"The internet hides nothing": Kenyan adolescents' experiences with sexual and reproductive health (SRH) education

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Abstract

"The internet hides nothing": Kenyan adolescents' experiences with sexual and reproductive health (SRH) education

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Background: Sexual and reproductive health (SRH) education is critical to adolescent development, promoting safe and responsible sexual behavior. However, access to SRH information among adolescents could be limited by negative health worker attitudes, socio-cultural influences, and distances to health care facilities.

Objective: This study explores Kenyan adolescents' sources of SRH information, their experiences with these sources, and their recommendations for improving SRH information access.

Methods: The study employed a qualitative design, utilizing data from focus group discussions (FGDs) conducted via Zoom and WhatsApp. Participants were recruited through Kenyatta National Hospital's youth center and WhatsApp-based peer recruitment. Six semi-structured FGDs involving 33 adolescents were conducted in English. Thematic analysis was performed using Dedoose software.

Results: Adolescents identified substantial gaps in SRH education provided by different sources, caregiver and teacher discomfort in discussing relationship and sex-related topics, and lack of practical, real-life information. Digital media emerged as a primary source of SRH information and was seen as accessible, private and non-judgemental. Participants expressed the need for interactive and demonstrative teaching methods to enhance SRH education.

Conclusion: Among adolescents in Kenya, digital sources of SRH information addressed gaps and challenges with SRH information access. Efforts to tailor and enhance digital SRH information for adolescents and address caregiver/teacher gaps in providing information are needed.

Keywords: Sexual and reproductive health, adolescents, Kenya, digital media, education, qualitative study.

Introduction

Adolescence (ages 10-19) is a transition period between childhood and adulthood. During this time, adolescents experience different physical, psychological, and cognitive changes[1]. Adolescent boys and girls may experience growth and development differently due to a combination of social and biological factors[2]. The experience tends to vary depending on one's culture, socio-economic status, religious beliefs, and digital media exposure, among other factors. During this time, adolescents establish behavior patterns related to diet, physical activity, substance use, and sexual activity that can either protect their health and that of others or pose risks both presently and in the future [1]. While often seen as a healthy phase of life, adolescence carries a substantial burden of preventable deaths, illnesses, and injuries [1].

Sexual and reproductive health education is essential to adolescent development and is crucial in promoting safe and responsible sexual behavior. In Kenya, adolescents encounter obstacles in accessing sexual and reproductive health services and information, including negative attitudes among healthcare workers, geographical distance to healthcare facilities, prohibitively expensive services, the absence of privacy and confidentiality measures, and sociocultural influences such as religion [3,4]. Studies recommend adolescent involvement in sexual and reproductive health research to add knowledge on practical and relevant services, programs, and policies that reflect adolescents' needs [5,6,7]. Adolescents have various sources from which they can access sexual and reproductive health information, including schools, healthcare facilities, clinics, non-governmental organizations (NGOs), community-based organizations, churches, peers, and social media le [31,32,33,34]. Among these, schools play a critical role in delivering sexual health education to adolescents. The government has integrated sex education into the school curriculum, aiming to provide students with age-appropriate and accurate information about sexual health [8]. However, limited resources, inadequate teacher training, conservative cultural attitudes, societal stigma, confidentiality concerns, and judgmental care providers collectively hinder the effective implementation and accessibility of sexual health information and services for young people [9,10,11].

Digital and social media platforms substantially influence the sexual health education-seeking behavior of adolescents. The advent of new digital media, like the internet, text messaging, and social networking sites, has transformed how young people communicate[12]. These platforms offer innovative ways to engage adolescents in promoting sexual health and reducing risks [13]. From a systematic review of interventions using new digital media to improve adolescent sexual health, knowledge-based measures were positively impacted in six out of ten abstracts, primarily in the areas of Human Immunodeficiency Virus (HIV) and Sexually Transmitted Infections (STIs) [12]. However, some studies have observed that use of social media as a source of sexual and reproductive health information by adolescents might lead to risky sexual behaviors [13]. A study conducted among 331 undergraduate students in Kenya found that all participants had Facebook profiles, and activities like sending sexually suggestive messages, meeting online acquaintances in person, and accessing pornographic content online were prevalent. Notably, those engaged in these activities were more likely to have multiple sexual partners and inconsistently use condoms [14]. While cross-sectional studies like this cannot

determine the direction of the association between social media use and risky sexual behavior, this calls for further research to understand the nature of this relationship and ensure that adolescents can safely access Sexual and Reproductive Health (SRH) information.

The *Sauti ya Vijana* project was conducted to explore innovative technology-driven approaches to engage adolescents in Kenya. This analysis uses data from WhatsApp and Zoom Focus Group Discussions (FGDs) collected in the Sauti ya Vijana study to explore adolescents' sources of SRH information. This thesis focuses on the findings of the qualitative work.

Methods

Study design

This qualitative research study utilized data from a larger study (*Sauti ya Vijana*), assessing innovative technology-driven approaches to engage adolescents in Kenya. The primary study aimed to determine the demographic differences between adolescents identified through WhatsApp recruitment compared to those seeking care in health facilities and compare the quality and content of WhatsApp versus Zoom FGDs.

Study Setting

This study was conducted at the Kenyatta National Hospital (KNH), located in Nairobi, the capital and largest city in Kenya. As a national referral hospital, KNH plays a pivotal role in offering a comprehensive spectrum of preventive and curative health care services for both in-patient and out-patient settings. KNH has a youth center that focuses on youth health services including HIV testing, mental health services, family planning, and screening for STIs. Participants were recruited through the KNH youth center (facility recruited adolescents) or through WhatsApp-based peer recruitment (WhatsApp recruited adolescents).

Data collection

Facility recruitment enrollment: Adolescents attending outpatient clinics at KNH and the youth center were recruited and were eligible for enrollment if they were interested in the study, had access to a WhatsApp-enabled phone, and were willing to use their WhatsApp account for the study. Eligible and interested participants provided electronic consent, and they had the option to participate in FGDs on WhatsApp or Zoom.

Focus Group Discussions (FGDs)

Six semi-structured FGDs were conducted via Zoom and WhatsApp platforms; three WhatsApp FGDs about three hours long each, and three Zoom FGDs which lasted for about one hour and a half. These FGDs involved voice only discussions for Zoom groups and chats including written texts and emojis for WhatsApp participants. All FGDs were conducted in English since all participants chose English as their preferred

language. The facilitator, a female social scientist and a note taker could speak fluent Kenyan slang known as Sheng, English, and Swahili. Participants had no knowledge of the facilitator and no relationship between the facilitator and participants was previously established. The facilitator had a predetermined set of questions that guided the conversation. These questions were derived from the Kenya National SRH curriculum and they covered adolescent knowledge about body changes, relationships, and STIs as well as their experiences in seeking information about body changes, relationships, and STIs. Questions explored adolescent experience with teaching methods and comfort levels in body changes education, trusted sources for SRH information, conflicts in information from various sources, decision-making factors in relationships, and knowledge about STIs. Audio-recordings were transcribed verbatim and translated as appropriate. Transcripts were not returned to participants for review.

Data Analysis

Dedoose was utilized for qualitative data management and analysis. A team of three coders created both the initial and final codebook. Predetermined codes were derived from the questions used in guiding focus group discussions to create the deductive codebook. Following this, a primary and secondary review of six transcripts was conducted. This helped identify concepts emerging directly from the transcripts that may not have been captured by the guiding questions and created the inductive codebook.

To ensure the codebook's consistency and reliability, the team met weekly to discuss codes, establish a shared understanding, and address any discrepancies. Additionally, the team continually reviewed and adjusted the codes to ensure they accurately reflect the underlying themes and patterns. Researchers engaged in continuous reflection to explore alternative interpretations of the transcripts, ultimately agreeing on the final codebook. For each code in the final codebook, the team created code summaries which defined codes, presented their applications in transcripts, and provided supporting quotes from the transcripts.

The team then organized and categorized the data into meaningful concepts to identify themes related to youth experiences with different sources of sexual and reproductive health (SRH) information, challenges and outlined their recommendations for improving access to SRH information.

Results

A total of 33 adolescents participated in FGDs, 13 in Zoom and 20 in WhatsApp format. Interviews lasted and average of 125 minutes (169 WhatsApp and 81 minutes for Zoom FGDs)

Our findings on sources of SRH information, content covered, and differences in how information is packaged across different sources reflected what has been observed in the broader literature (Table 1). Findings identified included the following key themes:

1. Adolescents prefer digital media as a source of SRH information
2. Teachers and parents are not comfortable discussing relationship and sex-related topics

3. Adolescents struggle with translating knowledge into actionable behaviors
4. Demonstrative teaching methods and open discussions are were desired SRH teaching methods

Adolescents preferred digital media for SRH information

Participants found Google a valuable resource for learning about sensitive topics for example related to the menstrual cycle. The fear of judgment from parents or friends makes them turn to Google, which offers privacy and avoids potential social stigma associated with SRH.

> *R6: According to me, I support number 2 on google ... .For example, on menstruation, after it begins then after a while if you miss your periods, definitely you will not go tell the parent or even a friend that you just missed the periods. Since some people are good at judging others, they will think you have had sex. Because of that fear if I go to "Mr google"*

> *R1: I think they take advantage of going to google because of fear, for my friends they could ask me, but they are not sure I will keep a secret for example. (Inaudible) … If I feel I am not safe giving my ideas or sharing my feelings with him, I will decide to go to google because I fear the confidentiality of the person. Thanks.*

Another participant pointed out that the internet's ability to provide detailed and complete information on any searched topic makes it an attractive and dependable option for adolescents seeking SRH information.

> *R2: ……but nowadays the internet hides nothing. As long as you search for a certain concept, it will show you the details in full.*

Teachers and parents not comfortable providing SRH information on some topics

Adolescents noted parental and teacher discomfort discussing certain topics, particularly those related to relationships and sex. As one adolescent shared, while parents were willing to address practical questions like managing menstrual periods, they avoided discussions about when it is appropriate to start dating.

> *Interviewer: "what kinds of questions do you think the older siblings/friends or mums could answer or not answer?"*
> *R1: They could answer your questions on when you get periods what you should do and how to react but questions concerning what the right time is to have a boyfriend is they really avoided that topic"*

One adolescent mentioned that they feel embarrassed to talk with their parents about some subjects, preferring to confide in older friends instead.

R1: Personally, I would speak with my friends because there are some things that we feel embarrassed to talk with our parents. For me I have older friends whom I could go and speak to …

Translating knowledge into actionable behavior

Some adolescents shared that they found it difficult to practice what they learned in class due to a lack of practical examples or hands-on experiences provided by their teachers. This gap between theoretical knowledge and practical application reportedly hindered their ability to fully understand and internalize the concepts being taught.

R2: … I remember one scenario where there is a day a girl in our class had an accidental mess ….. All of us had the teacher's concept and nobody was able to think outside the box. Instead of us telling her to use a different method to handle the mess, guess what we told her, (laughs) we told her to visit the bathroom, take a shower and come back with the same clothes. We were not able to suggest to her to go and use a sanitary towel because we did not know.

Adolescents shared that they would feel better if teachers shared their experiences growing up. It would make them feel comfortable discussing growth related issues with them. When educators open up about their personal journeys and challenges they faced while growing up, it created a sense of connection and empathy between them and their students. Adolescents expressed that knowing their teachers have gone through similar experiences made them feel understood and less alone in their struggles.

R2: What if the teacher uses an example of him or herself when explaining to the students like telling them, I have been through this. Do not feel shy; this is what happens to people. I think students will feel extremely comfortable to be in that environment. They would think, if the teacher underwent this, why not us. That way the lesson will make sense to the students when the teacher is the reference.

Recommendations for improving SRH education

Adolescents suggested ideas that helped or might help to improve their learning experiences include open and honest discussions, using visuals, and a student-centric approach to enhance understanding,, and encouraging discussions on STIs.

R2 - Zoom FGD 1 RDS: We should not run away from it (STI) or avoid it; we should talk more frequently about it. It should be taught even outside school and even on social media because currently many people are ailing, you get sick, and you keep silent because you do not want to be judged or laughed at.

R2: … the teacher should take the students data in a class, check the age bracket or conduct a survey and look at whether he can be able to make references with the students at this age. To check what

they are comfortable with and what they are not comfortable with, so I think the teacher should take a survey and consider the interests of the children or the students so that he knows where to base his arguments when teaching.

Some participants also suggested that using a demonstrative teaching method will help them to translate knowledge into actionable behaviors.

R2: The teacher was too shy to tell us that thing (sanitary towel). I think a demonstrative style should sometimes be used.

In reflecting on methods of teaching SRH content, adolescents contrasted traditional and pragmatic teaching techniques. While traditional methods like lectures and reading from textbooks were common, there were instances where practical learning through demonstrations or real-life examples was highlighted by participants as a more effective way of understanding the subject matter, especially when it came to sensitive topics.
Some participants also suggested that using a demonstrative teaching method will help them to translate knowledge into actionable behaviors.

R1: In primary [School], we were taught using books and video clips but where I am now, we are doing these things practically. We check on how development look from one stage to another. We are doing it practically.

However, not all adolescents appreciated the practical teaching, particularly from teachers who were a different gender.

R2: … he was a very open teacher so he… actually he was a male teacher… for example in the menstruation cycle, he would pick a sweater and demonstrate how things will be for us when we reach that stage, how we will behave and what will happen if we mess. That way though I didn't like it personally

Discussion

Adolescents highlighted four key themes related to access to sexual and reproductive health (SRH) information. Firstly, they heavily relied on digital media as a source of SRH information, which they viewed as easily accessible, non-judgmental, and private. Secondly, they pointed out that teachers and parents are not comfortable discussing relationship and sex-related topics. Thirdly, adolescents identified gaps in the information they received, noting that it often relied more on theory and was less practical and real. Lastly, they emphasized the importance of fostering an inclusive and engaging learning environment. This could be achieved through approaches such as open age appropriate discussions and using a demonstrative teaching style to enhance their understanding of SRH topics.

Similar to other studies, we found that adolescents in Kenya view digital spaces as inherently private and conducive to exploring sensitive topics without fear of judgment or disclosure [15]. Availability of smartphones and internet connectivity facilitates access to a wealth of resources especially in visuals, ranging from educational websites to social media platforms. Future studies to understand how to harness digital media to provide accurate and practical information to adolescents are needed to ensure access to safe sites and education on responsible use of digital media and credible sources of information. Programs such as Be Internet Awesome by Google [16] and NetSmartz by the National Center for Missing & Exploited Children [17] can be replicated in efforts to improve digital literacy specifically on health-related topics.

Similar to other studies, we observed that adolescents experience different challenges while seeking sexual and reproductive health information and access [18, 23, 24]. Our results point out the discomfort among teachers and parents when it comes to providing SRH information on relationships and sex-related discussions. This avoidance creates a barrier to comprehensive SRH education, leading some adolescents to seek information from the internet where they feel less judged and more comfortable. The sense of discomfort can be a result of adults' definition of protecting adolescents, which often prioritizes shielding them from discussions about sex-related topics rather than equipping them with knowledge. Parents worry that giving SRH information to adolescents will encourage sexual activity; however, research consistently shows that comprehensive SRH education rather delays sexual initiation and promotes safer practices [22]. Among adults, there is a preference for abstinence-only SRH education over abstinence-plus education [19, 20, 21]. Participants also highlighted the challenge of navigating conflicting information from various sources such as school, church, home, friends, and social media. Platforms such as AMAZE by Planned Parenthood and HealthyChildren.org by the American Academy of Pediatrics can be great support resources for parents [29, 30].

We found a gap between theoretical knowledge acquired in educational settings and its application in real-life situations. Adolescents expressed frustration at the lack of practical examples or hands-on experiences provided by teachers, which hindered their ability to internalize SRH concepts fully. Without real-life scenarios and interactive learning opportunities, students found it challenging to understand and apply the information to their own lives. This gap in teaching methods often left them feeling unprepared and uncertain about how to handle SRH issues effectively. As a result, the educational experience failed to equip them with the necessary skills and confidence to make informed decisions regarding their sexual and reproductive health. As observed in other studies, adolescents highlighted that the use of real-life stories from trusted adults could help them further understand SRH topics, making them feel more comfortable and confident [26]. Kenya has had a robust teacher-led national primary school HIV intervention program involving peer discussion and role playing [25]. Extension of such programs into the general SRH education curriculum can be useful in addressing this knowledge gap.

Strengths and Limitations

Our study had some limitations. The adoption of respondent-driven sampling, while advantageous in reaching populations reluctant to discuss stigmatized subjects, introduces sampling bias. Adolescents who are less socially connected, those who have no access to WhatsApp, those living in other cities or in rural areas or hesitant to engage in discussions about sensitive topics might be underrepresented [27, 28]. Consequently, the findings might have not captured the diversity of experiences and health-seeking behaviors and experiences among adolescents. On the other hand, this study had several strengths. The study utilized digital platforms for both recruitment and data collection, which reflects an innovative and contemporary approach to engaging with the adolescent population.

Conclusion

Our study suggests that adolescents predominantly rely on digital sources for sexual and reproductive health (SRH) information, particularly for questions that parents and teachers are uncomfortable addressing. Digital media was seen as reliable, non-judgemental and comprehensive. As adolescents turn to the internet for SRH information, ensuring they can navigate these resources safely and effectively becomes paramount. The identified gaps in SRH knowledge among adolescents calls for the urgent need for comprehensive, inclusive, and demonstrative SRH education programs and support for teachers and parents or caregivers.

TABLES & FIGURES

Table 1: Findings about sources of SRH information, content covered, and conflicting information

Themes	Findings	Quotes
1. Sources of information are varied	Adolescents identified teachers, family members, friends, clinicians, and online resources such as Google as sources of SRH information. Their choices of these sources was reportedly rooted in feelings of trustworthiness, comfortability, privacy, reliability, validity, familiarity and accessibility. While some adolescents reported feeling comfortable speaking with their parents or a clinician, others shared that older friends were more comfortable, particularly with sexual health questions. Google was reported by many to be a trusted source for a wide range of information.	*R1: Personally, I would speak with my friends because there are some things that we feel embarrassed to talk with our parents. For me I have older friends whom I could go and speak to and they will tell me it is normal, the sexual ones but voice breakage, those ones I did learn in school, but sexual ones I would go and consult with my older friends.* *R1: Google has all the answers you need*
2. Puberty is natural and different in boys and girls	Adolescents expressed knowledge of puberty as a normal and natural part of growth, discussing its role on both physical emotional and psychological changes. Many respondents mentioned learning about both physical and emotional changes – menstruation, breast development, voice deepening, hair growth, mood swings, sensitivity, and changes in behavior – that occur as one grows up.	*R1: I learnt that in future I will experience changes in my body and when that happens, I should not mind because it is a normal process"* *R1: I was saying mental growth is also part of the body changes one undergoes for example a kid cannot think the same way as a grownup. As you grow your mind also changes, how you think, how you make choices to something.*
	Anticipating changes in their bodies as they approach puberty, some participants	*R5: I was really eager to see the changes.*

	expressed a sense of curiosity and excitement about the upcoming changes.	
	Participants acknowledged differences in pubertal changes and timing in boys and girls and among individuals. They expressed appreciation for gender separate education at school which made it more comfortable to discuss puberty. Adolescents expressed a feeling of comfort towards sessions that were separated by gender, reflecting cultural norms, peer support, reduced social pressure to conform to traditional gender roles, increased privacy and confidentiality, and a general sense of personal comfort.	*R3: The good thing was we were separated each time we had the lessons, boys were taught privately.*
3. Conflicting information is common and adolescent shave strategies to address it	In addition to the diversity of teaching approaches, adolescents wrestled with different and often conflicting information related to SRH. Adolescents encountered conflicting information on several topics, such as menstrual cycle delays, when it is appropriate to have a boyfriend, views on masturbation, causes of pregnancy, and the nature of growth (physical or mindset).	*R2: … I was once told that according to tradition if a girl experiences delays in her menstruation cycle, if she experiences a delay either, she will be barren in future, or it is abnormal. But in school, the teacher said the menstruation cycle depends on a person's hormones…* *R2: Google say Through deep kissing you might get HIV but in school through deep kissing you don't HIV.* *R4: There is a film called Sex Education which says masturbation is healthy whereas in school an advisor talked of it as evil.*

	Participants expressed feelings of confusion and uncertainty after receiving conflicting information about growth and sex. This made it challenging to form a clear understanding of the topic as a result of inconsistencies in information from different sources.	*"R2: What I heard differently about growing up… I know sometimes it's genetic and also not everybody that grows beards so you find if someone don't grow beards get surprised why they are not growing beards and think that they have not reached adolescence and even others hate themselves so I think that's the wrong side of the story, we should have being told such things are genetic, there are people who experience such and there are some who don't experience so when we get to that stage we don't get confused"*
	Adolescents shared diverse strategies for deciding what to believe from different conflicting messages, from evaluating various perspectives and aligning decisions with personal and parent's beliefs to relying on intuition and past experiences. These experiences prompted adolescents to find a balance between external influences and internal values to make informed choices.	*"R4: Am looking at the reasoning of all the sides then I decide which one I will follow, which one goes with my beliefs."* *"R2: Sometimes you believe what your parents believe"*
	Several participants pointed out that they heard conflicting information from various places, including school, church, home, friends, and social media. They expressed the challenge of navigating these conflicting messages.	*"R1: School church and home give almost the same information which is very contradicting from the information from friends and other places like social media"*
	In some discussions, participants specifically mentioned that churches provided conflicting information by avoiding giving detailed or realistic information,	*R2: The places that give the most conflicting information is the church, it avoids giving detailed information instead they only teach*

	mainly focusing on religious teachings. This led to difficulties in understanding real-world issues.	*us about being holy. They should give information in detail; they do not give the reality of the issue. When you do some things, they will judge you as being unspiritual.*

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