

## Governance and Implementation Gaps in Adolescent Sexual and Reproductive Health Education and Services: Perspectives of Adolescent Girls and Policy Implementers in Tiko Health District, Southwest Cameroon

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**Abstract** The strive toward achieving adolescent girls' sexual and reproductive health empowerment (SRHE) cannot be without challenges. The study examined governance and implementation gaps in establishing effective operational mechanisms that enhance and sustain adolescent girls' SRHE. The study obtained ethical approval and used a concurrent triangulation and sequential exploratory mixed-methods design, combining quantitative and qualitative approaches within a survey framework. A total of 395 participants took part in the study, comprising 384 adolescent girls and 11 key informants from the traditional, educational, health, social, legal, women and gender empowerment, and NGO's sectors. We analyzed quantitative data using SPSS, while we conducted thematic analysis of qualitative data using ATLAS.ti and NVivo. The findings revealed breaches in adolescent girls' SRHE, ranging from early indulgent sex, transactional sex, unintended pregnancy, school dropout, unsafe abortion, and low perception of contraceptives, with a preference for condoms. Although the socio-political crisis contributed through poverty, displacement, and family disruption, other salient facilitators included inadequate policies and governance, with the education sector still lacking structure and specificity. To improve and sustain adolescent girls' SRHE, stakeholders suggested the refinement of SRH education, notably in secondary school, and the proper structuring and implementation of policies in a multi-sectoral approach while striving to end the socio-political crisis, alleviating poverty and fostering early home-based education, comprehensive / intensified school-based education with effective integration into the curriculum, intensified community-based education and awareness, and controlled information through mass and social media, while intensifying education from early adolescence. The T-SAG-SRHE Model (Tiko–Sexual and Reproductive Health Empowerment of Adolescent Girls Model) is introduced as a context-responsive framework designed to address policy and implementation gaps in adolescent sexual and reproductive health education and services within the Tiko Health District and comparable contexts

**Keywords** Adolescent Girl, Cameroon, Empowerment, Grounded Theory, Pathway, Resource-Constrained Setting, SRH, Southwest.

## Introduction

Adolescence is a period of physical, social, and psychological development for individuals aged 10-19 years [1, 2]. Adolescence falls within the third and the fifth social stage. The third social stage is childhood, characterized by social apprenticeship and novice status in the social ontogenetic stage, whereby the developmental tasks embody recognizing and cognizing social rules, acknowledging self in connectedness, peer group interaction, and work; the fourth social stage is puberty, characterized by social entrée in the social ontogenetic stage, whereby the developmental tasks include recognizing and adjusting to change, performing domestic chores/duties, and participating in rites of passage, if any. The fifth social stage is adolescence, characterized by probation and socialized internship, with developmental tasks including visualizing the self, completing passage training, being poised for adult roles, and serving as a junior partner, as a proto-adult with a high risk of teenage motherhood. The sixth stage, which ends adolescence, is adulthood, with developmental tasks of marriage, responsible parenthood, and productivity /societal reproduction [3]. Adolescence is a time of comprehensive and profound change, including puberty and the development of physical, cognitive, and social maturity [4]. In girls, this period as a specific stage of life requires special attention and consideration [5] because the beginning of adolescence is associated, on the one hand, with the onset of puberty and menstruation and, on the other hand, with the discovery of sexual desires [6, 7]. Misconceptions and wrong health behaviors in the process of menstruation and puberty endanger the health of girls [8].

Moreover, due to the discovery of sexual desires, involvement in high-risk sexual behaviors might occur for many adolescent girls and lead to sexual intercourse, unwanted pregnancy, or sexually transmitted diseases. In Sub-Saharan Africa, adolescents make up a

significant share of the global population, accounting for about 23 percent [9]. Adolescence is a critical age in which people undergo multifaceted sexual development [10]. Sundry health risks and complications secondary to unprotected sexual activity among adolescents have been reported and documented by the World Health Organization [11, 12], for which urgent and prompt interventions are recommended. Recent data indicate that 1.2 billion people worldwide are adolescents aged 10-19 years [13]. Adolescents are slightly at an increased level of vulnerability for different health conditions, including sexually transmitted diseases, when compared to the adult population [14]. Risky sexual behavior is characterized by different hazardous behaviors ranging from premarital sex, multiple sexual partners, to unprotected sex. Such hazardous sexual behaviors are reported to end up with unpleasant health outcomes like HIV/AIDS, unwanted pregnancies, unsafe abortions [15], and other STIs. The program of action adopted at the International Conference on Population and Development (ICPD) in Cairo in 1994 stimulated considerable interest among international agencies, governments, Non-Governmental Organizations, and donors in formulating policies and programs to meet the needs of adolescents in developing countries and protect their rights. Among other recommendations, the Cairo agreement urged governments to provide adolescent girls and boys with the necessary sexual and reproductive health information and services to enable them to deal in a “positive and responsible way” with their sexuality [16]. To support this initiative, the World Health Organization (WHO) developed criteria and standards for implementation in all health care settings that serve young people. Most importantly, Adolescent and Youth Sexual and Reproductive Health and Rights (AYSRRH) services should be accessible, acceptable, equitable, appropriate, and effective [17].

Young people's participation in developing, implementing, evaluating, and advocating for AYSRHR interventions improves their effectiveness [17], so programs should integrate them at different levels and give this participatory approach sufficient attention.

Legal and regulatory policies across governance sectors have integrated aspects of SRH, but in most cases, this is more like patching than structured integration. Similar disparities exist in other conventions and regulations. For instance, although Cameroon is a signatory to the 1989 United Nations Convention on the Rights of the Child, which sets the minimum age for marriage at 18 years, Cameroon's civil code permits girls to marry at 15 years with parental permission and boys at 18 years. However, the country is adopting new procedures to end this harmful traditional practice. It is against this backdrop that Cameroon's new penal code, enacted as law in July 2016, in its section 356, sanctions anyone who compels another to marry before 18 with imprisonment from 5 to 10 years and a fine from 25.000 to 1.000.000 FCFA. Meanwhile, the lack of denunciation prevents assessment of the effectiveness and efficacy of such a measure [9]. Sexual exploitation and abuse violate human rights and are a betrayal of the core values of the United Nations [18]. These rights and any form of discrimination against women are also emphasized in the Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa [19] as adopted in Maputo and by the Penal Code of Cameroon (Ministère de la Promotion de la Femme et de la Famille, 2024). Besides this, several other legal or institutional frameworks protect the rights of young girls and help guide their empowerment toward safe sexual and reproductive lives in Cameroon, as depicted Ref. [20]: Article 5 of Law No. 98/004 on the Direction of Education in Cameroon (1998) includes, among its objectives, family education and the promotion of hygiene and health education. In 2007, Cameroon made an

inter-ministerial decision to introduce family life education, population education, and HIV/AIDS prevention into the curricula. However, no specific legislation recognizes a right to Integrated Sexuality Education (CSE).

Updated in 2009, the 2001-2015 Health Sector Strategy defines national health policy and identifies strategic areas to improve young people's sexual and reproductive lives. Family planning is one of the intervention categories included in the mother and adolescent health sections. The adolescent health component includes the prevention of early and unwanted pregnancies, the prevention of STIs and HIV, and the establishment of reproductive health services adapted to the needs of young people. However, the SRH components are not specifically structured, and their interconnectedness is not established to support comprehensive action and intervention. The 2009 National Youth Policy proposes reducing maternal mortality among young people and, as one initiative, improving family life education. However, it does not extensively address the precursors, response measures, or the interconnections among interventional sectors and stakeholders. As if acting independently, without a structural description of precursors in a sector-based approach and in a proactive enforcement perspective, the Reproductive Health Services Policy (2009) includes a section on the health of adolescents and young people, the objectives of which are: the prevention and management of diseases, dysfunctions related to their sexuality, the reduction of morbidity and mortality rates linked in particular to unwanted pregnancies, early maternity, induced abortions, STIs and HIV & AIDS, and a focus on education on family life and sexuality.

In the same vein, the Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa (African Union, 2003) protects the reproductive rights of women by authorizing medical abortion in cases of sexual assault, rape, incest, and where

the continued pregnancy endangers the mental and physical health of the mother or the life of the mother or the fetus. International, regional, and national human rights bodies and courts increasingly recommend decriminalization of abortion and provision of abortion care to protect a woman's life and health, and in cases of rape, based on a woman's complaint. Some argue that ensuring that laws, even when restrictive, are interpreted and implemented to promote and protect women's health is essential [21]. Unsafe abortion accounts for 13% of maternal deaths, and 20% of the total mortality and disability burden due to pregnancy and childbirth [22]. Almost all deaths and morbidity from unsafe abortion occur in countries where abortion is severely restricted in law and in practice [21]. The National Reproductive Health Program's Strategic Plan (2009) identifies obstacles to implementing the program. These are mainly socio-cultural barriers, the low use of family planning services by young people, the non-existence of structures adapted to their needs, and low levels of contraceptive use. However, the plan highlights the existence of non-governmental organizations or associations working with reproductive health issues of young people, the inclusion of courses on sexuality education in school programs, and the integration of the adolescent health component into the priority programs of the health sector; though globally these actions remain institutionally patchy, without offering a structured multi-sectoral approach to prevention and intervention.

The 100% jeunes' program, which started in 2000, targets young people aged 15-24, aiming to encourage them to adopt responsible sexual behaviors, such as the use of male condoms. Peer educators of the same age have been integrated into information, education, and communication activities. The media also play an important role in awareness, prevention, and promotion activities, but the arena is chaotic. The National Strategic Plan for the Fight Against HIV, AIDS and STIs (2018-2022)

states that the ministries in charge of education will be responsible for integrating information and education on HIV & AIDS into curricula for training students at all levels, as well as interventions for teachers. In 2013, the government mandated that teachers incorporate some form of HIV sensitization into their lesson plans, regardless of the subject they taught. Still, the question now is how comprehensive and structured this is. The 2006 Pedagogical Guide for Family Life Education for primary and secondary education outlines teaching methods and recommendations for addressing Family Life curriculum topics, subdivided into several themes. Similarly, the 2018 primary education curriculum includes learning units on topics such as reproductive health, health education, the human reproductive system, HIV & AIDS, family planning, puberty, and menstrual hygiene. However, it still does not provide a specific framework for where these topics should fit within the curriculum.

The Southwest region, as of December 2023, has 41912 estimated number of people living with HIV (SPECTRUM; a statistical software used by the National AIDs Control Committee). This is coupled with the socio-political crisis in the region, which has brought in a lot of internally displaced persons (IDPs) and has also led to high sexual promiscuity, exposing adolescent girls to a high risk of HIV/AIDS and other STIs. The pathway of adolescent girls to sexual and reproductive health (SRH) empowerment in many sub-Saharan African countries is not without a myriad of hurdles. Still, the main hurdles remain governance and policy. Despite its illegality in Cameroon, induced abortion is still practiced, whereas this is prohibited by the Reproductive Health Services Policy (2009). In 2015, in the obstetrics and gynecologic services in Yaounde, Cameroon, the prevalence of voluntary induced abortion was 26.3% (134/509) globally; 25.6% (65/254) in urban areas and 27.1% (69/255) in rural areas, with excessive bleeding as the main risk [23]. It was

reported that unsafe abortion accounts for 13% of maternal deaths [1], and 20% of the total mortality and disability burden due to pregnancy and childbirth [22]. An early study in Tiko Health District revealed that having multiple sexual partners was a risk factor for the prevalence of teenage pregnancy and further cautioned that a good number of them lack adequate knowledge of comprehensive sexuality education [24], thus posing a major question about the effectiveness of their sexual and reproductive health empowerment.

### **Study Objective**

The study examined governance and implementation gaps in establishing an effective operational mechanism to enhance and sustain adolescent girls' SRHE.

### **Materials and Methods**

#### **Research Design**

This study employed a survey design and, more specifically, a concurrent triangulation mixed-methods approach that combined quantitative and qualitative methods and gathered data from different stakeholders in the initial phase. This design collected qualitative and quantitative data concurrently through a survey process to strengthen the validity of the findings. The second phase followed a sequential exploratory mixed-method design in which, based on trends in the initial findings, the researchers developed an interview guide to capture key informants' general perceptions of the subject matter, including strengths and weaknesses. The quantitative component focused essentially on adolescent girls. For the qualitative component, the study targeted key informants because they are involved not only in policy implementation but also, to some extent, in its conception and development.

#### **Study Area and Setting**

The study was conducted in the Tiko Health District, located in the Fako Division of the Southwest Region of Cameroon. The district

comprises nine health areas and approximately 94 communities, with an estimated population of 104,224 following the 2021 population census [25]. The district delivers health services through a decentralized health system involving district health authorities, health facilities, and community-based health workers (CHWs) who implement CDI (Community-Directed Interventions). Since 2016, the region has experienced a socio-political crisis that poses enormous challenges to implementing frontline health programs and has significantly contracted the economy [26]. Disruption and insecurity have also affected the financial sector, and employment has dropped because of persistent violence and the sharp collapse of major economic sectors and social fabrics [26].

#### **Study Population and Sampling**

The study population included adolescents, household heads, educators, health personnel, and policymakers from various sectors in the Tiko Health District, Southwest Region, Cameroon. Adolescents are central to the study. Still, the individual determinants of their sexual and reproductive life are highly influenced by the other participants included in the study, which contributes to shaping their psychological and socio-economic development. For the quantitative component, we determined a minimum sample size of 410 adolescent girls using the single-population proportion formula, assuming a 95% confidence level, a 5% margin of error, and a prevalence of 50%. For the qualitative component, we purposively and conveniently sampled 15 key informants from the diversified sectors described earlier. We selected health areas and communities through simple random sampling to ensure geographical representation across the district. We conveniently sampled adolescent girls in communities, and those aged below 16 years were at home with parental consent, as required. For the qualitative study, we purposively and conveniently sampled participants.

## **Data Collection Tools and Procedures**

Researchers used a semi-structured questionnaire to collect information from active adolescent girls through a face-to-face approach, after administering the assent form to those aged 16 years and above and the consent form to the parents of those below 16 years. The information included the demographic characteristics, the home environment (socio-economic status, parenting style, support, norms, physical, lifestyle), physical environment and lifestyle, school environment, community and socio-cultural norms, health system (accessibility, youth-friendly services, provider attitudes), legal and policy environment (rights, protection frameworks), conflict and fragility context (Southwest Cameroon crisis), individual mediators, and empowerment dimensions as predictors of sexual and reproductive empowerment, which on its own is appraised under the section labeled SRH empowerment outcomes. The last section consisted of prospects and contraceptives, which is structured in the form of open-ended questions to capture adolescent girls' perceptions of the risks of unsafe sexual life and their suggestions to reduce them. As for the key informants, an interview guide was used.

## **Validity of Data Collection Instruments**

The researchers ensured the validity of the data collection instruments through content, construct, and face validity procedures. A public health research supervisor and a statistician reviewed the instruments to assess clarity, relevance, and alignment with the study objectives. We conducted a pilot study in Molyko and Mile 16 health areas in Buea Health District, which were not included in the final sample, to test comprehensibility, feasibility, and contextual appropriateness. Feedback from the pilot informed refinements to the instruments' wording, response categories, and data collection procedures.

## **Reliability of Data Collection Instruments**

We assessed the internal consistency of the quantitative instrument using Cronbach's alpha coefficient. The reliability coefficients ranged from 0.777 to 0.963, indicating acceptable to excellent internal consistency for adolescent girls. For qualitative tools, expert review using the parallel method and pilot testing enhanced reliability by ensuring clarity and consistent interpretation of questions. We standardized and cross-checked data collection procedures to minimize measurement errors.

## **Ethical Considerations**

The Ethics Committee of the Regional Delegation of Public Health for the Southwest Region granted ethical approval, and the Regional Delegate of Public Health granted administrative authorization, with support from Texila American University. Participants were informed about the study's purpose and procedures before data collection. Participation was voluntary, and respondents could decline or withdraw at any time without negative consequences. All participants provided informed consent before interviews and questionnaire administration. We maintained confidentiality and anonymity by not recording personal identifiers; all collected information was backed up, used strictly for research purposes, and reported in summary form.

## **Data Analysis**

Data from adolescent girls' surveys were collected electronically using tablet devices running the Kobo Collect platform. The electronic tools included skip patterns, validation rules, and range checks to reduce entry errors. The team uploaded completed questionnaires daily to a secure, password-protected server and backed them up regularly. The field supervisor and statistician reviewed submitted forms each day to identify missing data or inconsistencies and ensure data quality. The team audio-recorded key informant

interviews with participants' consent, transcribed them verbatim, and translated them into English where necessary. The research team stored all transcripts and field notes in encrypted folders accessible only to the team. The team analyzed quantitative data using IBM SPSS Statistics version 27. We used descriptive statistics, including frequencies, percentages, means, and standard deviations, to summarize adolescent girls' perceptions. Multiple-response analysis was conducted where applicable. We identified critical predictors of empowerment using Binary and Multinomial Logistic Regression, preceded by bivariate analysis with the Chi-Square test to identify significant associations with the dependent variable. We abstracted qualitative data through thematic analysis using ATLAS.ti and NVivo. Codes were generated from the transcripts and grouped into broader themes, with illustrative quotations and summaries grounded in code-

quotation tables following the positivism paradigm, used to complement the quantitative findings and support interpretation.

## Results

### Socio-demographic Characteristics

A total of 395 participants took part in the study: 384 adolescent girls and 11 key informants. For the adolescent girls, the return rate was 93.7%, and challenges of working in remote areas in this socio-political crisis context contributed to this. For key informants, the return rate was 73.3%, and some felt embarrassed about discussing policy issues related to adolescent SRHE. The overall return rate was 93.8%. Adolescent girls and key informants were well stratified by demographic characteristics, which supported the representativeness and validity of the data (Table 1).

**Table 1.** Socio-Demographic Characteristics of Adolescent Girls

| Variable                          | Category                   | n   | %    |
|-----------------------------------|----------------------------|-----|------|
| <b>Adolescent girls (N = 384)</b> |                            |     |      |
| Type of locality                  | Urban                      | 313 | 81.5 |
|                                   | Rural                      | 71  | 18.5 |
| Age                               | 10–15                      | 191 | 49.7 |
|                                   | 16–19                      | 193 | 50.3 |
| Age of primary partner            | 15–19                      | 61  | 15.9 |
|                                   | 20–29                      | 121 | 31.5 |
|                                   | 30–35                      | 8   | 2.1  |
|                                   | Not yet                    | 194 | 50.5 |
| Source of financial support       | Self                       | 78  | 20.3 |
|                                   | Parent/guardian            | 213 | 55.5 |
|                                   | Romantic partner           | 93  | 24.2 |
| Employment status                 | No employment              | 281 | 73.2 |
|                                   | Formal sector employment   | 32  | 8.3  |
|                                   | Informal sector employment | 71  | 18.5 |
| Age at sexual debut               | 12–15                      | 39  | 10.2 |
|                                   | 16–19                      | 130 | 33.8 |
|                                   | Not yet                    | 215 | 56.0 |
| Number of children                | 0                          | 279 | 72.7 |

|                                                                                                 |                                      |     |      |
|-------------------------------------------------------------------------------------------------|--------------------------------------|-----|------|
|                                                                                                 | 1                                    | 91  | 23.7 |
|                                                                                                 | 2                                    | 14  | 3.6  |
| Marital status                                                                                  | Married                              | 37  | 9.6  |
|                                                                                                 | Single                               | 293 | 76.3 |
|                                                                                                 | Engaged                              | 54  | 14.1 |
| Religion                                                                                        | Traditional religions                | 16  | 4.2  |
|                                                                                                 | Christianity                         | 317 | 82.5 |
|                                                                                                 | Islam                                | 30  | 7.8  |
|                                                                                                 | Do not believe                       | 21  | 5.5  |
| Person primarily in charge of Sexual and reproductive education of the girl child in the family | Father                               | 66  | 17.2 |
|                                                                                                 | Mother                               | 147 | 38.3 |
|                                                                                                 | Both                                 | 171 | 44.5 |
| Parents are alive                                                                               | Dead                                 | 67  | 17.4 |
|                                                                                                 | Alive                                | 317 | 82.6 |
| Person with whom currently living                                                               | Father and mother                    | 152 | 39.6 |
|                                                                                                 | My father                            | 29  | 7.6  |
|                                                                                                 | My mother                            | 45  | 11.7 |
|                                                                                                 | My uncle/aunt/other relative         | 22  | 5.7  |
|                                                                                                 | Family friend                        | 14  | 3.6  |
|                                                                                                 | Alone                                | 122 | 31.8 |
| Principal occupation of parents/guardian                                                        | Unskilled / semi-skilled worker      | 284 | 74.0 |
|                                                                                                 | Skilled worker                       | 100 | 26.0 |
| Highest level of school attained by parent/guardian                                             | Never been to school through primary | 76  | 19.8 |
|                                                                                                 | Secondary and high school            | 127 | 33.1 |
|                                                                                                 | Post-secondary and university        | 181 | 47.1 |
| Perceived status of family                                                                      | Poor                                 | 55  | 14.3 |
|                                                                                                 | Average                              | 294 | 76.6 |
|                                                                                                 | Rich                                 | 35  | 9.1  |
| <b>Key informants (N = 11)</b>                                                                  |                                      |     |      |
| Sex                                                                                             | Male                                 | 6   | 54.5 |
|                                                                                                 | Female                               | 5   | 45.5 |
| Age group                                                                                       | 16–24 years                          | 0   | 0.0  |
|                                                                                                 | 25–54 years                          | 10  | 90.9 |
|                                                                                                 | 55–64 years                          | 1   | 9.1  |

|                    |                     |    |      |
|--------------------|---------------------|----|------|
|                    | ≥65 years           | 0  | 0.0  |
| Level of education | None                | 0  | 0.0  |
|                    | Primary             | 0  | 0.0  |
|                    | Secondary           | 1  | 9.1  |
|                    | Tertiary/University | 10 | 90.9 |

## Adolescent Girls

The distribution of adolescent girls' sample portrayed satisfactory stratification. By locality, urban dwellers were more represented (81.5%), reflecting their larger share of the population, as people mostly fled rural areas to urban areas because of the ongoing socio-political crisis. By age, they were almost equally split between 10-15 and 16-19 years. Almost half of them already had a partner (49.5%). Regarding their source of finance, they were vulnerable: 20.3% relied on themselves and 24.2% on romantic partners, which may have been magnified by their employment status, as most were not employed (73.2%). A good share of them already had sex (44%), with 10.2% falling between 12-15 years. Overall, 27.3% already had children, whereby 12.6% of those aged 10-15 years had a child. Of the adolescent girls, 9.6% (37) were married. In comparison, 14.1% (54) were engaged, and cumulatively 5.2% (10) of the younger ones (10-15 years) were married or engaged, as against 42.0% (81) for the older ones (16-19 years), thus highlighting the risk of early marriage in the study context coupled with early sex previously depicted. As for who primarily handles sexual and reproductive education for the girl child in the family, adolescent girls named both mother and father 44.5% (171), followed by mother 38.3% (147), then father 17.2% (66), alleging the efficacy of a two-parent home. When layered with setting type, fathers intervened more in urban areas, while mothers did so more in rural areas. Almost 17.3% had their parents dead, while only 39.6% were living with both parents, which could enhance their vulnerability. Parents were mostly unskilled / semi-skilled

workers (74.0%), and their home/family status was mostly scaled as average (76.6%). A significant number of parents (19.8%) had never attended school or had only primary education (Table 1).

## Key Informants

Key informants came from diverse offices and institutions, including the regional delegation of public health, chiefdoms, the court or legal system, NGOs, the church, the delegation of social affairs, and the inspectorate of education. They included reproductive health focal points, regional communication focal points, wise women, religious leaders, male traditional leaders, lawyers, NGO coordinators of SRH-related programs, focal persons for reproductive health, and the chief of the Bureau of Pedagogy. They were almost equally shared between males and females. All attained University level, with only one having A-level, indicating a relatively high level of education. Their ages ranged from 30 to 58 years, with most over 40, indicating seniority and substantial life experience and exposure. They also had experience in their area of intervention, with most having 5 years or more. These diversifications in profile, specialization, office, and area of competence, coupled with relatively high life and professional experience, added value to the quality and representativeness of the information (Table 1).

## Addressing Gaps in Governance and Implementation of Adolescent Girls' SRH Empowerment

## Major Sexual and Reproductive Health Challenges Affecting Adolescent Girls

**Table 2.** Major Sexual and Reproductive Health Challenges Affecting Adolescent Girls

| Indicators                                                                                         | Adolescents<br>(N = 384) | Stakeholders<br>(N = 11) | $\chi^2$ -test<br>(P-value) | Evidence                       |
|----------------------------------------------------------------------------------------------------|--------------------------|--------------------------|-----------------------------|--------------------------------|
| Current state of sexual and reproductive health empowerment among adolescent girls is satisfactory | 91.2                     | 27.3                     | 0.000                       | Quantitative<br>Vs Qualitative |
| Risk of teenage pregnancy                                                                          | 28.6                     | 45.5                     | 0.227                       |                                |
| Risk of school dropout                                                                             | 80.7                     | 72.7                     | 0.510                       |                                |
| Risk of sexually transmitted infections (HIV and other STIs)                                       | 70.8                     | 54.6                     | 0.247                       |                                |
| Risk of unsafe abortion                                                                            | 0.0                      | 36.4                     | 0.000                       |                                |
| Risk of gender-based violence (Sexual abuse, rape)                                                 | 40.9                     | 36.4                     | 0.780                       |                                |
| Risk of child marriage                                                                             | 8.3                      | 27.3                     | 0.029                       |                                |
| Risk of transactional sex                                                                          | 20.3                     | 45.5                     | 0.043                       |                                |
| Risk of menstrual health challenges                                                                | -                        | 36.4                     |                             | Qualitative                    |
| Mental health problems/stress and anxiety                                                          | 12.7                     | 36.4                     | 0.022                       | Quantitative<br>Vs Qualitative |
| Awareness of contraceptive                                                                         | 81.8                     | 72.7                     | 0.444                       |                                |
| Willingness to use contraceptives                                                                  | 49.7                     | 45.5                     | 0.789                       |                                |
| Condom as preferred or recommended contraceptive methods                                           | 79.6                     | 27.3                     | 0.000                       |                                |

There was a high discrepancy between adolescent girls' and key informants' perceptions with respect to major sexual and reproductive health challenges affecting adolescent girls. For instance, if adolescent girls generally perceived their current state of sexual and reproductive health empowerment as satisfactory (91.2%), this proportion dropped significantly to 27.3% among key informants. Only key informants highlighted the risk of unsafe abortion, and adolescent girls were unaware of the risk associated with inadequate menstrual hygiene, or maybe they did not perceive it as a priority issue. Condoms were preferred, and adolescent girls highly indicated them as the recommended contraceptive method, while this was not the case with key informants, who advocated for a diversified range of contraceptives. Both categories of

stakeholders acknowledged that though adolescent girls were aware of contraceptives, their willingness to use them was low. They also both agreed on the risk of sexually transmitted infections (HIV and other STIs). However, key informants highlighted the risk of school dropout, and this trend was the same with transactional sex perceived as more critical by key informants, as well as the risk of early marriage and mental health problems (Table 2). Besides teenage pregnancy, poverty also contributed to the under-schooling of adolescent girls: *"Lack of means to be educated"* (Female health care manager). The groups of girls that were mostly vulnerable were out-of-school girls, internally displaced girls, girls with disabilities, rural girls, orphans, girls living in poverty, younger ones, and lazy ones. *"The younger ones, for instance, should*

*not be sent to hawking, and laziness makes older ones more exposed to selling their body” (Male Traditional leader). Key informants argued that factors that foster unsafe abortion were fear of parents and the need to further education “School continuation concern” (Female social affairs counselor), unintended pregnancy, stigma, poverty / financial constraints, limited contraceptive access, inadequate parental care, peer influence, and the business around it, as it was perceived as a source of money for health practitioners “Yes, because there are so many cases, and they mostly advise girls toward that direction because they want to make money; they want to sell their drugs” (Urban male parent).*

Unsafe abortion was a major concern, as key informants were alarmed by the risk of infection, menstrual disorders, and excessive bleeding. They argued that unsafe abortion could be reduced through the creation of an independent center for adolescents and that abortion should not be encouraged. Measures should be put in place to frustrate abortion and encourage abstinence, protected sex before marriage, faithfulness in couples, and teaching them more about their sexuality and menstrual cycle. Community education and sensitization

should be prioritized, alongside campaigns to distribute condoms and place girls on contraceptives. The risk of sexual violence was obvious “*Girls are sexually violated; they have been raped*” (Female health care manager). In a nutshell, forms of violence affecting adolescent girls ranged from sexual violence, rape, emotional abuse, coercion, intimate partner violence, and economic violence. Main drivers of adolescent pregnancy in the district were poverty, knowledge deficit, peer pressure, school dropout, and substance abuse like drugs. Factors contributing to HIV and STI transmission among adolescent girls were generally similar to the factors driving adolescent pregnancy, though emphasis here was placed on inadequate education and poverty. Consequences adolescent pregnancies have on girls’ lives were school dropout, traumatization, low self-esteem or frustration, hindered economic opportunities, and exposure to risks related to abortion that can even lead to death, as emphasized by this quotation: “*Risks of abortion, they can die*” (Female health care manager).

### Home and Family Environment

**Table 3.** Home and Family Environment as Barriers to SRHE of Adolescent Girls

| Indicator                           | Barriers    |              | $\chi^2$ -test<br>(P-value) | Evidence<br>type                  | Quotations                                                                                                                                                                                                                                                                                            |
|-------------------------------------|-------------|--------------|-----------------------------|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                     | Adolescents | Stakeholders |                             |                                   |                                                                                                                                                                                                                                                                                                       |
| Parenting style                     | 44.3        | 63.6         | 0.205                       | Quantitative<br>Vs<br>Qualitative | <i>“The factors that drive them to do unsafe abortion are fear of parents” (Female social affairs counselor)</i>                                                                                                                                                                                      |
| Cultural taboo and religious belief | 26.1        | 63.6         | 0.078                       |                                   | <i>“That cultural belief and some religious denominations that compel the Christians not to do this, not to do that. For them, for a girl to be pregnant is quite a taboo, and this can expose them to unsafe abortion, so those are some of the barriers” (Pedagogic inspector, basic education)</i> |

|                                        |      |      |       |             |                                                                                                                                                                                                                        |
|----------------------------------------|------|------|-------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Parents' lack of knowledge             | 16.7 | 63.6 | 0.000 |             | <i>"Increasing sensitization in the community" (Female health care manager)</i>                                                                                                                                        |
| Parents' fear of embarrassment         | 50.3 | 45.5 | 0.754 |             | <i>"At times when the child does something wrong, they cover" (Female social affairs counselor)</i>                                                                                                                    |
| Time constraints                       | 16.7 | 27.3 | 0.357 |             | <i>"Parents could be too busy" (male traditional leader).</i>                                                                                                                                                          |
| Inadequate proactiveness               | -    | 36.4 |       | Qualitative | <i>"Poor prevention " (male pastor)</i>                                                                                                                                                                                |
| Inadequate communication and education | -    | 27.3 |       | Qualitative | <i>"So, we are not yet at the level where we can freely communicate those things with our daughters. So, we find it very uncomfortable talking about sex with our children" (Pedagogic inspector, basic education)</i> |

Parenting style, cultural taboo and religious beliefs, lack of knowledge, fear of embarrassment, time constraints, inadequate proactive communication and education were barriers inherent to the home and family environment (Table 3). Key informants stressed the need for parents to open up to their adolescent girls and tell them the truth instead of hiding it: *"I think parents should tell them the truth instead of hiding it" (Female health care manager)*. Inadequate parenting was more pronounced in separated homes and homes

where parents were dead *"Especially separate home girls because the mother is somewhere, the father is somewhere, they are having pressure to get money to take care of themselves" (Female social affairs counselor)*. *"Dead parents: I have had a situation where the boy in question and the girl, their parents were all dead" (Female social affairs counselor)*.

### School Environment

**Table 4.** School Environment as Barrier to SRHE of Adolescent Girls

| Indicator                                | Barriers    |              | $\chi^2$ -test<br>(P-value) | Evidence type                     | Quotations                                                                                                                                                                                                                                                                       |
|------------------------------------------|-------------|--------------|-----------------------------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                          | Adolescents | Stakeholders |                             |                                   |                                                                                                                                                                                                                                                                                  |
| Risk of school dropout / under-schooling | 21.5        | 27.3         | 0.646                       | Quantitative<br>Vs<br>Qualitative | <i>"Most of them end up as dropouts" (Female health care manager)</i><br><i>"When they get pregnant, they drop out of school, so they cannot attain the purpose for which they came to school, so they end up dropping out of school" (Pedagogic inspector, basic education)</i> |
| Inadequate implementation                | 50.0        | 81.8         | 0.038                       |                                   | <i>"None" (Male Lawyer)</i><br><i>"Following this, our education</i>                                                                                                                                                                                                             |

|                                                                              |   |  |       |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------------------------------------------------|---|--|-------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| of comprehensive sexuality education in school, no specific topic            |   |  |       |             | <i>includes civics education, which is part of the curriculum. We have health education, which is part of the curriculum, where children are educated on issues related to sex, keeping themselves safe, and avoiding delinquency to prevent sexual abuse. They also cover topics on reproductive organ awareness. They also cover what can cause pregnancy and what can prevent it; these issues are discussed in the classroom. Children are taught this to help them stay safe (interviewer: So, there is no subject on SRH specifically?) No, they are just topics in subjects"</i> |
| Mechanisms that exist to support pregnant schoolgirls and adolescent mothers | - |  | 81.9% | Qualitative | <i>"Very poor" (Pastor)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

Comprehensive sexuality education implementation in schools was generally perceived to be low and inadequate. Although primary school SRH courses were more detailed, secondary school courses were not taught as standalone subjects; instead, they were integrated into other subjects: *"This is taught in other subjects, just in a summarized way within some subjects"* (NGO coordinator, youth adviser). Teenage pregnancy is mostly linked to school dropout and under-schooling, and the vicious circle is that school dropout further exposes adolescent girls to risky sexual behaviors and the related consequences. The topics that were mostly covered ranged from the protection of sexual organs / private parts, menstruation, keeping oneself safe from sexual abuse, prevention of pregnancy, HIV / AIDS, consent, menstrual hygiene, and STIs. Important topics missing ranged from safe internet use, healthy relationships, STIs, contraception, to gender-based violence (Table

4). Teachers were generally perceived as not adequately prepared to provide SRH information and counseling: *"Not very prepared as it is mostly incorporated in other activities"* (Female health care manager); *"Poorly prepared"* (Male Pastor); *"Not prepared"* (Male Lawyer). Stakeholders argued that it will be challenging to have SRH as a sex-differentiation topic because there cannot be a topic on SRH specifically for females or for males because they are mixed: *"It will be challenging for us in public school to make a topic on that specifically for females, because they are mixed"* (Pedagogic inspector, basic education). Several mechanisms were highlighted as supporting pregnant schoolgirls, like the favorable legal context *"Favorable laws which protect pregnancy and extend this to breastfeeding mothers"* (Female health care manager), the social welfare institution *"Social affairs"* (Female health care manager), and encouragement and psychological support

*“Encouragements for them not to feel that they are left out” (Pedagogic inspector, basic education).* However, the overall dynamics were perceived as inadequate or nonexistent: *“Very poor” (Male Pastor).* As for improvements needed in schools to enhance SRH empowerment, key informants recommended that they should enhance the **Community, Culture, and Gender Norms**

subject on moral education to capture more aspects of SRH and overall effective integration in the curriculum, make the environment safer for adolescent girls, enhance SRH education, foster SRH services equipped with professionals/experts, coaching, educative talks and advice, and allocate a specific subject to SRHE.

**Table 5.** Community, Culture, and Gender Norms as Barriers to SRHE of Adolescent Girls

| Indicator                                               | Barriers    |              | $\chi^2$ -test<br>(P-value) | Evidence<br>type                  | Quotation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------|-------------|--------------|-----------------------------|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                         | Adolescents | Stakeholders |                             |                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Gender inequality<br>/ Preference for<br>male authority | 61.5        | 59.1         | 0.872                       |                                   | <i>“Restriction in decision making”<br/>(Female health care manager)<br/>“To serve as next of kin” (Male Pastor)</i>                                                                                                                                                                                                                                                                                                                                                                            |
| Sexuality taboos                                        | 29.4        | 36.4         | 0.616                       | Quantitative<br>vs<br>qualitative | <i>“When a girl is pregnant, you see her<br/>limited by the family not to further any<br/>other thing, so the girl now gets angry<br/>and goes out to fend for themselves, so<br/>it makes them very vulnerable in that<br/>state” (Female social affairs<br/>counselor).</i>                                                                                                                                                                                                                   |
| Traditional<br>practices                                | 25.7        | 27.3         | 0.905                       |                                   | <i>“You know that we Africans have our<br/>own tradition. So, we are not yet at the<br/>level where we can freely communicate<br/>those things with our daughters. So, we<br/>find it very uncomfortable talking about<br/>sex with our children. So, we expose<br/>those girls to vulnerability because we<br/>don’t discuss it with them; we don’t<br/>create awareness in them, and that is<br/>why they are facing this type of<br/>problem” (Pedagogic inspector, basic<br/>education)</i> |
| Child marriage                                          | 8.1         | 18.2         | 0.234                       |                                   | <i>“This early child marriage hinders them<br/>a lot. At times they give up” (Female<br/>health care manager)</i>                                                                                                                                                                                                                                                                                                                                                                               |
| Interculturalism                                        | 12.2        | 18.2         | 0.552                       |                                   | <i>“Forced migration” (Female health<br/>care manager)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Marginalization<br>of pregnant<br>adolescents           |             | 18.2         |                             | Qualitative                       | <i>“When a girl is pregnant, you see her<br/>limited by the family not to do anything<br/>else, so the girl now gets angry and<br/>goes out to fend for herself, so it makes<br/>them very vulnerable in that state”<br/>(Female social affairs counselor)</i>                                                                                                                                                                                                                                  |

|                                                                                   |  |     |  |  |                                                                                  |
|-----------------------------------------------------------------------------------|--|-----|--|--|----------------------------------------------------------------------------------|
| Class distinction<br>(Discrimination<br>between high-<br>and low-class<br>people) |  | 9.1 |  |  | <i>"Class distinction" (Male Lawyer)</i>                                         |
| Stigma                                                                            |  | 9.1 |  |  | <i>"They close up and seek help from<br/>peers" (Female health care manager)</i> |

Gender inequality/preference for male authority, sexuality taboos, traditional practices, interculturalism, marginalization of pregnant adolescents, child marriage, and class discrimination were barriers that hindered the SRH empowerment of adolescent girls. Marginalization of pregnant adolescents in their families increases their SRHE vulnerability, as they are abandoned and must go out and fend for themselves, and this can foster unsafe abortion (Table 5). Key informants emphasized that cultural beliefs that support adolescent girls' SRH empowerment were essentially abstinence: *"No sex before marriage; yes abstinence, they should abstain" (Wise woman*

*traditional leader)*. It was argued that sexuality taboos and stigma prevent adolescent girls from opening up to the indicated people, thus falling prey to misinformation or misorientations from friends: *"They close up and seek help from peers" (Female health care manager)*. Poverty contributed to risky sexual behavior and transactional sex, fostering inadequate provision of needs and hindering education. Homes with a high propensity to induce adolescent girls into risky sexual behaviors were poor homes, separated-parent homes, and homes with dead parents.

### Individual Agency and Empowerment

**Table 6.** Individual Agency as Barriers to SRHE of Adolescent Girls

| Indicator                              | Barriers    |              | $\chi^2$ -test<br>(P-value) | Evidence<br>type                  | Quotations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------|-------------|--------------|-----------------------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                        | Adolescents | Stakeholders |                             |                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Controlled<br>access to<br>information |             | 72.3         |                             | Qualitative                       | <i>All these media, including social media,<br/>should be content-controlled" (Wise<br/>woman, female traditional leader)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| SRH education                          | 14.6        | 45.5         | 0.005                       | Quantitative<br>Vs<br>Qualitative | <i>"It is good to teach young girls those<br/>things to prevent early pregnancies and<br/>diseases" (male traditional leader); "Poor<br/>education" (Female health care manager)<br/>"You know that we Africans have our own<br/>tradition. So, we are not yet at the level<br/>where we can freely communicate those<br/>things with our daughters. So, we find it<br/>very uncomfortable talking about sex with<br/>our children. So, we expose those girls to<br/>vulnerability because we don't discuss it<br/>with them, we don't create awareness for<br/>them, and that is why they are facing this<br/>type of problem" (Pedagogic inspector,<br/>basic education)</i> |
| Economic                               | 23.7        | 54.5         | 0.019                       |                                   | <i>"They can't get their immediate needs"</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

|                                                              |      |      |       |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------|------|------|-------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| empowerment                                                  |      |      |       |  | <p><i>"Lack of necessities" (Male Pastor)</i></p> <p><i>"Poor background" (Male Youth adviser)</i></p>                                                                                                                                                                                                                                                                                                                                           |
| Anxiety/depression                                           | 6.5  | 36.4 | 0.000 |  | <p><i>"A lot of them that I have come across have the mindset of killing themselves; a lot of depression, anxiety; it makes them reserved; they don't even want to open up. It takes a lot for someone who has high acute to talk to them, let them, using shrewd words before they can open up" (Female social affair counselor);</i></p> <p><i>"Anxiety/depression making them not to focus on education" (Female health care manager)</i></p> |
| Health-seeking behavior                                      | 10.7 | 54.5 | 0.000 |  | <p><i>"Some of them deny" (Female health care manager)</i></p>                                                                                                                                                                                                                                                                                                                                                                                   |
| Sexual relationships / Can make informed decision            | 13.6 | 27.3 | 0.197 |  | <p><i>"Very often to the extent of engaging in unhealthy activities" (Female health care manager)</i></p>                                                                                                                                                                                                                                                                                                                                        |
| Access to information through digital media and social media | 6.7  | 54.5 | 0.000 |  | <p><i>"Lack of proper information" (Male Pastor)</i></p>                                                                                                                                                                                                                                                                                                                                                                                         |

Inadequate controlled access to information, SRH education and economic empowerment, anxiety/depression, improper health-seeking behavior, questionable sexual relationships or ability to make informed decisions, and access to information through digital and social media, among others, were highlighted in this frame. However, perceptions differed sharply between adolescent girls and key informants (Table 6). Key informants emphasized the inadequacy of SRH education *"They are not knowledgeable, not at all. Like the case of last month, the girl told me that they had sex in January, while the boy said they had sex by November or last year. So, the pregnancy was about five months and two weeks, and the girl said, "No, mum, it's four months," so when we did further echography and whatnot, we saw that the boy was telling the truth. So, the boy knew more than the girl, and given her age, she falls under the*

*adolescent category, so she didn't know. They don't really know, so I suggest that they should educate them, organize seminars to teach them more about this because they don't really know" (Female social affairs counselor).* Regarding health-seeking behavior, some stakeholders perceived reluctance, as some adolescent girls shy away from services, and this could be magnified by lack of knowledge about SRHE mechanisms and the opportunities offered *"Lack of knowledge" (Male Lawyer).* As argued by a social affairs counselor, *"Many adolescent girls have the mind of killing themselves, a lot of depression, anxiety; it makes them be reserved; they don't even want to open up. It takes a lot for someone who has high acute anxiety to talk to them, let them, using shrewd words before they can open up (social affairs counselor).* Anxiety and depression were also perceived as hindering

their education. Peer influence, “*Very often to the extent of engaging in unhealthy activities*” (Female health care manager), and exposure to inadequate information, “*Lack of proper information*” (Male Pastor), could mislead adolescent girls. Factors enhancing girls’ confidence and self-efficacy in making informed SRH decisions were education with particular emphasis on the participation of the family “*When the family is there, they educate them and they then have self-confidence and it help them to take care of themselves*” (Female social affairs counselor); economic empowerment “*At times they lack money, they cannot afford their needs and this makes them to lose confidence. So, if the family helps them trained to do something, it will help then regain confidence*” (Female social affairs counselor), and the belief that giving chance to adolescent

girl to further her studies will enhance her self-esteem “*At times, when the family allow them to further their education, it makes them to regain confidence*” (Female social affairs counselor). Barriers to reporting sexual violence and care-seeking were lack of knowledge, lack of adequate follow-up of the victim to ensure adequate recovery, fear of opening up, stigmatization, and fear of revenge from the perpetrator of sexual violence if exposed. Protection mechanisms could be strengthened by organizing a clear referral pathway, educating parents through seminars, encouraging them to talk more with their girls, educating parents to open up, stopping indecent dressing as it can enhance sexual appetite in men, and relying on NGOs' support.

### Health System and SRH services

**Table 7.** Health System and SRH Services as Barriers to SRHE of Adolescent Girls

| Indicator                                         | Barriers    |              | $\chi^2$ -test<br>(P-value) | Evidence<br>type                  | Quotation                                                                                                                                                          |
|---------------------------------------------------|-------------|--------------|-----------------------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                   | Adolescents | Stakeholders |                             |                                   |                                                                                                                                                                    |
| Effectiveness of current prevention interventions |             | 54.5         |                             | Qualitative                       | <i>“Not very effective” (Female health care manager)</i>                                                                                                           |
| Provider attitude and confidentiality             | 16.9        | 40.8         | 0.040                       | Quantitative<br>Vs<br>Qualitative | <i>“Most often they are not on seat or are irregular” (Female health care manager)</i>                                                                             |
| Availability of referral pathways                 | -           | 45.5         |                             |                                   | <i>“By organizing a clear referral pathway” (Female health care manager)</i>                                                                                       |
| Availability of health facilities                 | 16.8        | 27.3         | 0.359                       |                                   | <i>“In Tiko health district, the health facilities are there except that the client does not want to come to the health facility” (Female health care manager)</i> |
| Effective integration                             | 16.8        | 27.3         | 0.362                       |                                   | <i>“Integrated with health packages for health facilities” (Female health care manager) [positive quotation]</i>                                                   |
| Accessibility                                     | 16.4        | 18.2         | 0.874                       |                                   | <i>“Accessibility to SRH</i>                                                                                                                                       |

|      |   |      |  |             |                                                                                                     |
|------|---|------|--|-------------|-----------------------------------------------------------------------------------------------------|
|      |   |      |  |             | services for adolescent girls within the country” (Female health care manager) [positive quotation] |
| Cost | - | 18.2 |  | Qualitative | “Cost” (Female traditional leader) [negative quotation]                                             |

Hurdles to the health system contribution to SRH of adolescent girls ranged from the ineffectiveness of current prevention interventions, inadequacy of provider attitude and confidentiality, inadequate availability of referral pathways and health facilities, ineffective integration, accessibility, and cost (Table 7). Challenges in accessing adolescent-friendly SRH services ranged from confidentiality, provider attitude, cost, and distance. Overall, these challenges were perceived to a very low extent, except for provider attitude and confidentiality. The health system was mostly challenged by complications following unsafe abortion “*Management of complications*” (Male Lawyer). Key informants generally argued that the health system needed much more to strengthen its capacity to foster SRH

empowerment among adolescent girls: “*Much is still to be done*” (Female health care manager). Referral pathways were available, though inadequate, and helped in handling sexual violence survivors, pregnant adolescents, and girls requiring psychosocial support. They suggested creating an independent center for adolescents “*Creation of an independent center for the adolescents*,” (female health care manager). Barriers to post-abortion care were cost and trauma: “*Sometimes it can lead to severe trauma, so we have to call the family to counsel them, to explain to them why their child had to behave like that, that they cannot throw the child*” (Female social affairs counselor). Availability of health facilities, effective integration, accessibility, and cost were not major concerns.

## Conflict, Displacement, and Humanitarian Context

**Table 8.** Conflict, Displacement, and Humanitarian Context as Barriers to SRHE of Adolescent Girls

| Indicator                                  | Barriers    |              | $\chi^2$ -test (P-value) | Evidence type               | Quotations                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------|-------------|--------------|--------------------------|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                            | Adolescents | Stakeholders |                          |                             |                                                                                                                                                                                                                                                                                                                                                                                                               |
| Displacement has increased vulnerabilities | 82.0        | 100          | 0.122                    | Quantitative Vs Qualitative | “ <i>These internally displaced people are here because we have this crisis that is still going on and has not yet been resolved, so we have this situation that has affected so many girls who have been displaced from their original homes. So, because of the displacement from their original homes, they come to new areas, so they are forced to do things that are not comfortable, maybe because</i> |

|                                                                                                                                                   |      |      |       |  |                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------|------|------|-------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                   |      |      |       |  | <i>they have lost their parents because of the war, so that makes them very, very vulnerable. So, you find some houses where they are not with their parents; they live with relatives, so they might not get the treatment they are supposed to have. Some of them are exposed to hawking, and through that hawking they might be exposed, mostly the younger ones” (Pedagogic inspector, basic education)</i> |
| Displacement, change in lifestyle, interculturalism and exposure to risky SRH behaviors                                                           | 84.6 | 63.6 | 0.061 |  | <i>“People moving from where they are to a place that they are not used to can affect them in one way or the other” (Female health care manager)</i>                                                                                                                                                                                                                                                            |
| Hardship and risky sexual behaviors                                                                                                               | 82.6 | 72.7 | 0.397 |  | <i>“Plunged them to hardship” (Female health care manager)<br/>“Let us say maybe a few people were living in a house, maybe two, and you are now ten of you, and maybe you don’t have the finance; this can lead to hardship” (Female health care manager)</i>                                                                                                                                                  |
| Chaotic environment/neighborhood, promiscuity, sexual exploitation / transactional sex, teenage pregnancy, lawlessness and risky sexual behaviors | 79.9 | 63.6 | 0.188 |  | <i>“Sexual violence” (Male Lawyer) “Theft” (Female health care manager)</i>                                                                                                                                                                                                                                                                                                                                     |
| Disruption of education, school dropout, and risky sexual behaviors                                                                               | 80.7 | 54.5 | 0.032 |  | <i>“School dropout” (Male Lawyer)</i>                                                                                                                                                                                                                                                                                                                                                                           |

The socio-political crisis affects adolescent girls’ SRH in a myriad of interconnected ways. Forced migration or displacement has disrupted the social fabric, family organization, and economic viability, creating unforeseen risks and challenges in integrating into a new or unfamiliar environment. Hardship leading to

transactional sex was also highlighted. An increase in household size with inadequate accommodation led to poor sex differentiation, thus increasing the risk of gender-based violence between boys and girls. Among others was sexual exploitation, as men take advantage of the economic vulnerability of adolescent

girls. Key informants and adolescent girls agreed that displacement has increased vulnerabilities as it fostered sexual exploitation, early marriage, school dropout, teenage pregnancy, STIs, and unsafe abortion (Table 8). Interventions implemented to address these displacement-related vulnerabilities ranged from sustaining education and sustained sensitization to subsidies or financial support for the vulnerable and NGO support. With respect to subsidies, this key informant deplored the irregularity *“I think they could give subsidies or financial support to those that are really vulnerable, but looking at the state of the country, those subsidies are not forthcoming, because when it was coming, it could help them do something on their own. For*

*instance, in 2024 it came, and we shared it with those that came to the office, but from 2024 that we applied up till date it has not come, and at times good wishers display themselves; our partners contribute; for instance, when a case comes to our office, we can send to our partner; they help, they help a lot” (Female social affairs counselor).* As for the gaps remaining in interventions, key informants argued that there was still a long way to go *“Naturally, I cannot tell; they still have a long way to go” (Female social affairs counselor),* but emphasized the need for setting a clear referral pathway for management of victims and their protection *“A clear referral pathway for management of victims and their protection” (Female health care manager).*

## Legal, Policy, and Rights Environment

**Table 9.** Legal, Policy, and Rights Environment as Barriers to SRHE of Adolescent Girls

| Indicator                                                                                | Barriers    |              | $\chi^2$ -test<br>(P-value) | Evidence<br>type                  | Quotation                                                                                                                            |
|------------------------------------------------------------------------------------------|-------------|--------------|-----------------------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                          | Adolescents | Stakeholders |                             |                                   |                                                                                                                                      |
| Awareness of rights                                                                      | 6.5         | 63.6         | 0.000                       | Quantitative<br>Vs<br>Qualitative | <i>“Education of girl child”<br/>(Male Lawyer)</i>                                                                                   |
| Adolescent girls’ involvement in planning, implementation, or evaluation of SRH programs | -           | 90.9         |                             | Qualitative                       | <i>“Yes, when we have our activities, we usually call them on the phone through their parents” (Female social affairs counselor)</i> |
| Implementation / multi-sectoral approach                                                 | -           | 90.9         |                             |                                   | <i>“Lack of enforcement”<br/>(Male Lawyer)</i>                                                                                       |

Regarding policies or programs supporting adolescent SRH in Cameroon, key informants argued that policies exist, notably the penal code and regulations in various ministries, but they weakly emphasized implementation and collaboration among offices in line with the multi-sectoral approach (Table 9). Key informants acknowledged that much remains to be done, with diverse and complex challenges, as shown in this quotation: *“We still have a lot to do” (Female social affairs counselor).* However, a key informant emphasized that the

existence of women empowerment centers indicates that something is being done. Current SRH programs reflect the principles of the Maputo Protocol, primarily through education and awareness for adolescent girls. Adolescent girls’ involvement in planning, implementation, or evaluation of SRH programs was still quite poor. It should also be considered in policy reforms toward strengthening adolescent girls’ SRHE, besides improving sensitization and training more policymakers and implementers, as they

indicated, enhancing follow-up, subsidies, supervision of activities, community collaboration in identifying and reporting violence for investigation, regular and sustained awareness and sensitization at school and community levels, effective communication and dialogue with the adolescents, encouraging the adolescent to open up and to speak out, setting a clear referral pathway for management of victims and their protection, and a goal-oriented approach by setting targets that should be met. At the sector and household levels, key informants recommended effective communication and dialogue with adolescents, encouraging them to open up and speak out, and parental guidance. At the school level, they

emphasized regular, sustained awareness and sensitization, and effective integration into the curriculum. At the community level, they emphasized collaboration to identify and report violence for investigation; sensitization and education; enhancing safer neighborhoods free from promiscuity, substance abuse, and noise pollution, among others; and equipping communities with basic social amenities (Figure 1). At the health system level, the study recommended supervision, staff training, and donating prevention kits or reducing prices. At the policy level, the study recommended refining policies to incorporate adolescents' needs and ensure enforcement.

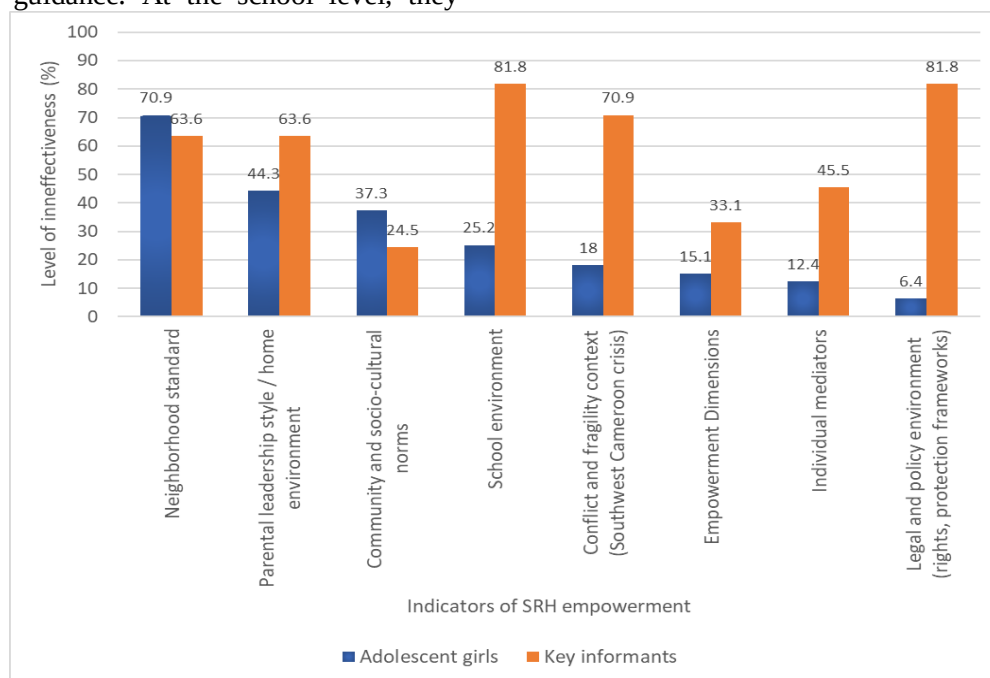


**Figure 1.** Ineffectiveness of Indicators of SRH Empowerment of Adolescent Girls

## Discussion

The study examined governance and implementation gaps in establishing an effective operational mechanism to enhance and sustain adolescent girls' SRHE. These findings highlighted that successful institutionalization of adolescent girls' SRHE is paramount to effectively curb sexuality-related vulnerability inherent to the home environment, school environment, community and socio-cultural norms, legal and policy environment,

conflict and fragility context, individual mediators, and the empowerment dimensions, with particular reference to the healthcare, counseling, and social services. This aligns with the Tanzanian context, where suggestions included youth-supportive policies, establishing school clubs that provided sexual and reproductive health education, and government stakeholders' commitment [27]. This study context unfolded a number of challenges generally interconnected and, by so doing, emphasizing the need for sustainable

strategies that address vulnerabilities stemming from the ongoing socio-political crisis, curbing structural inequalities, traditional barriers, cultural and religious beliefs, and stigma while strengthening health systems, intersectoral cooperation, comprehensive, culturally tailored education, poverty alleviation, economic empowerment of adolescent girls considering their stages of development, and clear and enforced regulatory frameworks which are essential if our vision for equitable and sustainable SRH services should be achieved. These insights offer practical guidance for public policy and program design, particularly for addressing the needs of marginalized adolescent populations [2].

The empowerment dimension considers three major axes: agency, or the ability to make informed SRH decisions; resources related to access to SRH information and services; and achievement, as reflected in the actual utilization of services and healthy behaviors, though these were generally inadequate, unstructured, and poorly interconnected. Previous work emphasized the need for sustainable strategies to address structural inequalities and stigma while strengthening health systems that prioritize quality, equity, and integration, and include accountability mechanisms for users and providers [28]. In this study context, major loopholes included inadequate referral pathways, questionable attitudes among health personnel, and insufficient collaboration with adolescents. While governments have reaffirmed many commitments, policy development and program implementation still fall short of delivering on them. Future success requires increased political will and engagement of young people in the formulation and implementation of policies and programs, along with increased investments to deliver and scale comprehensive sexuality education, health

services that are approachable and not judgmental, safe spaces programs, especially for vulnerable girls, and programs that engage families and communities [29]. Intersectional interaction and collaboration among sectors and stakeholders are needed to develop a multi-level, comprehensive model for empowering adolescent girls [30], and this study context also highlighted this as a salient concern.

## Conclusion

The SRH empowerment of adolescent girls was a major preoccupation for various stakeholders, who undertook proactive and reactive actions at various levels to address its related preoccupations. However, gaps in governance and policy conception and implementation remained a concern. The findings revealed many breaches in adolescent girls' SRHE, ranging from early engagement in sex, transactional sex, unintended pregnancy, school dropout, abortion, and, more critically, unsafe abortion, and low perception of contraceptives, though preference was expressed for condoms. Although the region's socio-political crisis contributed through poverty, internal displacement, and family disruption, other salient facilitators included inadequate policies and governance, with the education sector still lacking structure and specificity. To improve and sustain adolescent girls' SRHE, stakeholders suggested the refinement of SRH education, notably in secondary school, and the proper implementation of existing policies in a multi-sectoral approach while striving to end the crisis, alleviating poverty and fostering early home-based education, comprehensive / intensified school-based education with effective integration in the curriculum, intensified community-based education and awareness, and education through mass media while intensifying from early adolescence.

**Figure 2.** Proposed T-SAG-SRHE Model for Structured Adolescent Girls' Sexual and Reproductive Health Empowerment in the Tiko Health District.

# TIKO STRUCTURED ADOLESCENT GIRLS SEXUAL AND REPRODUCTIVE HEALTH EMPOWERMENT (T-SAG-SRHE) MODEL

*A Life-Course, Multisectoral and Community-Owned Model for Empowered, Healthy and Resilient Adolescent Girls in Tiko Health District*



Although access to information through mass media and social media was moderately satisfactory, the content available to adolescents needed to be controlled. The economic empowerment of adolescent girls, considering their stages of development, was encouraged to reduce dependence and the risk of transactional sex, while deploring the growing laziness among youth as a major drift that should be corrected. It was advocated that repressive measures be taken to deter perpetrators of sexual abuse and, among others, that adolescent girls who engage in poor behavior should be punished to deter their continuation. Stakeholders recommended involving adolescent girls in SRH-related activities and considering their opinions in policy conception and implementation. A means to ensure the inclusion of SRH in health sector planning and make functioning health systems work for SRH is to strengthen participation in program-based approaches and sector-wide approaches (SWAps) and promote attention to SRH within national educational, health, legal, social, and law-enforcement sectors, not discriminately but in integration, strategic planning, and budgeting, while setting adequate referrals and interconnection pathways. In addition, the most effective and cost-efficient way to ensure SRH issues are part of the humanitarian response is to incorporate them into emergency preparedness plans and build national preparedness capacity from a structured, multi-sectoral perspective. The proposed T-SAG-SRHE model (Tiko - Sexual and Reproductive Health Empowerment of Adolescent Girls) (Figure 2) is designed to address governance, policy, sociocultural, and health system-level barriers that affect adolescent girls' SRHE in the Tiko Health District in Cameroon's Southwest Region. It is a multi-sectoral, participatory, adolescent-centered model that incorporates comprehensive sexuality education, equitable access to adolescent-friendly health services, active adolescent participation, family and

community support, and stronger institutional accountability. The model aims to strengthen adolescents' capacity to make informed decisions, achieve reproductive autonomy, adopt health-seeking behaviors, and achieve equitable SRHE outcomes by integrating policy, service delivery, and adolescents' lived experiences. The researchers propose testing the model's efficacy and potential for wider application through pilot programs in the local context, with appropriate stakeholder involvement and long-term evaluation.

## **Limitations**

This study was conducted in a region facing socio-political instability since 2016, which made working in rural/remote communities challenging. Despite these constraints, the study achieved its objectives.

## **Recommendations**

To enhance the effectiveness of SRH empowerment of adolescent girls, the following recommendations were made:

- Ending the socio-political crisis rocking the region since 2016.
- Making SRHE a specific subject in secondary school.
- Enhancing education and awareness at home, community, school, health centers, and through mass media and social media while controlling for unsuitable content.
- Enhancing collaboration among stakeholders; and
- Fostering a participatory approach whereby adolescent girls are active actors, where conducive, in actions geared toward enhancing their SRH empowerment.
- Piloting of the T-SAG-SRHE model to ascertain its effectiveness, and plan large scale implementation.

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The views and opinions expressed in the submitted article are the authors' own and not the official position of the affiliated institutions.

### Competing Interest Statements

The authors declare no competing interests with respect to this study and publication.

### Authors Contributions

Binsila B. B. and Bodzewan E. F. participated in all stages of this paper, from study design and methods to data collection,

analysis, and writing. Nana C. participated in methods and data analysis.

### Ethical Approval

Ethical approval was obtained from the Southwest Regional Delegation of Public Health, Ref. No1292/CRERSH/SW/C/05/2026.

### Data Availability

Data for this study are available and can be accessed if requested.

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