

Pathways to Sexual and Reproductive Health Empowerment among Adolescent Girls in a Resource-Constrained Setting: A Grounded Theory from Southwest Cameroon

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Cite this article as: Binsila Bernard Benjika, Nana Celestin, Bodzewan EF. Pathways to sexual and reproductive health empowerment among adolescent girls in a resource-constrained setting: a grounded theory from Southwest Cameroon. *Texila Int J Acad Res.* 2026;13(4).
<https://doi.org/10.21522/TIJAR.2014.13.04.Art025>

Received: 18.08.2026

Accepted: 06.10.2026

Published: 30.10.2026

Article Type: Original Research

Abstract Adolescents' journey toward Sexual and Reproductive Health Empowerment (SRHE) in many sub-Saharan African countries faces myriad hurdles. This study aimed to describe pathways to SRHE among Adolescent Girls in a resource-constrained setting in Cameroon's Southwest Region, which has been affected by a socio-political crisis since 2016. The study obtained ethical approval and used a concurrent triangulation and sequential exploratory mixed-methods design within a survey framework, combining quantitative and qualitative approaches. The study included 465 participants: adolescent girls, parents, health personnel, and key informants from traditional, educational, health, social, legal, women and gender empowerment, UN organizations, and civil society organizations. Researchers analyzed quantitative data using SPSS, while qualitative data underwent thematic analysis using ATLAS.ti and NVivo. The findings revealed that though adolescent girls were empowered, the impact was questionable as they still engaged in sex relatively early. Though they were generally aware and had access to either form of contraceptive methods, their willingness to use them was relatively low except for condoms. Among others, teenage pregnancy was relatively high. Critical predictors of early sex were the poverty / economic emancipation, the vulnerability of those with dead parents, from a single-mother home, or living with a friend, and the conflict and fragility context. To improve and sustain SRHE, stakeholders suggested early home-based education; comprehensive/intensified school-based education; intensified community-based education and awareness; and education through controlled mass media. SRH education mostly started in early adolescence.

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

Introduction

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. These hurdles vary in dimensions, including socio-cultural, institutional, and personal factors. At home, in schools, and in the community, young adolescent girls face transformational and developmental challenges in acquiring the knowledge and practical skills needed for a healthy SRH life. The negative outcomes deriving from unsuccessful SRH emancipation are enormous, among which are unwanted pregnancies, STIs, school dropouts, unsafe abortions, morbidities, deaths, and the overall repercussions on socio-economic development at individual, micro, and macro levels. In Sub-Saharan Africa, adolescents make up a significant share of the global population, accounting for about 23 percent [1]. Adolescence is a critical age in which people undergo multifaceted sexual development [2]. Sundry health risks and complications secondary to unprotected sexual activity among adolescents have been reported and documented by the World Health Organization [3, 4], for which urgent and prompt interventions are recommended. Recent data indicate that 1.2 billion people worldwide are adolescents aged 10–19 years [5]. Adolescents are slightly at an increased level of vulnerability for different health conditions, including sexually transmitted diseases, when compared to the adult population [6]. Risky sexual behavior is characterized by different hazardous behaviors ranging from premarital sex and 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 [7], and other STIs. Teenage motherhood remains a crucial public health problem that especially affects their mental health, with depression and anxiety disorders considered among the most disabling

mental health problems for 1/8 teenage mothers worldwide [8]. It is estimated that 16 million girls aged 10–19 years give birth every year, accounting for almost 11% of all births worldwide [9], with this early and generally unwanted childbearing remaining persistently detrimental to the mental health of teenagers in the world and mostly in developing countries, especially those facing internal conflicts like Cameroon [10]. The South-West 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, 2023). 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. 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 many suffering from excessive bleeding as the main risk [11]. 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 [12]. 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 [13], thus posing a major question about the effectiveness of their sexual and reproductive health empowerment.

Study Objective

This study aimed to describe pathways to SRHE among Adolescent Girls in a resource-constrained setting in Cameroon's Southwest

Region, which has been affected by a socio-political crisis since 2016.

Materials and Methods

Research Design

This study employed a survey design, specifically a concurrent triangulation mixed-methods approach that integrated quantitative and qualitative methods to collect data from different stakeholders in the initial phase. This approach collected quantitative and qualitative data concurrently to strengthen the validity and credibility of the findings through triangulation. The second phase used a sequential exploratory mixed-methods approach, in which trends and findings from the initial phase informed the development of an interview guide to explore identified strengths and weaknesses and capture key informants' general perceptions of the subject matter. The quantitative component focused essentially on adolescent girls. For the qualitative component, the study targeted parents, educators, health personnel, and key informants because they were involved not only in implementing policies but also in conceiving and developing them.

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 [14]. The district delivers health services through a decentralized 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 [15]. Disruption and insecurity have also affected the financial sector, and violence and the collapse of

economic activity have reduced employment [15].

Study Population and Sampling

The study population included adolescents, household heads, educators, health personnel, and policymakers from various sectors. Adolescent girls were central to the study. Still, the individual determinants of their sexual and reproductive life are highly influenced by various socio-political and cultural factors included in the study, which contribute 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 50% prevalence to estimate the optimal sample size. For the qualitative component, we purposively and conveniently sampled 10 educators, 24–32 parents, 10 health personnel, and 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 the communities and, because parental consent was required, sampled those under 16 years at home. For the qualitative study, participants were purposively and conveniently sampled.

Data Collection Tools and Procedures

Researchers used a semi-structured questionnaire to collect information from active adolescent girls through face-to-face interviews, after administering the assent form to those aged 16 years and above and the consent form to the parents of those under 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, was appraised under the section labeled SRH empowerment outcomes. This last section was adapted from the SRH scale. The last section consisted of pregnancy 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,

Validity of Data Collection Instruments

The study 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 study informed refinements to the instruments' wording, response categories, and data-collection procedures.

Reliability of Data Collection Instruments

We assessed the quantitative instrument's internal consistency using Cronbach's alpha coefficient. The reliability coefficients ranged from 0.777 to 0.963, indicating very good to excellent internal consistency for adolescent girls. For qualitative tools, expert review using the parallel method and pilot testing improved reliability by ensuring clear, consistent interpretation of questions. We standardized

and cross-checked data-collection procedures to minimize measurement error.

Ethical Considerations

The Ethics Committee of the Regional Delegation of Public Health for the Southwest Region granted ethical approval, and the Regional Delegation of Public Health granted administrative authorization, with support from Texila American University, Guyana. 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. The researchers obtained informed consent from all participants before interviews and questionnaire administration. The researchers maintained confidentiality and anonymity by not recording personal identifiers; they backed up all collected information, used it strictly for research purposes, and reported it in summary form.

Data Analysis

The team collected adolescent girls' survey data electronically using tablets 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' assent, 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. We generated codes from the transcripts and grouped them into broader themes, compiling illustrative quotations and grounded summaries into code-grounding-quotation tables following the positivism paradigm to complement the quantitative findings and support interpretation.

Results

Socio-Demographic Characteristics

A total of 445 participants took part in the study, including 384 adolescent girls, 11 educators, 24 parents, 15 health personnel, and 11 key informants. The return rate was below 100% for adolescent girls and key informants. For adolescent girls, the return rate was 93.7%, and working in remote areas during this socio-political crisis contributed to this. For key informants, the return rate was 73.3%, with some feeling embarrassed about addressing policy issues related to adolescent SRHE; the remaining 100% or more, with an overall return rate of 94.9%. Adolescent girls and stakeholders were well stratified by demographic characteristics, which supported the representativeness and validity of the data (Tables 1 and 2).

Table1. Socio-demographic Characteristics of Adolescent Girls

Variable	Category	Adolescents (N=384)	
		Frequency	Percent
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

Table 2. Socio-demographic Characteristics of Stakeholders

Variable	Category	Parents n (%)	Educator n (%)	Health personnel n (%)	Key informants
Sex	Male	50.0 (12)	54.6% (6)	26.7% (4)	54.5% (6)
	Female	50.0 (12)	45.4% (5)	73.3% (11)	45.4% (5)
Age group	16–24 years	16.7% (4)	27.3% (3)	40.0% (6)	0.0% (0)
	25–54 years	83.3% (20)	54.5% (6)	60% (9)	90.9% (10)
	55–64 years	0.0% (0)	18.2% (2)	0.0% (0)	9.1% (1)
	≥65 years	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
Level of education	None	4.2% (1)	0.0% (0)	0.0% (0)	0.0% (0)
	Primary	20.8% (5)	0.0% (0)	0.0% (0)	0.0% (0)
	Secondary	33.3% (8)	0.0% (0)	0.0% (0)	9.1% (1)
	Tertiary/University	41.7% (10)	100% (11)	100% (11)	90.9% (10)

Actions Toward Fostering the SRHE of Adolescent Girls

Table 3: Things Parents Discuss with their Girl Child when Educating them on Sexual and Reproductive Life

Code	Code description	Grounding	Quotation
Reporting	Reporting to parents or any indicated person when faced with unfriendly persons or attitudes, or any form of abuse	41.7% (10)	“That if there is someone who is talking all those types of things to her, she should come and tell me, that she should not hide from me, because I don’t want her to bring me disgrace back home.” (Rural female parent); “How to keep themselves safe and also teach them how to identify someone that can abuse them and also report back” (Urban female parent); “Another topic parents can talk to their daughters is how to handle boys in class because at that stage there are males that in class, will approach them in different ways, so the parents have to tell them that when they do so they can report to the teachers or they can report home, so that the situation can be handled” (Urban female parent).
Unsafe social environment	Unsafe and risky social environment, unwanted pregnancy, risk of rape and other sexual abuses, abortion and associated risk, as well as STIs	37.5% (9)	“I tell her everything that I have passed through, let her know that the outside is not fine” (Rural female parent); “she is not supposed to interact anyhow, for instance meeting men in closed places alone because they can easily take advantage of her or they can rape her, stuffs like that” (Urban female parent); “Should not go closer to the boys because they can rape her; those are some of the advice” (Urban female parent); “Some of them even get pregnant then attempt to abort and in the process of aborting they die” (Urban female parent); “she should be very careful with boys because she can get pregnant at any time” (Urban female parent).
Menstruation	Menstruation and menstrual hygiene, calculating on menstrual cycle	33.3% (8)	“I also tell her that if at all she starts seeing the blood coming out from her body, she should not shy away; she should run to any close person, she should run to me and tell me. That is what I always tell them. I also prepare them on how to use pads to protect themselves during menses and how to clean themselves” (Rural female parent); “Some sensitive topics to talk about sexual education to a girl child are how to calculate her menstrual cycle, so she should be able to calculate her menstrual cycle, so she can be safe, clean, and secure” (Urban female parent); “Menstrual cycle, how it works, to prevent pregnancy and caution her, to prevent illnesses” (Urban male parent).

Unwanted pregnancy	Avoiding unwanted pregnancy, risks and consequences of unwanted pregnancy like school dropout, jeopardized marriage	20.8% (5)	“So, at that time, if any person comes closer to you, you should stay away because if you move in you can get pregnant” (Rural female parent); “I tell her that at that age of 12, some blood starts coming out from the body of the woman and you can get pregnant” (Rural female parent); “she should be very careful with boys because she can get pregnant at any time” (Urban female parent); “I always tell her that she can get pregnant and her education will stop, that HIV has no cure” (Rural male parent); “Menstrual cycle, how it works, to prevent pregnancy and caution her, to prevent illnesses” (Urban male parent).
Self-control	Self-control, avoiding men, abstinence, risk of premature sex	20.8% (5)	“I used to advise my child; I tell her that now she is already a woman, that she should be very careful the way she meddles with men, that she should be very careful because if she goes and tries, for instance, these things that boys use to give girls, that she should not take and that she should not hide things from me” (Urban female parent); “I always tell them not to take money from strangers, that if they lack anything they should tell me” (Rural male parent).
STIs	Risk of sexually transmitted infection	20.8% (5)	“I always tell her that HIV has no cure” (Male rural parent); “Also, I will tell her about the consequences of sex, for instance, you can become pregnant, you can have STDs” (Urban male parent).
Partner choice	Ability to choose a partner with moral aptitude	20.8% (5)	“As for the big ones, I don’t even teach them again how they should use pads, and so on, because all of them are going to school; they have already learned those things in school. So, the only thing I tell them now is that they should know the type of man or boyfriend they should follow, that they should not follow the type that will get them pregnant. I am already aware of the fact that I cannot prevent them from meddling with boys; I only guide them on how they can meddle with them safely.” (Rural female parent)
Self-protection	The child should know boundaries to be able to self-protect her sexual organs	16.7% (4)	“As for me, I have girls that are still small and some that are already matured. For those small ones, I tell them that if any man touches their breast or their private parts (“lass”), report to me. I also tell them that there are some types of play like daddy and mummy (“Papa and mammy”); I always tell them to avoid that types of play because it is during that types of play that they trigger them to do certain types of things that they see in films or that their

			mothers are doing” (Rural female parent); “I also caution them that in case a man touches them at a sensitive place, because I have already told them about their private parts, let them come and tell me” (Rural female parent); “That if any person asks her for a number or to sleep with her, she should report home” (Rural male parent); “My girl is 11 years old. When she was 4, I told her that nobody should touch her vagina. One day she reported to me that her madame touched it when she went to urinate” (Rural male parent);
Proactive safety	Proactive safety measures ensuring the safety of the child so that she is not a victim of sexual predators, early pregnancy, STIs, sexual abuse, or rape	16.7% (4)	“I tell her of those things such that she should be ahead, so that if she finds herself in those things she should be responsible for the consequences, so I always tell her about the consequences so that she should not find herself in it” (Urban male parent); “To prevent illnesses” (Urban male parent).
Premature sex / Premarital sex / Abstinence	Caution children on the risk of premature sex, the need for abstinence	12.5% (3)	“I first of all make them understand that they are still tender children, and that they have nothing to do with sex as of now until when they will reach the year of 22” (Rural female parent); “Things that I tell my girl child are that she should get married before having sex because if you are having sex before marriage, even if you are too protective, one day you will fall into a trap where you become pregnant. I also tell her that if you want to fall into those temptations, you should use protection” (Urban male parent).
Body change / Puberty	Signs of puberty as reflected on the body and associated risks	12.5% (3)	“About sex education, the first thing I like to discuss is the changes that take place in their skin, what makes them different from men, yeah, that is talking about the female organ, the difference with male, the development, what they have to understand, the stage-by-stage development that will take place in their body” (Urban female parent); “Ok I can talk about the changes that can occur on her body as she is growing, for instance breast can start growing from the chest while this cannot happen with boys and then after sometime she will start menstruating so I have to explain to her that when this time arrives and your breast also start showing you should not be afraid because that is what happens normally to women and when the time you start seeing blood

			comes , you should not be afraid, come and tell me so that I will tell you how to go about it; so all those things I have to make her know that there will be a time that her body will change completely and by then she would have grown from a girl to a woman” (Urban female parent); “Some of the topics that I discussed with my girl child about sex education are her secondary sexual development, the secondary sexual development that happens to her body like enlarged breasts, pubic hairs, menstruation, and she has to know that when she sees all these developments in her body then she has grown into a woman” (Urban female parent).
Caring of reproductive organs	How to care for the reproductive organs	8.3% (2)	“Teaching also how to care for those special body parts that are different from what males have” (Urban female parent); “she has to take proper hygiene, proper care of herself” (Urban female parent).
Safe sex	The right age to engage in sex, and how to go about safe sex	8.3% (2)	“Also talk to them about the proper sexual intercourse itself; they have to know the right age at which they can engage, and how to keep themselves safe” (Urban female parent).
Identifying predators	Enhancing ability to identify sexual predators and reporting	8.3% (2)	“Teach them how to identify someone that can abuse them and also report back” (Urban female parent).
Peer influence	Risk of peer influence as one can be misled by bad girls with whom one socializes	8.3% (2)	“For me the things you should discuss with her are the people you associate yourself with because when you associate with some girls nowadays they are going to lead you in some places where you cannot come out from there or and also when body starts changing, you tell her about her life” (Urban male parent); “I will tell her about the type of friends she should be with either a boy or girl, that she should watch over the type of friend that she will be with because if she has a bad friend even though she is a good child the friend can also lead her into bad things and finally she will find herself into a situation that she will not like” (Urban male parent).
Not started / Tender children	Children at 3 years old perceived too tender to be introduced to topics on sexual life	4.2% (1)	“My children are still tender, so I have not yet started talking with them, though I am prepared to do so from the age of 10 years, as I earlier said” (Rural female parent).

Focus on younger ones	Focus on younger ones perceived as more receptive	4.2% (1)	<p>“I talk with them; there are some that, as you caution them, bang they adjust, but there are some that envy (“langer”), as my sister just said; I agree with her. I focus on the younger ones” (Rural female parents).</p> <p>“I tell elder ones things concerning men or boys, but when I told them they were not taking word from me and when they fell victim, I told them that now let them bear the consequences” (Rural female parent).</p>
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Things parents discuss with their girl children when educating them on sexual and reproduction life ranged from reporting to parents or any indicated person when faced with unfriendly persons or attitudes; unsafe and risky social environment, unwanted pregnancy, risk of rape, and other sexual abuses, abortion and associated risks, STIs; menstruation and menstrual hygiene, calculating menstrual cycle; avoiding unwanted pregnancy and early pregnancy, risks and consequences of unwanted pregnancy like school dropout, jeopardized marriage; self-control, avoiding men, abstinence, risk of premature sex; risk of

sexually transmitted infections; the child knowing boundaries to be able to self-protect her sexual organs; proactive safety measures ensuring the safety of the child for her not to be victim of sexual predators; sexual abuses or rape; choice of partner with moral aptitude; signs of puberty as reflected on the body and associated risks; how to care for the reproductive organs; the right age to engage in sex, and how to go about safe sex; enhancing ability to identify sexual predators and reporting; and risk of peer influence as one can be misled by bad friends with whom one socialized (Table 3).

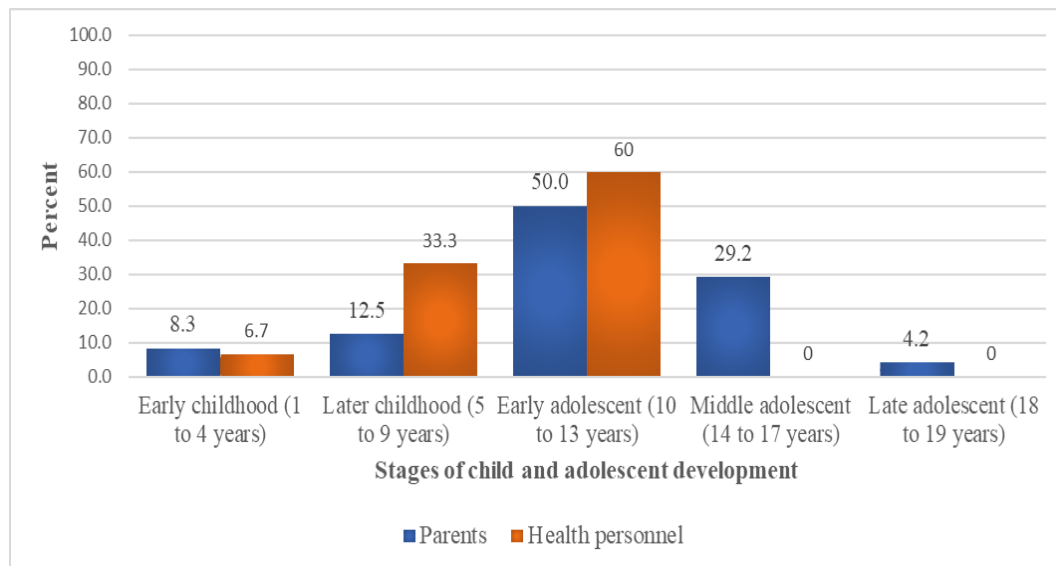


Figure 1. Stages of Child and Adolescent Development at Which Parents and Health Personnel Start Educating Girls on their Sexual and Reproductive Life

Parents and health personnel mostly started educating girls on their sexual and reproductive life during their early adolescence, that is, between 10 and 13 years, and cumulatively from 5 to 13 years old (Figure 1), with reasons or actions taken stratified to the stages of

growth (Table 4). Stakeholders generally focused on this group, perceived as more receptive, while some perceived younger ones as too tender to be introduced to topics on sexual life, notably in early childhood.

Table 4. Actions and Reasons for Starting to Educate Adolescent Girls at a Particular Developmental Stage

Development Stages	Reasons
Early childhood (1 to 4 years)	Self-protection, as the child should know boundaries to be able to self-protect her sexual organs
	Proactive safety; to proactively ensure the safety of the child so that she is not a victim of sexual predators, early pregnancy, STIs, sexual abuse, or rape.
	School experience with other children who confide their experiences.
Later childhood (5 to 9 years)	Early sensitization; reasoning age; onset of puberty; and active / and interactive with the environment.
	Reasoning age; the age when the adolescent is endowed with the capacity to reason, think coherently, and use logic.
	Unsafe social environment; the social environment predisposes to sexual promiscuity, thus putting young girls at risk.
	Proactive safety; to proactively ensure the safety of the child so she is not a victim of sexual predators, early pregnancy, STIs, sexual abuse, or rape. Perceived importance of early or proactive sensitization before the adolescent indulges in an active sexual life.
Early adolescent (10 to 13 years)	Puberty/sexual maturity; enhancing self-control; knowing right for self-protection; and childbearing age.
	Proactive safety; to proactively ensure the safety of the child so that she is not a victim of sexual predators, early pregnancy, STIs, sexual abuse, or rape. Perceived importance of early or proactive sensitization before the adolescent indulges in an active sexual life.
	Girls are perceived to be sexually emancipated early nowadays, having a boy partner earlier.
	Curiosity/exposure: at this age, the child is already curious, exploring, and exposed to the outside world, movies, schools, etc.
	Reasoning age: the age at which the adolescent develops the capacity to reason coherently and logically.
	To enhance free and friendly communication between parent and child.
	Risk of unwanted pregnancy.
	Sexual maturity, as the girl has attained puberty and can be sexually active.
	Risk of STIs.
	Unsafe social environment; the social environment is predisposing to sexual promiscuity, thus putting young girls at risk. Evidence of negative role models, like girls with unwanted pregnancies.
	Poor sex differentiation in school as boys and girls are freely mixed up.

	Self-protection; the child should know boundaries to be able to self-protect her sexual organs.
Middle adolescence (14 to 17 years)	Mother's early intervention at tender ages.
	To avoid failure in life and unsuccessful outcomes.
	Risk of unwanted pregnancy.
	Sexual maturity, as the girl has attained puberty and can be sexually active.
	Risks of STIs.
	Trigger signs as the child is growing.
	Unsafe social environment; the social environment predisposes to sexual promiscuity, thus putting young girls at risk. Evidence of negative role models, like girls with unwanted pregnancies.
	Proactive safety; to proactively ensure the safety of the child so she is not a victim of sexual predators, early pregnancy, STIs, sexual abuse, or rape.
Late adolescent (18 to 19 years)	Unsafe school environment / Peer influence; the school environment is predisposing to sexual promiscuity, thus putting young girls at risk, notably peer influence in secondary school.

SRH Empowerment

SRH empowerment thus did not emerge as a major problem in this study context. However, the impact was questionable, as though

empowered, adolescent girls still indulged in sex relatively early, besides unwanted/early pregnancy and low interest in contraceptive methods (Figure 2).

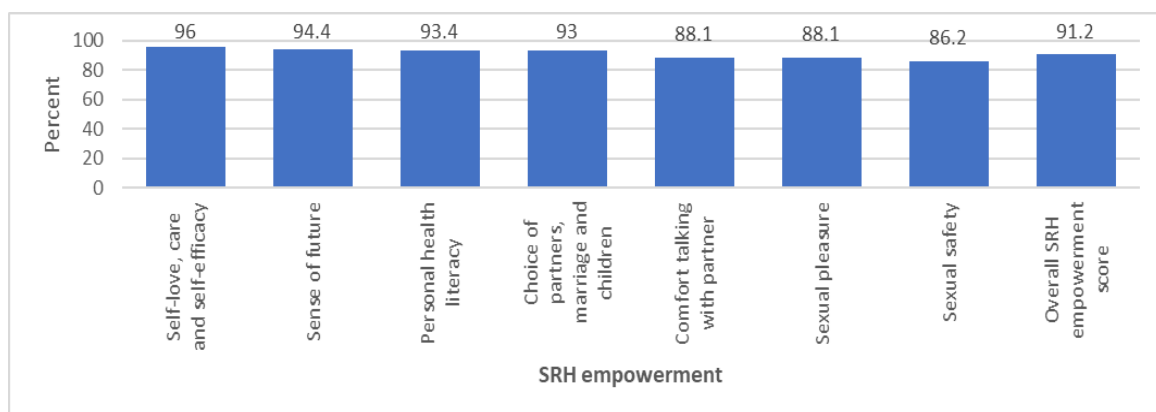


Figure 2. SRH Empowerment of Adolescent Girls

Classification of Empowerment Facilitators

Adolescent girls highlighted neighborhood standards or conditions as the most ineffective facilitator of their SRH empowerment,

followed by community and social norms, conflict and fragile context, and the health system, with a level of ineffectiveness of 10% or above. This high discrepancy thus highlights the unstructured nature of the SRH empowerment mechanism (Figure 3).

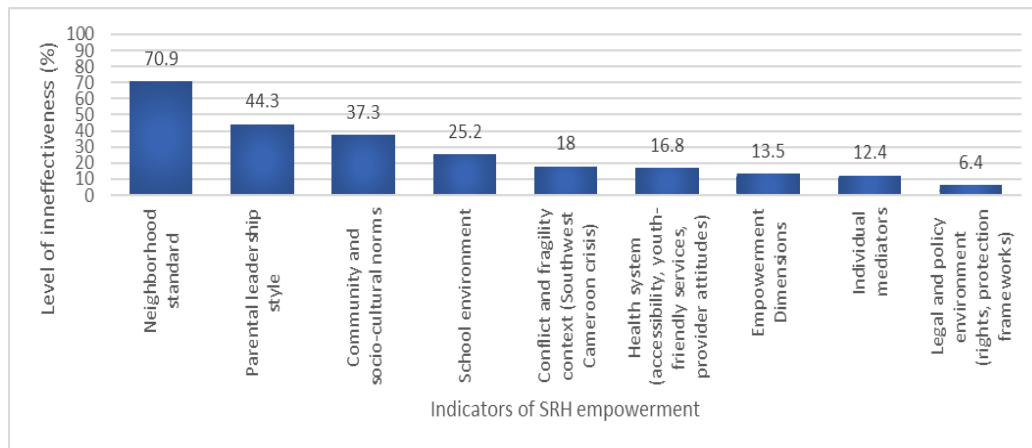


Figure 3. Ineffectiveness of Indicators of SRH Empowerment of Adolescent Girls

Neighborhood standard was the most ineffective in enhancing adolescent girls' SRHE, with a perceived ineffectiveness proportion of 70.9%. It was followed in this perspective by parental leadership style, community and socio-cultural norms, school environment, conflict and fragility context (Southwest Cameroon crisis), health system (accessibility, youth-friendly services, provider attitudes), empowerment dimensions, and

individual mediators, with legal and policy environment (rights, protection frameworks) being the least concern.

Contraceptives

Adolescent girls generally have heard of contraceptive methods to prevent or control pregnancy and childbearing, 81.8% (314). The most highlighted contraceptive method used was the condom (Figure 4).

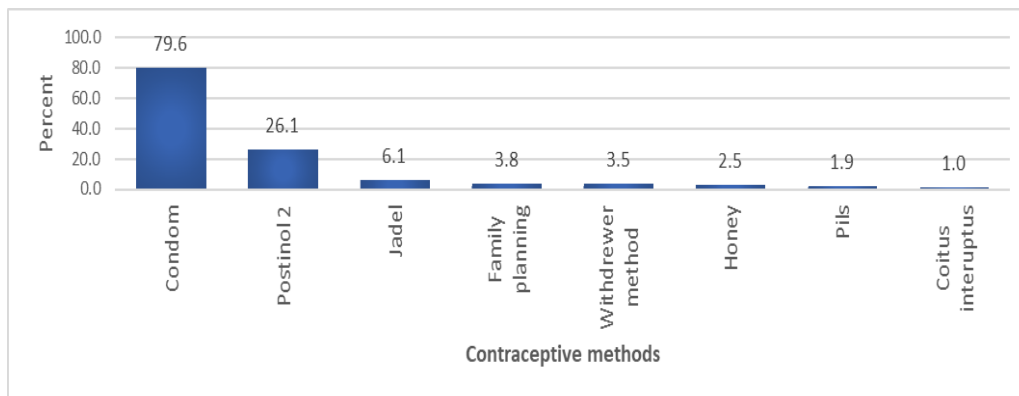


Figure 4. Adolescent Girls' Description of Contraceptive Methods Used

Willingness to Use Contraceptive Methods

Though adolescent girls generally said they were aware of and had access to both forms of contraceptive methods, their willingness to use them was relatively low, at 49.7%. For the most highlighted contraceptive methods, notably condom, pill, Jadelle, family planning, withdrawal method, and pills, the percentages of adolescent girls who were comfortable using

them were 52.9%, 54.3%, 55.6%, 57.1%, 55.6%, and 42.9%, respectively.

Teenage Pregnancy

Cumulatively, 27.3% (105) had at least one child (Table 5). The number of children was significantly dependent ($P = 0.000$) on adolescents' age, whereby the younger ones (10-15 years) mostly did not have children, with a proportion of 87.4% (167), as against 58.0% (112) for the older ones (16-19 years).

Table 5. Association Between Adolescents' Age and Number of Children

Age	Stats	Number of Children			Total
		0	1	2	
10-15	n	167	24	0	191
	%	87.4%	12.6%	0.0%	100.0%
16-19	n	112	67	14	193
	%	58.0%	34.7%	7.3%	100.0%
Total	n	279	91	14	384
	%	72.7%	23.7%	3.6%	100.0%

χ^2 -test: $\chi^2 = 45.152$; $df=2$; $P = 0.000$.

Age at Sexual Debut

In fact, most of the adolescent girls had already had sex, and among them 23.1% had it relatively young, between 12 and 15 years (Table 6). This indicator (age of sexual debut)

was then used in predictive modeling to identify significant and critical predictors of risky sexual behavior as a corollary of the unstructured SRH empowerment mechanism depicted by this study.

Table 6. Description of Age of Sexual Debut

		Frequency	Percent	Valid Percent
Valid	12–15	39	10.2	23.1
	16–19	130	33.9	76.9
	Total	169	44.0	100.0
Missing	Not yet	215	56.0	
Total		384	100.0	

Table 7. Bivariate Association with Age of Sexual Debut as Dependent Variable

Predictors	Chi-Square test			Comment
	Score	df	Sig.	
Health area	0.192	1	0.662	There was basically no discrepancy among the health areas
Age of primary partner	27.845	1	0.000	The age of the primary partner increased significantly with the adolescent girl's age.
Source of financial support	5.921	1	0.015	Those who depended on a parent/guardian engaged in sex earlier (12-15 years) than those who depended on themselves or a romantic partner. Statistics also revealed that younger adolescents depended more on a parent/guardian than older adolescents. So, this relationship was more likely not to be significant after controlling for adolescent age.
Employment status	26.020	1	0.000	Those with no employment significantly engaged in sex earlier.
Religion	2.718	1	0.099	The independent variable was highly skewed. Above all, the dependence was not statistically significant, though Muslims had the highest proportion, followed

				by Christian with no traditionalists engaging in sex earlier.
Who is primarily in charge of Sexual and reproductive education of the girl child in the family	0.715	1	0.398	Though in the context where both parents engaged in SRH education, adolescent girls were least engaged in sex earlier, the discrepancy with father or mother was not obvious.
Parent's marital status	0.215	1	0.643	Though in the context where parents were separated or cohabiting, adolescent girls engaged in sex earlier; this discrepancy was statistically significant.
Parents are alive	4.999	1	0.025	Adolescent girls with parents dead significantly engaged in sex earlier.
Person with whom currently living	14.122	1	0.000	Those living only with mother or a family friend significantly engaged in sex earlier.
Highest level of school attained by either parent/guardian	4.256	1	0.039	Those with a parent who has never been to school significantly engaged in sex earlier.
Highest standard principal occupation of either parent/guardian	4.728	1	0.030	Adolescent girls of parents with unskilled / semi-skilled work significantly engaged in sex earlier.
Highest standard category of work of either parent	2.341	1	0.126	Though adolescent girls of self-employed parents engaged in sex earlier than those of parents under paid employment, this discrepancy was not statistically significant.
Type of locality	0.577	1	0.448	Adolescent girls in urban areas engaged in sex earlier than those in rural areas, but this dependence was not statistically significant.
Category of neighborhood	8.362	1	0.004	Adolescent girls in low-status neighborhoods significantly engaged in sex earlier.
Parental leadership style categorized	3.148	1	0.076	Although parental leadership style was perceived as inadequate, adolescent girls engaged in sex earlier, the difference was not statistically significant. Permissive and tolerant approaches characterized inadequate parenting leadership.
Neighborhood standard categorized	9.685	1	0.002	Where neighborhood standard was low with poor hygiene and sanitation, promiscuity, noise, etc., adolescent girls were significantly more exposed to early sex.
Community and socio-cultural norms	0.015	1	0.902	There was basically no association here.
Health system (accessibility, youth-friendly services, provider attitudes)	0.635	1	0.426	Although adolescent girls perceived it to be inadequate, they engaged earlier in sex; the discrepancy was not statistically significant.

Legal and policy environment (rights, protection frameworks)	3.598	1	0.047	Where it was perceived as inadequate, adolescent girls engaged in sex earlier.
Conflict and fragility context (Southwest Cameroon crisis)	6.257	1	0.012	Where the socio-political crisis was perceived as a problem, adolescent girls engaged in sex earlier.
Individual mediators	1.384	1	0.239	Where it was perceived as inadequate, adolescent girls engaged in sex earlier, though this discrepancy was not statistically significant.
Empowerment dimension	6.761	1	0.009	Where it was perceived as inadequate, adolescent girls engaged in sex earlier, and this discrepancy was statistically significant.

Age of primary partner, source of financial support, employment status, parents are alive, person with whom currently living, highest level of school attained by either parent/guardian, highest standard principal occupation of either parent/guardian, category of neighborhood, neighborhood standard, legal and policy environment (rights, protection

frameworks), conflict and fragility context (Southwest Cameroon crisis), and empowerment dimension were significantly associated with age at sexual debut ($P < 0.05$) as presented in Table 7. We then integrated these predictors into a multivariate analysis to characterize their predictive effects while controlling for one another.

Table 8. Binary Logistic Regression Depicting Significant and Critical Predictors of Age at Sexual Debut Alongside their Odds Ratios

Predictors	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Age of primary partner	0.302	0.535	0.318	1	0.573	1.352	0.474	3.862
Source of financial support	0.047	0.457	0.011	1	0.918	1.048	0.428	2.566
Employment status	2.223	0.668	11.072	1	0.001	9.238	2.494	34.220
Parental leadership style	2.466	0.818	9.081	1	0.003	11.777	2.368	58.566
Person with whom currently living	0.414	0.158	6.880	1	0.009	1.513	1.110	2.062
Highest level of school attained by either parent/guardian	-0.026	0.376	0.005	1	0.945	0.974	0.466	2.036
Principal occupation of either parent/guardian	0.979	0.779	1.580	1	0.209	2.662	0.578	12.253
Category of neighborhood	0.494	0.547	0.816	1	0.366	1.639	0.561	4.788
Neighborhood standard	1.088	0.640	2.889	1	0.089	2.967	0.847	10.400
Legal and policy environment (rights, protection frameworks)	0.817	1.478	0.306	1	0.580	2.263	0.125	40.992

Conflict and fragility context (Southwest Cameroon crisis)	1.744	0.768	5.158	1	0.023	5.718	1.270	25.743
Empowerment dimension	0.392	0.950	0.170	1	0.680	1.479	0.230	9.515

Four critical ($P < 0.05$; $OR > 1$; $LB-OR > 1$) predictors of age at sexual debut emerged from the set, notably employment status, parental leadership style, person with whom currently living, and conflict and fragility context (Southwest Cameroon crisis). Bivariate association earlier revealed that those with no

employment significantly engaged in sex earlier, the same with those who had dead parents, those living only with a mother or a family friend, and that where the socio-political crisis was perceived as a problem, adolescent girls indulged in sex earlier (Table 8 & 9).

Table 9. Multinomial Logistic Regression Depicting Significant and Critical Predictors and Categories' Odds Ratios of Age at Sexual Debut

Predictors (Predicting against 12-15 years, thus reference category 16-19 years)		Sig.	Exp(B)	95% Confidence Interval for Exp(B)		Evidence	Quotations
				Lower Bound	Upper Bound		
Employment status of parent/guardian	No employment	0.006	96.088	3.635	2539.975	Quantitative / Qualitative	“Some are encouraged by the parents to bring money home” (Secondary school educator); “Poverty” (Health personnel); “Family is poor” (Female health care manager)
	Formal sector employment	0.206	8.214	0.314	214.565		
	Informal sector employment	.	.	.	.		
Parental leadership style	Inadequate	0.010	11.321	1.775	72.199	Quantitative / Qualitative	“Parents not talking to their children” (Rural female parent); “Most parents are avoiding discussing this issue with their children. This should be addressed.” (Rural male parent); “Parents should advise their children”
	Adequate	.	.	.	.		

							(Secondary school educator); “As for non-comfortability, I will say 40%; the problem is really lack of knowledge because if you have not received sex education to train your girl, they will not have enough information to give them” (Female social affairs counselor)
Person with whom living	Father and mother	0.013	11.584	1.670	80.339	Quantitative	“Dead parents, I have had a situation where the boy in question and the girl, their parents are all dead” (Female social affairs counselor)
	Father	0.245	3.414	0.431	27.014		
	Mother	0.033	9.812	1.197	80.402		
	Other family member or relative	0.310	4.287	0.258	71.263		
	Friend	0.266	9.286	0.184	469.345		
	Alone	.	.	.	.		
Conflict and fragility context (Southwest Cameroon crisis)	Inadequate	0.028	5.892	1.214	28.601	Quantitative / Qualitative	“The crisis has also caused disorder, promiscuity” (Urban male parent); “Yes, because she meets with people from different areas and with different behaviors, attitudes” (Urban male parent); “Many girls have become pregnant” (Health personnel); “Some girls in conflict areas have been so traumatized that
	Adequate	.	.	.	.		

							they don't feel comfortable talking to people because of their experiences in the past" (Health personnel); "Some who have been assaulted find it difficult" (Health personnel); "Plunged them to hardship" (Female health care manager)
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Qualitative data unfolded other barriers, and these were scrutinized in terms of communication, cultural (beliefs and taboos), equipment / logistic, societal (beliefs, taboos, behavior, lifestyle, or attitude of people in the

community), psychological / acceptance from the girl, and legal and crisis contexts (Table 9).

Barriers and Response Measures

Table 10. Stakeholders' Descriptions of Barriers they Encounter When Educating the Adolescent Girl on her Sexual and Reproductive Life and How they overcome Them

Code	Code description	Quotation	Stakeholder concerned
Communication			
From adolescents			
Shyness	Shyness is a feeling of fear and embarrassment.	"The students are always shy and uncomfortable" (Secondary school educator); "Most of them are shy about discussing their sexual health with others" (Health personnel); "For me, when I started talking with her, she was shy; when I was talking about menses, she was shy, but she has started getting used to now" (Rural female parent).	Educators, health personnel, parents
Language barrier	Language barriers, such as some people not being literate in official languages or not being familiar with medical terminology.	"Language barriers" (Health personnel); "Difficulties to understand medical terminologies" (Health personnel).	Health personnel
Distance	Distance when one faces remote areas.	"Distance" (Health personnel).	Health personnel

Confidentiality	Confidentiality, as an adolescent fears disclosure.	“Confidentiality” (Health personnel).	Health personnel
Surprisingness	Surprisingness, as they find such talk or topic extraordinary and least expected in their present context.	“They sometimes feel shy, and some look surprised” (Secondary school educator).	Educators
Lying	Telling lies, things that are not true or based on facts.	“At times they tell lies” (Secondary school educator).	Educators
Aggressiveness	Aggressiveness, as some are hostile, bold, or manifest violent reactions.	“Some are aggressive at times” (Secondary school educator)	Educators
Disrespect / Indifference	Girls despise their parents, showing contempt or scorn, indifference, and not having time for them.	“My own children, as we are discussing, they will put their heads down as if it is not even what they know [Animator: They are shy]: Yes. They act as if it is not even what they do. You will argue a point till the end, but they will only laugh. You will talk some point, and surprisingly they will shout ‘eh antyyyy’ as if what you are talking about does not even exist” (Rural female parent); “My own child, when I am talking with her, she will instead cover her eyes, making as if she is not hearing” (Rural female parent).	parents
Misinterpretation	Misinterpretation by taking parents' words as lies.	“As for me, when I talk with my children, it is as if I am instead lying, whereas there are the very things that I passed through” (Rural female parent).	Parents
From educator			
Challenging introduction	Challenging to introduce the topic or start a conversation about it.	“Difficulties in starting conversation” (Secondary school educator).	Educators
Cultural (belief and taboo)			
Preference to boys	Neglect of the girl child; preference for the male.	“Neglect of girl and child given preference over the male child” (Primary school educator).	Educators
Taboo	Taboo, which is a prejudice that prohibits the use or mention of things related to sex to children or publicly.	“Some feel like taboo for such talk to underage” (Secondary school educator); “It is a taboo; they criticize the fact that they discuss to that level with children” (Secondary school educator); “Yes,	Educators, Health personnel, parents, Social affairs

		normally at the onset children are shy because it is commonly perceived that one should not hold such conversation with children” (Health personnel).	
Religious	For some religions, it is very inappropriate to talk about sex to young girls / Islam could be a barrier, as most Muslim girls don’t want to open up.	“Yes, I will say there are barriers and one of the barriers I can say is religious barriers, like for example for you talking to her about sexuality, euhmm but religiously it is abnormal for you talking about sexuality to someone too young” (Urban male parent); “Most Muslim girls don’t want to open up” (Secondary school educator); “For Muslim it is very inappropriate” (Health personnel).	Parents
No cultural obligation	Adolescent girls’ sexual and reproductive health education is not fully integrated into local culture.	“No cultural obligation” (Secondary school educator).	Educators
Home delivery not taboo	Home delivery / traditional midwifery not taboo.	“They believe in giving birth at home” (Health personnel).	Health personnel
Male educator as taboo	Male talking to girls on sexual issues perceived as taboo.	“The belief that a man is not supposed to educate girls on reproductive issues” (Health personnel); “As a male nurse, some see it as odd” (Health personnel).	Health personnel
Equipment/logistics			
Not available	Equipment or logistics on sexual and reproductive health not provided.	“No logistics” (Secondary school educator); “None” (Primary school educator).	Educators. Health personnel
Private space	Private space for one-on-one talk not available.	“Lack teaching materials” (Health personnel).	Health personnel
Educational support tools	Lack of support educational materials	“Lack of teaching materials” (Health personnel); “Lack of equipment for good education” (Health personnel).	Health personnel
Transportation	Lack of transportation and poor road conditions during the rainy season limit outreach and coverage.	“Transportation” (Health personnel); “Need bikes” (Health personnel); “Challenge to meet them at their geographical areas” (Health personnel); “Challenge with community home visit” (Health personnel); “Limited number of outreaches” (Health personnel); “Going to such areas but in the dry season” (Health personnel).	Health personnel

Charts	Educational charts.	“Need charts” (Health personnel)	Health personnel
Economic			
No problem	No impact if the child is well brought up.	“No, this will have no impact for an educated child” (Urban male parent).	Parents
Societal (beliefs, taboo, behavior, lifestyle or attitude of people in the community)			
Stigmatization of victims of rape	Stigmatization of victims of rape who now suffer low self-esteem.	“Stigma to survivors of rape; survivors suffer low self-esteem and shame” (Primary school educator).	Educators Social affairs Health personnel
Male favoritism and impunity	Males are favored or treated with partiality, which increases the risk of exposure due to impunity.	“Males are favored and pose risk” (Primary school educator).	Educators Social affairs
Ignorance / Shyness	People are ignorant of the risks associated with inadequate sexual behaviors. Taboo, as most parents or society are shy to educate on sexuality.	“People are ignorant, and they don’t accept the fact that nowadays the children are exposed to danger” (Secondary school educator); “Most parents or society are shy to educate” (Secondary school educator); “People mostly shy away from the topic” (Secondary school educator).	Educators Social affairs
Inadequate awareness	Inadequate awareness, as some communities have a backward mentality about empowering young girls.	“Some communities have a backward mentality about empowering young girls” (Health personnel); “Most are generally dismissive about counseling” (Health personnel); “People should be sensitized” (Rural male parent).	Health personnel, parents
Negative role models	Negative role models sustained in society hinder others' empowerment.	“Peer pressure” (Health personnel); “Yes, some parents don’t really educate their children, and there is promiscuity around, and this can influence my child” (Urban male parent).	Health personnel, parents
Male educator as taboo	Male talking to girls on sexual issues taboo.	“The belief that a girl is not supposed to be educated on her reproductive life by a man” (Health personnel).	Health personnel
Psychological / Acceptance from the girl			
Low acceptance	Low acceptance as they shy away from the topic.	“Low acceptance” (Primary school educator); “Yes, there is acceptance but needs to be sustained” (Secondary school educator); “Others might be psychological because not everyone would like talking about sexuality. Those are some of the barriers that we can have” (Urban male parent).	Educators, health personnel, Parents/community
Low self-esteem	Low self-esteem: adolescent girls are not	“Self-efficacy” (Primary school educator).	Educators, health personnel

	happy or proud of themselves.		
Different reactions	Different reactions, as not all children comply or react the same during discussions.	“Some accept, some don’t accept” (Rural female parent); “Some will accept, but some will not accept. But if she stays quiet, know that that aspect has caught her. But if you have one shouting, know that one [many articulating at the same time] she is surprised” (Rural female parent).	Parents/community Educators Social affairs
Indifference / Disrespect	Girl despising the parent, manifesting contempt or scorn, indifference, and saying they don’t have time	“Some don’t just have the time” (Rural female parent).	Parents/community Educators Social affairs
Health system			
Business oriented	Health system practices are said to be business-oriented, prioritizing profit over the process and outcome of care.	“Yes, because there are too many, like contraception methods, and they mostly advise girls toward that direction because they want to make money; they want to sell their drugs” (Urban male parent).	Parents/community Educators Social affairs Health personnel Legal personnel
Legal context			
None	No legal or formal context	“No legal context” (Secondary school educator); “No legal backing” (Secondary school educator) “No legal constraint” (Secondary school educator)	All
Lack of knowledge	Lack of knowledge on laws regulating sexual and reproductive education of youth or related context	“Lack knowledge of laws and rights” (Health personnel); “Not aware” (Primary school educator); “I don’t know much about laws that protect SRH and the life of young girls” (Urban male parent).	All
Weak implementation of policies	Weak implementation of policies	“Weak implementation of policies” (Health personnel).	All
No consent	Some refuse to consent to participate, or their parents do	“Some give consent while others don’t want to” (Health personnel).	Health personnel Legal personnel
This crisis context			
Hinder sexual education	The crisis has hindered education or other mechanisms that could enhance sexual awareness.	“This is one of the challenges that has greatly impacted negatively on sexual awareness” (Secondary school educator).	All
Facilitator of promiscuity	The crisis has facilitated social problems that hinder	“Has exposed many to social ills” (Secondary school educator); “The crisis has made young girls get into sexual	All

	sexual awareness and control of adolescent girls, thus fostering promiscuity.	activities” (Secondary school educator); “The crisis has also caused disorder, promiscuity” (Urban male parent).	
Family socio-economic challenges	The crisis has placed many families in socio-economic difficulties, thus making their girl child more vulnerable.	“Many displaced families have difficulties in accommodation, so making some of the children go astray” (Secondary school educator).	All
School drop-out	Many adolescent girls have dropped out of school because of the crisis and are therefore exposed to many sexual ills.	“Crisis causes a lot of promiscuity since the girl child stays at home without going to school and some parents don’t educate their children on sex” (Secondary school educator).	All
Increase unwanted pregnancy	Increase unwanted pregnancy as many girls have become pregnant	“Many girls have become pregnant” (Health personnel).	Health personnel Parents/community Social affairs Educators
Traumatization and complete shutdown	Traumatization and shutdown, as some girls in conflict areas have been so traumatized to an extent that they don’t feel comfortable talking to people because of their sad past experiences	“Some girls in conflict areas have been so traumatized that they don’t feel comfortable talking to people because of their experiences in the past” (Health personnel); “Some who have been assaulted find it difficult” (Health personnel).	Health personnel Parents/community Social affairs Educators
Insecurity	Insecurity making outreach challenging	“Insecurity” (Health personnel).	All
Displacement	Challenging to handle displaced people.	“Displacement” (Health personnel); “Yes, because she meets with people from different areas and with different behaviors, attitudes” (Urban male parent).	All
Limited access to services	Limited access to services due to the crisis	“Limited access to services during crisis” (Health personnel).	Health personnel
Poverty	Poverty	“Poverty” (Health personnel).	Health personnel Parents/community Social affairs Educators

Barriers were multi-dimensional, ranging from communication and cultural factors (beliefs and taboos) to equipment/logistics, economic constraints, societal factors (beliefs,

taboos, behavior, lifestyle, or attitudes of people in the community), psychological factors (acceptance by the girl), the health system, legal issues, and crisis contexts.

Regarding communication, shyness, language barriers, distance in remote areas, confidentiality, surprise, lies, aggressiveness, and despise / indifference, and misinterpretation, it was challenging for educators to introduce the topic or start a conversation about it. Preference for the boy child while neglecting the girl, taboo and religious beliefs were sources of concern. Equipment/logistics were not adequately available, as were translators. Regarding the family's economic context, it was argued that it would have no impact if the child was well brought up, though providing basic needs was advocated. Further concerns were stigmatization of victims of rape, male favoritism and impunity, ignorance/shyness,

inadequate awareness, negative role models, and male educators as taboo. Regarding psychological factors and acceptance, participants pointed to low acceptance, low self-esteem, varied reactions, and indifference/despise. Regarding the health system, parents perceived it as business-oriented. The legal context was characterized by inadequate laws and regulations, limited knowledge, and weak implementation. The crisis context hindered sexual education, facilitated promiscuity, fostered family socio-economic challenges, school dropout, increased unwanted pregnancy, traumatization and closeness, insecurity, displacement with socio-economic consequences, limited access to services, and poverty (Table 10).

Table 11. Stakeholders' Perceptions of Things that Should be Done to Improve and Sustain the Sexual and Reproductive Empowerment of the Adolescent Girl

Code	Code Description	Grounding		Quotations
		n	%	
Sustained and early home-based education	Early education at home, parental involvement in sexual abuse, body safety, measures for self-defense, safe sexual and reproductive life, consistency/perseverance, and friendly communication.	52	74.3	"Talk to them early" (Rural female parent); "Yes, for me the knowledge that we give them will empower them, as they always say that knowledge is power, so the knowledge that we give them is enough to empower them" (Urban male parent); "Communicating, advising" (Urban male parent); "It has to start from their parents; the education should start from their parents" (Rural male parent)
Sustained and intensified community-based education	Sustained and intensified community-based education by providing continuous education and awareness programs on sexual and reproductive health for young girls in the community.	45	64.3	"Teachers, parents and people of good will should put heads on desk to educate children as early as possible" (Rural male parent); "We do door-to-door outreach" (Health personnel); "Community leadership and engagement" (Health personnel); "Intensify sensitization, education (Health personnel); "Proper sexual and reproductive health education, gender sexuality, respect of girl's right, laws protecting girls from abuse" (Health personnel).
Providing needs	Providing adolescent girls' needs.	39	55.7	"Provide their basic needs" (Rural female parent). "We have to make her know the

				good and the bad; we have to take care of her too, help her buy some of her things because some girls fall into temptation, they start having money from boys, and that is where they start sleeping with them” (Urban male parents).
Policy implementation	Strengthening enforcement of laws.	33	47.1	“Strengthen enforcement of laws, involve authorities and health institutions” (Health personnel).
Sustained, early and comprehensive / intensified school-based education	Early education in school, comprehensive / intensified education on sexual and reproductive empowerment, formal consideration in the curriculum.	27	38.6	“I feel like they should place more emphasis on that in schools because the lessons are very shallow; they don’t really take time to educate them, to tell them how to calculate their menstrual cycle, things like that” (Urban female parent); “It should be put in the school curriculum” (Secondary school educator).
Trust, patience, friendly, accessible language, confidentiality	Build trust by making them feel safe and comfortable; be patient, friendly, and confidential; use simplified, explicit language they can understand.	21	30.0	“Make them feel safe and comfortable” (Health personnel); “Create a friendly environment” (Health personnel); “Patience” (Health personnel); “Politeness” (Health personnel); “I simplify to them using the local language for understanding” (Health personnel); “Struggle to assure about confidential matters” (Health personnel).
Mass media	Use of mass media like radio and television; this also helps to address low access to services in remote areas.	15	21.4	“Even at radio stations, even at TV stations where it can be included as a program to teach the girl child about sex education” (Urban female parent); “Media awareness” (Health personnel).
Counseling / psychological support / punitive measures	Counseling, psychological support, and assurance to increase self-esteem; punitive measures for stubborn ones.	12	17.1	“Counseling them” (Health personnel); “Reassure them that I am here to help” (Health personnel); “Girl child that don’t want to take advice, those very stubborn and lazy ones should be punished; if not, they will keep misleading the younger ones” (Urban parent).
Translator	Education using translators to palliate language barriers.	8	11.4	“We educate them using translators” (Health personnel); “I look for someone they share the same tribe” (Health personnel).
Church-based education	Church-based education.	7	10.0	“Let them go for bible study; they should have a session where they train both boys and girls” (Rural female parent); “Church” (Health personnel).

Pragmatic education	Use a pragmatic approach by bringing concrete examples to change perceptions.	7	10.0	“Bringing in other people's experiences” (Rural female parent); “Educate them by narrating stories about their culture and the reality of today” (Health personnel); “Educate them with practical examples” (Health personnel).
Legal empowerment	Educate them on legal frameworks that protect girls and women.	6	8.6	“Respect of girl’s rights, laws protecting girls from abuse” (Health personnel); “Respect of female rights” (Health personnel); “Laws to protect the girl child” (Health personnel).
Participatory approach	Adolescent participation in planning programs and outreach.	5	7.1	“Participation of the young girl in planning the programs for any outreach; Involving the young girls as ambassadors for any outreach” (Health personnel).
Proactiveness	Proactive self-initiative by finding materials in advance.	4	5.7	“Start sorting for products ahead of time” (Health personnel).
Educating negative role models	Extending education to children who are negative role models in the neighborhood.	3	4.3	“I just talk to the child with insistence, and when I can talk to any other child I do it” (Urban male parent); “Peer education” (Health personnel).
Punitive measures	Sanctions to be imposed on those who sexually abuse a girl or exploit them for commercial purposes.	2	2.9	“Severe sanctions should be imposed on those who sexually abuse a girl in school” (Primary school educator); “You need to condemn the practice especially for those trying to commercialize it” (Secondary school educator).
Curb laziness	Address lazy adolescent girls, as it exposes them to avoidable temptations.	2	2.9	“The lazy ones” (Rural male parent).
Family planning	Education on family planning.	2	2.9	“Family planning” (Health personnel); “For those who are sexually active, they should be educated about family planning to prevent unwanted pregnancy” (Health personnel).
Controlled social media	Social media like Facebook, Internet, WhatsApp, YouTube, TikTok, etc. should be controlled.	2	2.9	“Social media” (Rural female parent); “Social media: young girls consume a lot of adult content, which confuses their reasoning” (Secondary school educator).
Self-provision	Self-provision of education tools such as charts and videos.	2	2.9	“Making use of sexual and reproductive charts and videos” (Health personnel); “I use my phone to play practical videos for better understanding” (Health personnel).

Mood-oriented education	Mood-oriented education, that is, educating when the child is in a good mood.	1	1.4	“For me, one thing we can do is just by advising her by talking to her; do this when she is comfortable and happy, when you do something nice to her, because if she is not happy, she might not open up” (Female urban parent).
Control	Controlling the child.	1	1.4	“Communicating, advising, even controlling them; always communicating, advising” (Urban male parent).
Regular screening	Screening to adjust health issues proactively.	1	1.4	“Regular screening” (Health personnel).
Economic empowerment	Economic empowerment.	1	1.4	“Being empowered with other trade” (Health personnel).
NGO support	Support from NGOs.	1	1.4	“Support from NGOs” (Health personnel)
Early vaccination	Vaccination at a younger age to stop STDs.	1	1.4	“Vaccination at a younger age to stop STDs” (Health personnel).
Youth-friendly health services	Accessible youth-friendly health services.	1	1.4	“Accessible youth-friendly health services” (Health personnel).
Mobile health services	Mobile health services to attend to displaced people.	1	1.4	“Mobile health services” (Health personnel).

N=70

Stakeholders’ perceptions of what should be done to improve and preserve the sexual and reproductive empowerment of adolescent girls included sustained, early home-based education; sustained, early, and comprehensive/intensified school-based education; sustained and intensified community-based education; and awareness and education through mass media for the major ones. Nevertheless, other suggestions should not be neglected, given the study's qualitative theoretical perspective, though it applied positivism to further reduce the abstraction of the information (Table 11).

Discussion

The study aimed to dissect the pathway to SRHE for adolescent girls, identify the inherent challenges, and propose a framework to strengthen this crucial developmental stage in a resource-constrained setting: the Southwest region of Cameroon, which has faced a socio-political crisis since 2016. Though adolescent girls generally portrayed a satisfactory level of SRH empowerment, the paradox was a high

rate of early sex, early pregnancy, and low willingness to use contraceptives. Adolescent girls with no alternative source of income, for those who were of age to engage in income-generating activities, engaged in sex earlier; those with dead parents were critically exposed to early sex; the same for those living with their mother or a friend. Adolescent girls’ indulgent sex cut across rural and urban areas; in the context where both parents engaged in SRH education, adolescent girls were least likely to engage in sex early, the same with married parents. Parental leadership style was not actually a hindering factor, as parents were generally not permissive when it came to paying attention to the sexual life of their adolescent girls, and did not entertain taboos related to this. It was earlier argued that effective communication between parents and adolescents regarding sexual health and relationships is important, given the potential contribution to adolescents as far as the adoption of safer sexual behaviors is concerned [16]. Talking about sex was generally not taboo

in the communities, though this problem was not completely absent. The health system's contribution to SRH empowerment of adolescent girls was acknowledged, though a palpable proportion perceived it as inadequate or insufficient; the same applied to the school environment, where, in secondary school, this remained somewhat informal or embedded in some subjects, though teachers took personal initiatives in this respect. This corroborates other aspirations [17], arguing that the school environment's contribution to adolescents' SRH should not be limited to SRH education as generally prescribed in the school program but should also consider teachers' personal initiatives to counsel and help adolescents shape their attitudes and behaviors toward safer SRH practices.

With respect to individual indicators, adolescent girls acknowledged the importance of SRH education and the fact that it should not be taboo to talk about sex to adolescents; they had positive behavioral intentions as they felt predisposed to receive SRH education, and that they could adjust their sexual lives and felt stressor factors for self-adjustment such as stress and anxiety. However, qualitative data heavily highlighted low self-esteem and low self-efficacy, as shyness was often reported, thus aligning with other studies [13] that found that poor communication skills, social shyness, and lack of knowledge were potential barriers to a safer sexual life. Poor attitudes were also reported, especially when interacting with parents, as parents often face disdain from their children. Adolescent girls being exposed to rape and other traumatic experiences were highlighted by stakeholders. The alarm was raised earlier [18], and it was stressed that the rates of depression, anxiety, and suicidal tendencies remain high among adolescents when exposed to sexual abuse and teenage pregnancy. Stakeholders reported that adolescent girls engaged in sex for money, thus questioning the appropriateness and readiness of their behavioral intention. This is not

peculiar to this study context, as it was earlier reported that young women expected money and material goods not only from older partners but also from agetates, and young men expected to give something for sex. Thus, "transactional sex" is more widely reflective of adolescent relationships [19]. Regarding the empowerment dimension, they acknowledged their ability to make informed SRH decisions, the availability of SRH information and services, the actual utilization of SRH resources or services, and the effectiveness of resources and services.

It was recommended that information availability and accessibility, education and communication (IEC) materials, peer education and activities to promote services, and the community-directed approach, supported by community health workers (CHWs), be enhanced to improve SRH among youth [20, 21]. In this study context, while the community-directed approach with CHWs alongside formal health personnel was acknowledged, limited resources and equipment were noted as drawbacks. The legal context was perceived as paying sufficient attention or acting as a deterrent to potential instigators of adolescent girls into risky sexual behavior. Adolescent girls were also knowledgeable of their basic rights in this respect, as they were generally aware of the fact that nobody should force them into having sex, that nobody has the right to abuse their private parts, the right to choose their life partner, and the right to SRH education. However, stakeholders described a confused, unstructured legal framework, and many were unaware of it. Among others, a major loophole was that although some unstructured laws and regulations existed, their effective implementation remained highly questionable [22]. The health system presented enormous assets toward fostering the SRH of adolescent girls. Adolescent girls reported that they could freely access health facilities, received systematic SRH counseling at the health center, and were sensitized on SRH by

community health workers and health personnel at the community level. Many received SRH education and counseling through various health system outreach mechanisms. Health personnel made many efforts but faced hurdles such as language barriers, equipment shortages, and difficulty reaching remote areas due to the crisis and poor road conditions during rainy seasons, as well as parents not having phones and poor mobile network coverage in some areas.

The availability of health services and counseling was among the recommended approaches to enhance healthy sexual and reproductive health [23, 24]; information, education, and counseling, as appropriate, on human sexuality and reproductive health are major components of sexual and reproductive rights [17]. Community and socio-cultural norms were generally conducive to a sound sexual and reproductive life for adolescent girls. Adolescent girls generally acknowledged that early sex, multiple partners, and premarital sex were taboo, unlike talking about sex. Among others, men were not actually tolerated for abusing girls sexually, and parents did not generally decide when a girl should get married and to whom. It was earlier emphasized that sociocultural norms such as parents' religious beliefs and cultural taboos are barriers that influence sexuality-related conversations among parents and adolescents [25-27]. However, several barriers to the sexual and reproductive health of adolescent girls were depicted by the study. In this conflict and fragility context, adolescent girls generally raised concerns about the fact that displacement to a different locality caused negative changes in their lifestyle, exposing them to risky sexual behavior, chaos, promiscuity, and lawlessness exposing youth to risky sexual behavior; the same with hardship caused by the socio-political crisis in their family and social environment, which has also disrupted education, caused school dropout, and further exposed youth to risky sexual behavior.

Peer influence [28], low self-esteem, and social taboo were also highlighted. Stakeholders' perceptions of things that should be done to improve and sustain the sexual and reproduction empowerment of the adolescent girl ranged from sustained and early home-based education; sustained, early and comprehensive / intensified school-based education; sustained and intensified community-based education and awareness; education through mass media; church-based education; legal empowerment; providing needs; punitive measures; family planning; controlled social media; mood-oriented education; controlling the adolescent girl; regular screening; economic empowerment; support from NGOs; early vaccination and youth friendly health services; participatory approach by involving the young girls in education and sensitization programs. Young people's participation in the development, implementation, evaluation, and advocacy of AYSRHR interventions improves their effectiveness [21], so participatory approaches should give sufficient attention to integrating them into such programs at different levels.

Conclusion

SRH empowerment of adolescent girls was a major preoccupation for various stakeholders, who undertook proactive and reactive actions at different levels. Education on SRH mostly started at early adolescence, that is, between 10 and 13 years, because it is perceived as the reasoning age, the onset of puberty, and to enhance self-control. The unsafe and risky nature of the social environment that predisposed adolescent girls to unwanted pregnancy, risk of rape, and other sexual abuses, abortion and associated risk, as well as STIs and substance abuse was a salient trigger to SRH education of adolescent girls and was at the same time one of the main things stakeholders discussed with them besides enhancing ability to identify sexual predators and reporting, the aptitude to choose a partner,

cautioning on the risk of premature sex, the need for abstinence enhancing their ability to self-control and self-protection while raising awareness to the risk of unwanted pregnancy, STIs, peer pressure, teaching them signs of puberty as reflected on the body and associated risks, and how to care for the reproductive organs. Though evidence indicates that SRH empowerment was not actually a major problem in this study context, the impact was questionable, as though empowered, adolescent girls still indulged in sex relatively early. Among others, though adolescent girls generally said to be aware and to have access to either form of contraceptive methods, their willingness to use them was relatively low except for condoms. Teenage pregnancy was relatively high. Critical predictors of age at sexual debut were the inadequate economic emancipation of adolescent girls, the high vulnerability of those with dead parents, those in a single-mother home or living with a friend, and the conflict and fragility context. To improve and sustain the sexual and reproductive empowerment of adolescent girls, it was suggested sustained and early home-based education; sustained, early and comprehensive / intensified school-based education; sustained and intensified community-based education and awareness; and education through controlled mass media. Refining and structuring policies in a multi-sectoral collaborative dynamic is a prerequisite for achieving our vision of effective and sustainable SRHE for adolescent girls.

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 the adolescent girl, the following recommendations were made:

Ending the socio-political crisis rocking the region since 2016;

Enhancing education and awareness at home, in the community, in schools, in health centers, and through mass media and social media while controlling for unsuitable content;

Enhancing collaboration among stakeholders; and

Fostering a participatory approach in which adolescent girls are active actors where conducive, notably in actions geared toward enhancing their SRH empowerment.

Acknowledgements

The authors sincerely thank the study participants, research assistants, and Tiko District Health team members, as well as key informants at institutional, community, district, regional, national, and international levels, for their support and contributions to this research. Their dedication and collaboration were instrumental in successfully completing this study.

Disclaimer

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

Data Availability

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

Competing Interest Statements

The authors declare no competing interests regarding this study and publication, and all data used are available.

Author 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.

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Funding

This study was conducted as part of a Ph.D. program and received no external funding from public, commercial, or non-profit organizations.

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