, demonstrate need of school counselling and resilient methods at primary compared on upper on sexual reproductive health.

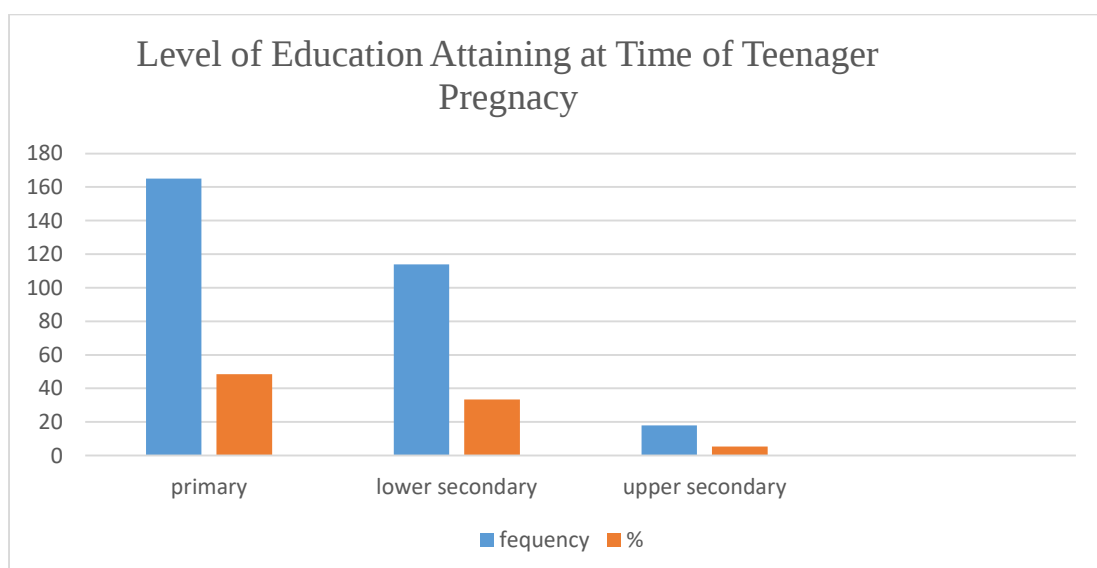


Figure 4-3. Level of education attaining at time of Teenager pregnancy

The results opined that majority of respondents, 79.2% (270), Christian (comprising Catholic, Protestant, and Pentecostal denominations) and the least 20.8% (71) were Muslim. This is consistent with the major religious denomination countrywide, which is Christianity.

4.1. Prevalence of Unwanted Pregnancies among Teenagers at the study site

The study opined that the prevalence of unwanted pregnancy in the district in only 31 (9.18%), with RR (0.01, 0.918), signifying the government's protective roles on regular counseling on sexual reproductive education among school going teenager cohort in the country.

Similarly, a key informant emphasized institutional and community-level solutions:

"We have seen the number of pregnant adolescents increasing from 2019 to 2021. However, there was a slight decrease in 2022 and 2023 even though the decrease is not significant. Kibagabaga Hospital oversees 16 health centers and received patients from there. To decrease the numbers of adolescent pregnancy, I would suggest a room for youth or Icyumba cy'urubiruko served by a trained nurse or midwife who would be providing sexual reproductive health (SRH) services and information. In addition, I would encourage outreaches to visit adolescents in schools to teach them SRH and those who need services be referred to the nearest health centers. On policy making level, to reduce teenage pregnancy, I would advise improving in SRH education by trained people, empowering youth clubs and support in job creations and poverty reduction hence reduction in temptations of sex for material things and encouraging youth to adopt family planning programs than just abortion programs owing to heavy consequences in the later." KII held on October 25, 2024.

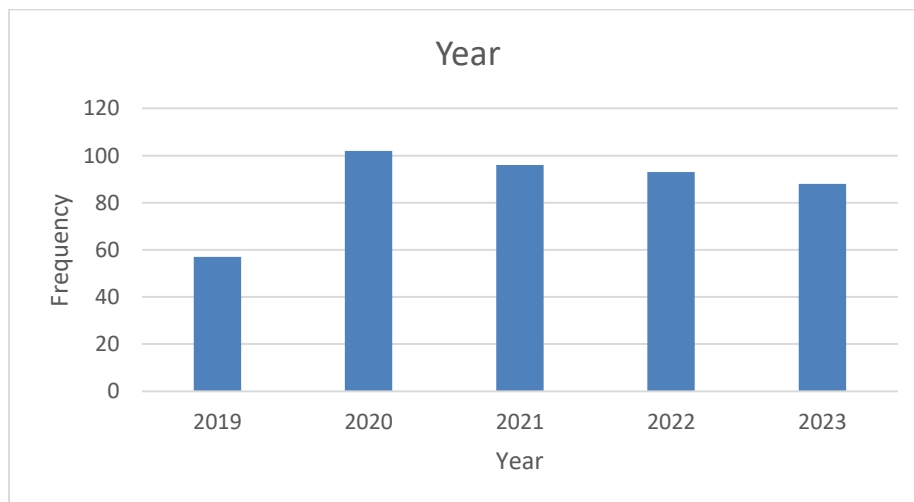


Figure 4-4. Distribution of teenage pregnancy for the past 5 years in the study area

The study demonstrated that out of 436 teenagers pregnant recorded in the last 5 years, only 7.1% (31) were married, while majority were single (92.9%) 405. In educational attainment, 41.8% (182) had completed lower secondary school after delivery, followed closely by 40.6% (177) who had only finished primary education, reflecting a notable educational gap. A smaller proportion 5.1% (23) had no formal education, while the remainder had completed upper secondary schooling.

The study indicated that adolescent pregnancies remain a significant concern at Kibagabaga Level II Teaching Hospital, reflecting broader national trends. The predominance of pregnancies among unmarried adolescents highlights the vulnerability of this group to risky sexual behaviors and insufficient protective measures. Limited educational attainment among pregnant adolescents further emphasizes the link between lower schooling levels and increased susceptibility to unintended pregnancies, consistent with previous studies showing that education serves as a protective factor by enhancing awareness and decision-making regarding sexual and reproductive health. These findings suggest that interventions should focus not only on access to reproductive health services but also on strengthening educational opportunities and comprehensive health education for adolescents, particularly in urban settings where exposure to risk factors may be higher.

2 Knowledge, Attitude, and Practice (KAP) Associated with Unwanted Pregnancies among Teenagers

The study opined that only 94 (30.3%) of the respondents identified condoms as the method they were most familiar with followed by oral contraceptive pills (17%) and injectable (15.1%). However, awareness of long-acting reversible contraceptives (LARCs) such as implants (4.1%) and emergency contraceptive pills (6.3%) was notably low highlighting a

substantial information gap that may increase vulnerability to unwanted pregnancies (Table 4.1). Notably, most respondents were getting information on sexual reproductive health from media (TV, radio, newspaper) and internet/websites at 51% and 48.1% respectively (Table 4.2).

Table 4-1. Contraceptive methods known by adolescents in study area.

Contraceptives	Response		
	N	Percent	Percent of Cases
Injections	142	15.1%	41.6%
Pills	160	17.0%	46.9%
Condoms	285	30.3%	83.6%
Implants	39	4.1%	11.4%
Vasectomy	66	7.0%	19.4%
Periodic abstinence	82	8.7%	24.0%
Tubal ligation	53	5.6%	15.5%
Emergency contraceptive pills	59	6.3%	17.3%
Withdrawal method	56	5.9%	16.4%
Total	942	100.0%	276.2%

Table 4-2. Source of SRH information for adolescents at the study site

Source	Response		
	N	Percent	Percent of Cases
Parents	80	9.9%	23.5%
Peers	137	17.0%	40.2%
Healthcare providers	121	15.0%	35.5%
Media (TV, radio, newspapers)	174	21.6%	51.0%
Internet/websites	164	20.3%	48.1%
Family members	78	9.7%	22.9%
Community health events	52	6.5%	15.2%
Total	806	100.0%	236.4%

When asked where they would seek contraceptives if needed, (115), 33.8% of respondents indicated hospitals, and (83), 24.3% mentioned health centers, suggesting the importance of ensuring adolescent-friendly services at these facilities. Other access points included youth centers 74 (21.7%), local shops 51 (15.1%), and pharmacies, 17, (5.1%).

Attitudinal assessments revealed similarly concerning trends. When asked whether it is still necessary to have protected sex if one trusts their partner, 75.7% (258) responded “no.” Moreover, 61.3% (209) considered it shameful for an adolescent to visit a health facility seeking SRH information

Also results opined that, 58.1% (198) believed a girl should not suggest condom use to her boyfriend, while 22.3% (76) were undecided demonstrating deep-rooted cultural and social barriers that perpetuate risky sexual behaviors.

Regarding their practices, as illustrated in Table 4.3, the majority of respondents had their first sexual intercourse at the age 16 (38.7%). Despite relatively high awareness of condoms, only 10.6% (36) reported using them consistently, while 60.7% (207) used them occasionally, and 28% (98) never used condoms.

Table 4-3. Age at Initiation of Sexual Intercourse of the Adolescents in Study Area.

Age	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 15	54	15.8	15.8	15.8
15	80	23.5	23.5	39.3
16	132	38.7	38.7	78.0
17	58	17.0	17.0	95.0
18	9	2.6	2.6	97.7
19	8	2.3	2.3	100.0
Total	341	100.0	100.0	

Regarding the use of emergency contraceptives after unprotected sex, 47.5% (n = 162) reported occasional use, 39.3% (n = 134) never used them, and only 13.2% (n = 45) used them often. Among the 341 pregnant adolescents surveyed, 71.8% (n = 245) conceived from consensual sex, 18.8% (n = 64) were rape victims, 6.5% (n = 22) became pregnant due to forced marriages, and 2.9% (n = 10) resulted from incest. These findings highlight the multifactorial nature of unwanted pregnancies, calling for comprehensive and multidisciplinary interventions emphasizing SRH education, empowerment, and legal protection.

Qualitative insights reinforced these quantitative trends. A participant from a focus group discussion observed:

"I am aware that adolescent pregnancy has been a concern in Kibagabaga, similar to other regions! To address it, it's essential to focus on comprehensive sex education in schools and communities, ensuring that adolescents have access to accurate information about SRH and creating safe spaces for open dialogue about sexuality. Policy makers and the ministry should integrate comprehensive sex education into the national curriculum, training educators on how to address sensitive topics effectively." - FGD held on October 31, 2024.

Overall, the findings underscore a critical interplay between knowledge gaps, negative attitudes, and unsafe sexual practices among adolescents. Addressing these issues demands a comprehensive approach combining accurate SRH education, adolescent-friendly health services, parental engagement, and supportive policy frameworks to effectively curb unwanted pregnancies among adolescents.

The study revealed significant gaps in adolescents' knowledge of sexual and reproductive health (SRH), particularly regarding fertility cycles and effective contraceptive methods. Although most respondents knew about condoms, very few were aware of long-term reversible contraceptive options such as implants and IUDs. These results align with Ayodeji, Njoku, and Odunola (2013), who found that inadequate knowledge and misconceptions about contraception directly contribute to high rates of unintended pregnancy among adolescents. The observed attitudes such as perceiving it as shameful to seek SRH services or discuss sexual matters, mirror findings from Ayalew et al. (2014), who reported that negative perceptions toward SRH education hinder adolescents from accessing necessary information and services. Furthermore, poor sexual practices, including inconsistent condom use and minimal parental communication, align with prior research emphasizing the influence of risky sexual behaviors and insufficient parental engagement in shaping adolescent reproductive outcomes (Aniteye, 2016; Frost, 2016).

Overall, the findings of this study reinforce the multifactorial nature of adolescent unwanted pregnancies, as highlighted in prior literature. However, the study contributes context-specific insights by showing that even in urban or peri-urban areas like Kibagabaga where health services are more available than in rural settings and poor KAP persist as substantial barriers to prevention. This suggests that improving adolescent reproductive health in Rwanda requires a multi-sectoral approach, combining economic empowerment, education, faith-based engagement, and youth-friendly health services to address both structural and behavioral determinants effectively.

5. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The study sought to determine the prevalence of teenage pregnancy and associated knowledge, attitude and practices (KAP) among teenagers attending Kibagabaga Level II Teaching Hospital in Rwanda. Based on the data analysis and discussion, the following conclusions were drawn in direct response to the research questions.

The study concludes that the prevalence of unwanted pregnancies among adolescents at Kibagabaga Level II Teaching Hospital showed an initial increase between 2019 and 2020, followed by a gradual decline from 2021 to 2023. This trend reflects both the rising awareness and partial effectiveness of adolescent reproductive health interventions introduced during this period. However, the persistence of high annual cases indicates that while progress has been made, the current preventive measures remain insufficient. Sustained health education and youth-centered reproductive health programs are essential to achieve a significant and consistent reduction.

The study concludes that insufficient knowledge, negative attitudes, and poor sexual practices among adolescents are major contributors to unwanted pregnancies. Most adolescents rely on peers, media, or the internet for SRH information rather than credible sources such as healthcare providers or parents. Misconceptions about fertility, unsafe sexual behaviors, and inconsistent contraceptive use were widespread. A majority also expressed shame in seeking reproductive health services, reflecting the persistence of stigma. To reverse this trend, there is a critical need for intensified health education programs that promote accurate information, positive attitudes, and responsible sexual behaviors through schools, community initiatives, and health facilities.

5.2 Recommendations

Based on the findings and conclusions of this study, the following recommendations are proposed to strengthen health education interventions and reduce the prevalence of unwanted pregnancies among adolescent girls attending Kibagabaga Level II Teaching Hospital and its catchment health centers.

5.2.1 Recommendations for practice to:

(i) The authorities for implementation

- a. Kibagabaga Level II Teaching Hospital should establish a youth-friendly room (Icyumba cy'Urubyiruko) within the facility, staffed by trained nurses or midwives specializing in adolescent sexual and reproductive health (SRH). This room should ensure privacy, confidentiality, and accessibility while providing counseling, contraceptive education, and SRH services tailored for adolescents. The same model should be extended to the 16 health centers under the hospital's supervision.
- b. Authorities including the hospital and district administration should coordinate regular outreach programs, targeting both in-school and out-of-school adolescents. These activities should focus on SRH education, contraceptive awareness, prevention of early pregnancies, and referral mechanisms, integrating peer educators and school health clubs to sustain impact.
- c. Community-based education initiatives should be spearheaded to engage parents, teachers, religious leaders, and local authorities in addressing cultural and religious barriers, promoting open discussions on sexuality, and highlighting the dangers of early marriage and unprotected sexual activity.

(ii) Service users/ beneficiaries

- a. Adolescents should be encouraged to actively participate in peer education and life skills programs within schools and communities to improve their knowledge, attitudes, and practices regarding SRH.
- b. Young people should be empowered to access SRH services without fear or stigma, utilizing youth-friendly rooms and outreach programs to make informed decisions about contraception and sexual health.

(iii) Other stakeholders

- a. Collaboration with local NGOs, youth cooperatives, and government programs should be strengthened to provide economic empowerment opportunities for adolescents and young women, including vocational training, mentorship, and support for income-generating initiatives.
- b. Community dialogue forums should be promoted to involve healthcare providers, local leaders, and religious institutions in creating supportive environments for adolescents' SRH, aligning reproductive health messages with cultural and ethical norms.

5.2.2 Recommendations for policy

- i. Policies should prioritize adolescent-friendly SRH services and ensure the sustainability of youth-focused interventions across health facilities.
- ii. Health education programs should incorporate behavioral change interventions, life skills training, and peer-led initiatives within national adolescent health strategies.
- iii. A robust health information system should be established to monitor adolescent pregnancies, contraceptive uptake, and program effectiveness, enabling timely evidence-based adjustments in policy and practice.

5.2.3 Recommendations for further research in this field of study

Based on the findings and experiences from this study, the following areas are recommended for further research:

- i. A longitudinal study to assess the long-term effectiveness of health education interventions and youth-friendly services in reducing adolescent pregnancies within Kibagabaga Hospital's catchment area.
- ii. A qualitative study exploring parental and community perceptions toward adolescent sexual and reproductive health education to better understand cultural barriers and enablers.

- iii. An assessment of service delivery gaps in adolescent sexual and reproductive health (SRH) across the 16 health centers under Kibagabaga Hospital to guide policy and program improvements.
- iv. A comparative study between urban and rural health facilities to determine how socio-economic and cultural contexts influence adolescent pregnancy rates and access to SRH services.

REFERENCES

- [1] Abbott P., Sapsford R., and Binagwaho, A. (2017) Learning from success: How Rwanda achieved the millennium development goals for health. *world dev.*1; 92:103–16.
- [2] Ahorlu, C. K., Pfeiffer, C. and Obrist, B. (2015) Socio-cultural and economic factors influencing adolescents' resilience against the threat of teenage pregnancy: a cross-sectional survey in Accra, Ghana. *Reprod Health.* 12(1):117. 23.
- [3] Alukagberie, M. E. et al. (2023) Factors associated with adolescent pregnancy and public health interventions to address in Nigeria: a scoping review. *Reprod Health* 20, 95. <https://doi.org/10.1186/s12978-023-01629-5>. Accessed on May 27, 2024.
- [4] Aniteye P and Mayhew S. (2019) Attitudes and Experiences of Women Admitted to Hospital with Abortion Complications in Ghana. *African Journal of Reproductive Health.* 15(1), 47–56.
- [5] Ansu-kyeremeh, K., et al. (2016) Rural Women's Exposure to Health Messages and Understandings of Health. *Journal of Healthcare Communications.*18. Available at: <https://doi.org/10.4172/2472-1654.100018>. Accessed on May 25, 2024.
- [6] Ayalew, M., Mengistie, B. and Semahegn, A. (2014) Adolescent-parent communication on sexual and reproductive health issues among high school students in Dire Dawa, Eastern Ethiopia: a cross sectional study. *Reproductive health.* Dec;11(1):1-8.
- [7] Ayodeji, J., Njoku, E. O. and Odunola, B. (2013) Factors associate with teenage pregnancy and childbearing in Nigeria. Available at: <https://uaps2015.popconf.org/papers/151306>. Accessed on May 27, 2024.
- [8] Bahati, V. (2013). Rwanda's international Human Rights obligations regarding the right to education for children with disabilities. University of Pretoria.
- [9] Barnet B., Liu J., DeVoe M., Duggan A.K., Gold M.A., Pecukonis E. (2019) Motivational intervention to reduce rapid subsequent births to adolescent mothers: A community-base randomized trial. *Ann. Fam. Med.*7:436–445. Available at: doi: 10.1370/afm.1014. Accessed on May 21, 2024.
- [10] Behuria P. (2018) Learning from role models in Rwanda: incoherent emulation in the construction of a neoliberal developmental state. *new polit econ.*23(4):422–40.
- [11] Birhanu, B. E., et al. (2019) Predictors of teenage pregnancy in Ethiopia: a multilevel analysis. *BMC Public Health.* 19(1):1-0.
- [12] Bolarinwa, O. A. (2015). Principles and methods of validity and reliability testing of Questionnaires used in social and health science research. *Nigerian Postgraduate Medical Journal*, 22(4), 195–201.
- [13] Chandra-Mouli, V. and Akwara, E. (2020) Improving access to and use of contraception by adolescents: What progress has been made, what lessons have been learnt, and what are the implications for action?. *Best practice & research. Clinical obstetrics & gynaecology*, 66, 107–118. <https://doi.org/10.1016/j.bpobgyn.2020.04.003>. Accessed on May 27, 2024.
- [14] Chandra-Mouli, V., Lane, C. and Wong, S. (2015) What does not work in adolescent sexual and reproductive health: a review of evidence on interventions commonly accepted as best practices. *glob health sci pract.*3(3):333–40.
- [15] Coles, M. S., et al. (2018) How are restrictive abortion statutes associated with unintended teen birth?. *The Journal of adolescent health : official publication of the Society for Adolescent Medicine*, 47(2), 160–167. <https://doi.org/10.1016/j.jadohealth.2010.01.003>. Accessed on May 27, 2024.
- [16] Cook, S. M. C. and Cameron, S. T. (2020) Social issues of teenage pregnancy. *obstet gynaecol reprod med.* 30(10):309–14.

- [17] Coppens, J. (2014) Effects of sex education and media on teenage pregnancy. Counselor Education Capstones. 15. Available at: <https://openriver.winona.edu/counseloreducationcapstones/15>. Accessed on May 25, 2024.
- [18] Elul, B., et al (2019) Pregnancy desires, and contraceptive knowledge and use among prevention of mother-to-child transmission clients in Rwanda. AIDS. 23:S19. Accessed on May 25, 2024.
- [19] Enabel (2021) Knowledge, Attitude and Practices study on Adolescents Sexual Reproductive Health. An assessment in seven districts of Rwanda. Enabel [Internet] Available at: <https://www.enabel.be/knowledge-attitudes-and-practices-study-on-adolescents-sexual-and-reproductive-health/>. Accessed on Jan 31, 2024.
- [20] Frost, M., et al. (2016) Accessing sexual and reproductive health care and information: Perspectives and recommendations from young Asian American women. Sexual & Reproductive Healthcare. 10, 9–13. Available at: <https://doi.org/10.1016/j.srhc.2016.09.007> 37. Accessed on May 23, 2024.
- [21] Griggs D., et al. (2013) Sustainable development goals for people and planet. Nature. Mar;495(7441):305–7.
- [22] Kamal, S.M.M., Hassan, C.H., Alam, G.M. and Ying, Y. (2015) Child marriage in Bangladesh: trends and determinants. j biosoc sci.47(1):120–39.
- [23] Kassa, G. M., et al., (2018) Prevalence and determinants of adolescent pregnancy in Africa: a systematic review and Meta-analysis. Reprod Health. 2018 Nov 29;15(1):195.
- [24] Kukundakwe, P. M. (2021) Peer Influence And Teenage Pregnancy Among Adolescents In Secondary Schools. A Case Study of Mbarara Municipality, Uganda. Student's Journal of Health Research Africa, 2(12), 42. <https://doi.org/10.51168/sjhrafrica.v2i12.68>. Accessed on May 27, 2024.
- [25] Kumar, M., Huang, K.-Y., Othieno, C., Wamalwa, D., Madeghe, B., Osok, J., . . . McKay, M. M. (2018). Adolescent pregnancy and challenges in Kenyan context: Perspectives from multiple community stakeholders. Global Social Welfare, 5(1), 11-27.
- [26] Kwasi F. A. (2018) Economic structure, growth, and evolution of inequality and poverty in Africa: an overview. j afr econ. 2018 jan 1;27(1):1–9.
- [27] Lawther I. (2017) Why African countries are interested in building agricultural partnerships with China: lessons from Rwanda and Uganda. third world.38(10):2312–29. 20.
- [28] Madise, N., Zulu, E. and Ciera, J. (2017) Is poverty a driver for risky sexual behavior? Evidence from national surveys of adolescents in four African countries: original research article. African journal of reproductive health. 11(3), 83-98. Available at: <https://doi.org/10.2307/25549733>. Accessed on May 25, 2024.
- [29] Mardi, A., et al. (2018) Factors influencing the use of contraceptives through the lens of teenage women: a qualitative study in Iran. BMC Public Health 18, 202. <https://doi.org/10.1186/s12889-018-5116-3>. Accessed on May 25, 2024.
- [30] Mayor, S. (2020). Pregnancy and childbirth are leading causes of death in teenage girls in developing countries. BMJ (Clinical research ed.). 328(7449), 1152. Available at: <https://doi.org/10.1136/bmj.328.7449.1152-a>. Accessed on May 27, 2024.
- [31] Mbeba, R. M. et al. (2018) Barriers to sexual reproductive health services and rights among young people in Mtwara district, Tanzania: a qualitative study. Pan African Medical Journal.13 (Supp 1), 1–6.
- [32] Ministry of Health (2015) Rapid Assessment on SRH programs, services and policy issue in Rwanda. Ministry of Health. Available at: https://pdf.usaid.gov/pdf_docs/pa00j35h.pdf. Accessed on Jan 30, 2024.
- [33] National institute of statistics of Rwanda (2015) Rwanda Demographic and Health Survey 2014-15: Final report. NISR. Kigali, Rwanda.2016. 615 p. 19.
- [34] National Institute of Statistics of Rwanda (2020) Rwanda Demographic Health Survey 2019-20. Accessed on April 17, 2024.
- [35] Nduhuye, F., Kubana, E., Matutina, S., Mwesigye, D., Munyaneza, A., & Nyirazinyoye, L. (2024). The factors associated with teenage pregnancy among young women aged between 15 and 19 years in Rwanda: a retrospective cross-sectional study on the Rwanda Demographic Health Survey 2019-2020. Frontiers in reproductive health, 6, 1453933. <https://doi.org/10.3389/frph.2024.1453933>

- [36] Neal S, Matthews Z, Frost M, Fogstad H, Camacho AV and Laski L. (2012) Childbearing in adolescents aged 12–15 years in low resource countries: a neglected issue. New estimates from demographic and household surveys in 42 countries. *Acta obstetricia et gynecologica Scandinavica*. 2012 Sep;91(9):1114-8.d.
- [37] Neal, S. E., Chandra-Mouli, V., & Chou, D. (2015). Adolescent first births in East Africa: disaggregating characteristics, trends and determinants. *Reproductive health*, 12(1), 13.
- [38] Sally Effie, O. (2015). Why does female genital mutilation persist? Examining the failed criminalization strategies in Africa and Canada.
- [39] Silali, (2025), *Current Progress in Arts and Social Studies Research* Vol. 8, 30 December 2024, Page 35-57 <https://doi.org/10.9734/bpi/cpassr/v8/3458>
- [40] Svanemyr, J., Scolaro, E., Chandra-Mouli, V., Blondeel, K., & Temmerman, M. (2013). The contribution of laws to change the practice of child marriage in Africa. InterParliamentarian Union, Geneva.
- [41] Umozurike, U. O. (1983). The African Charter on human and peoples' rights. *American Journal of International Law*, 77(4), 902-912.
- [42] World Health Organization (2024). Adolescent pregnancy. WHO. Geneva. Available at: <https://www.who.int/news-room/fact-sheets/detail/adolescent-pregnancy>. Accessed on May 27, 2024.
- [43] World Health Organization (2015). Global health estimates: deaths by cause, age, sex, by country and by region, 2000–2015. WHO. Geneva.
- [44] World Health Organization (2022) Adolescent health in South-East Asia Region 2022. WHO [Internet]. Retrieved from: <https://www.who.int/southeastasia/healthtopics/adolescent-health> Accessed on April 14, 2024.
- [45] Yadufashije, D., Sangano, G. B., & Samuel, R. (2017). The Study of Factors Influencing Teenagers Pregnancy in Africa. *International Journal of Interdisciplinary Innovative Research & Development (IJIIRD)*, ISSN.
- [46] Yakubu I and Salisu WJ. (2018) Determinants of adolescent pregnancy in sub-Saharan Africa: a systematic review. *Reproductive health*. 2018 Dec;15(1):1-1.

DISTRIBUTION BOUNDARIES OF GASABO DISTRICT

