Trends and Challenges in Comprehensive Sex Education (CSE) Research in Sub-Saharan Africa: a Narrative Review

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Abstract

Purpose of the Review Adolescent sexual and reproductive health remains a major public health challenge in Sub-Saharan Africa (SSA). Comprehensive sex education (CSE) has been hailed as a key strategy to inform young people about sexual health and wellbeing and prevent negative health outcomes. This paper presents an overview of the trends and challenges around sex education in SSA and puts forth key recommendations for future research and policy initiatives.

Recent Findings This review employed a narrative approach to synthesize evidence on the implementation of comprehensive sex education in SSA. The literature review elicited four key themes: (i) comprehensiveness of CSE curricula, (ii) gender norms in CSE, (iii) prominence of 'fear' narratives in CSE implementation, and (iv) CSE delivery methods. Additionally, the authors propose a fifth theme—'Future-proofing CSE programs', based on their learnings from implementing sex education interventions during the COVID-19 pandemic. These five themes are presented through a narrative description of current research accompanied by reflections from the authors on the implementation of a parent-focused sex education program in Uganda.

Summary Based on the insights from the literature review and the authors' reflections, three recommendations are put forward to guide the design of further CSE initiatives: (i) stakeholder engagement in determining CSE priorities and strategies, (ii) diverse delivery pathways for CSE programs, and (iii) active engagement of both boys and girls to challenge gender norms in CSE.

Keywords Comprehensive sex education \cdot Sub-Saharan Africa \cdot Sexual and Reproductive Health \cdot Adolescent health \cdot Gender Norms

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Introduction

The proportion of young people aged 10–24 years in Sub-Saharan African (SSA) is one of the highest in the world and this trend is expected to continue [1]. Young people in SSA are at significantly higher risk of human immunodeficiency virus (HIV) infections and unwanted pregnancies [1, 2]. Notwithstanding the progress that has been made over the past decades, adolescent sexual and reproductive health (SRH) remains a major public health challenge in SSA and disproportionally affects adolescent girls, and other vulnerable minorities [1, 2]. In recent years, several SSA countries have begun to confront the question of how to inform children and adolescents about sexual health and wellbeing. Comprehensive sexuality education (CSE) aims at the empowerment of all young people to protect and advocate for their health, well-being, and dignity and focuses on several issues, such as



contraception, sexually transmitted infections (STIs), childbirth, relationships, gender roles, bodily autonomy, sexual abuse, and violence [3]. CSE is grounded in a gender equality and human rights approach that recognizes the unique needs of vulnerable youth groups, like LGTBIQ+ youth, youth living with disabilities, and youth living with HIV [3, 4]. Yet, many countries consider such issues culturally or religiously inappropriate and insist on an 'abstinence-only' approach, deferring sexual intercourse until marriage [4, 5].

Since the East and Southern Africa Ministerial Commitment on adolescents' sexual and reproductive health and rights (2013–2018) was signed by 20 countries, CSE has encountered notable progress and challenges in the region $[6 \bullet \bullet]$. This onerous journey is well encapsulated by the Ugandan government's contradictory stance on SE. After committing to CSE in 2013, Uganda's progress was upset by the 2016 parliamentary ban on sex education beyond abstinence [7]. This decision was later overturned with the Ugandan high court outlining a sexuality education framework to be reintroduced into schools [7••]. Across the SSA region, CSE policies and their implementation have been limited by social and cultural norms, religious opposition, irregular funding and weak monitoring, and accountability measures [5]. To understand developments in SE implementation and outline the scope for progress, it is important to consider the complex and evolving nature of the cultural and political landscape of SSA [8]. This paper provides a narrative review of trends and challenges around sex education in SSA and puts forth key recommendations for future research and policy initiatives.

Methodology

The review methodology was structured using Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines and adapted to incorporate a narrative approach [9]. A broad research question was used to frame the literature search: *What are the trends and challenges with regard to sex education programs in SSA?* The search question was broken down into two main components: 'sex education' and 'SSA,' and relevant keywords were identified to develop the search string (Appendix). Three databases, PubMed, Scopus, and Web of Science were searched for relevant studies from 15th November to 5th December 2022. Table 1 displays the search strings used for each database, with the number of hits returned from each database.

This review included papers describing sex education programs for youth and adolescents in the SSA region. The search only included papers focusing on youth or adolescent programs, while excluding those targeted towards adult populations. Only studies published from 2018 onwards were included, as this review focuses on the latest developments in sex education research. The review prioritized papers that described the design, evaluation, and implementation of sex education programs. Reviews of sex education programs and exploratory studies describing sex education research were not selected for inclusion, but insights from these papers were discussed. Figure 1 displays the process of selecting relevant studies at through title/abstract screening and fulltext screening. A total of 15 relevant studies describing sex education programs in SSA were selected for inclusion in this review. These studies were selected to represent diversity in geographical location, populations, sex education approaches, content covered, and challenges encountered. The insights from these studies are discussed in this narrative review paper, in relation to the broader context of SRH scholarship in SSA.

The insights from the literature review are further supplemented with reflections by the authors. The authors (DA, DF, EK, GZR, VN, and GC) have worked on the development and evaluation of a parent-focused sex education program in South-Western Uganda¹. The program employed a community-based participatory approach to develop an intervention to train parents of adolescents in sexuality communication. Community members were trained as facilitators to deliver the intervention to parents and caregivers, with the aim to promote parent–adolescent communication on sexual health. The authors found several parallels between the themes emerging from the literature review and their experience of implementing a SE program. These experiences are summarized as 'Lessons from the field' to accompany each thematic finding in the results section.

Findings

The review findings are presented as a narrative synthesis of the trends and challenges for comprehensive sex education in SSA. The literature review elicited four key themes: (i) comprehensiveness of CSE curricula, (ii) gender norms in CSE, (iii) prominence of 'fear' narratives in CSE implementation, and (iv) CSE delivery methods. Additionally, the authors propose a fifth theme—'Future-proofing CSE programs,' based on learnings from implementing sex education interventions during the COVID-19 pandemic. These five themes are presented below through a narrative description of current research accompanied by reflections from the authors on the implementation of a parent-focused sex education program in Uganda. Using a community-based participatory

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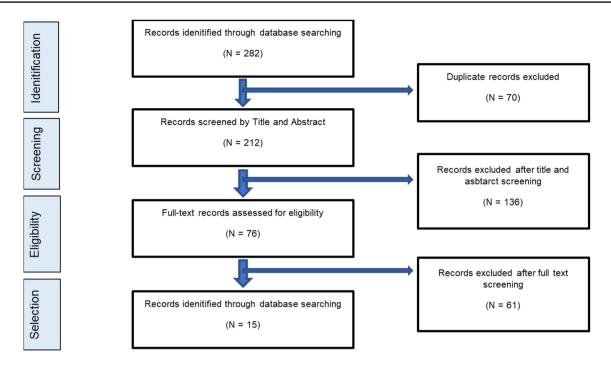


Fig. 1 Flow diagram of screening process based on PRISMA guidelines [9]. Source: original

research design, this project aims to improve communication between parents and young adolescents on SRH.

Comprehensiveness of Comprehensive Sex Education?

The scope of comprehensive sex education has been outlined as a broad curriculum encompassing social, emotional, cognitive and physical developmental aspects [5••]. However, several topics within this wide-ranging CSE curriculum have been hotly debated in the SSA region and continue to elicit significant controversy among local stakeholders [5]. Topics such as like abortion, homosexuality, and sexual pleasure are particularly contentious, with policymakers expressing concerns that providing such information would corrupt social norms and identities and erode children's innocence [5]. This creates a barrier in the implementation of CSE, with several SSA countries imposing restrictions on the scope of CSE curricula in schools. Even when policymakers adopt a more liberal approach, CSE educators themselves often limit the scope of the curriculum, by avoiding sensitive topics or introducing moral judgements in CSE teachings [10–12].

This gap between the planning of CSE programs and the actual implementation stems from concerns regarding the contextual appropriateness of CSE topics. A study from Tanzania illustrated this issue through an exploration of how young people perceive CSE programs within their lived reality [13]. Young Tanzanians described school-based CSE as "*not for use*" and expressed concerns that CSE programs were not designed to match the realities of "the Swahili streets" [13]. CSE teachings on trust and support in healthy romantic relationships were contrasted with personal experiences of adversarial and transactional relationships predicated around survival needs [13]. The study strongly indicated that young Tanzanians aligned CSE teachings with privileged Western "others" and did not see their experiences and challenges reflected in the curriculum [13]. Contemporary scholars have related this to the wider phenomenon of international norms and standards being imposed on African nations, irrespective of local needs and context [14].

Co-creation has been hailed as an effective strategy to bridge the disconnection between global norms and local implementation [15]. At the policy level, collaborative decision-making between policymakers and local stakeholders can lead to more relevant and timely agenda setting [16]. When translating policy agendas to practice, the participatory action research (PAR) approach provides a framework to develop practically feasible and appropriate strategies that match on-ground needs and capacities [17]. The Yathu Yathu ("For us, by us") project in Zambia is an example of successfully engaging young people in co-designing an SRH intervention [18••]. In this study, adolescents and young people were consulted to identify SRH needs and acceptable strategies to provide SRH information [18••]. Participants in this study stated preferences for accessing information from community 'hubs' (adolescent-friendly spaces) rather than health centers and regarding the age, sex, and training of the information provider [18••]. Such collaborative approaches can provide a roadmap to navigating cultural barriers and successfully implement appropriate CSE programs.

Box 1 Lessons from the field: how comprehensive is comprehensive sex education?

- The parent-focused sex education program in South-Western Uganda project adopted a community-based participatory approach to co-develop the intervention content. Through this process, community leaders, religious leaders, healthcare workers, and caregivers of adolescents were engaged to outline SRH topics that would be addressed by the intervention. Based on the feedback of these stakeholders, LGBT+ issues were excluded from the curriculum, while information around contraception and abortion were included. The cultural stigma around these topics was evident during the program implementation and evaluation. Caregivers participating in the intervention referred to contraception-use and abortion with negative connotations. Community members interviewed regarding the acceptability of the study expressed their appreciation that homosexuality was not included in the intervention content.
- Overall, the inclusion of culturally sensitive SRH issues in CSE curriculum is a complex dilemma. On the one hand, omitting information around abortion, sexuality, and LGBT+ issues neglects the needs of vulnerable young people. However, including sensitive topics could risk alienating potentially influential allies in the community, such as religious leaders and caregivers of adolescents. This could lead to such programs being banned or denounced within the community, which would limit their effectiveness in the long term. Furthermore, including such sensitive topics without consideration for the cultural nuances attached to these issues could lead to improper implementation where delivery agents censor these discussions or reinforce stigmatic beliefs.
- This has interesting implications in terms of knowledge development, where conventional notions of universal scientific learnings are challenged by the postcolonial approach of contextualizing knowledge. It would be useful for further work to delve into this philosophical question, as well as investigate the challenges and processes of developing CSE interventions that stem from global standards and are adapted to local contexts.

Source: original

Gender Norms and CSE

Gender norms in SSA are dominant in perceptions and beliefs about sexual behavior, with sexual activity being normalized for boys and stigmatized for girls [19]. These norms are visible in social practices that restrict agency and freedom for young women, while being more permissive to young men [20•]. Such stereotypes restrict the content of CSE curricula and also influence the implementation of these programs. The 'Get Up and Speak Up' SRH Program in Uganda uncovered differences in how young men and women experience the intervention [21]. Young women participating in the study reported feeling less able to express themselves when discussing sexuality issues with a partner and family member of health workers [21].

Considering the prominent role of gender norms in perpetuating negative SRH outcomes, gender equality has been proposed as an integral part of CSE programs and was outlined in the agenda of the 2013 Ministerial Commitment on SRH [6]. However, a UNESCO report on CSE implementation around SSA found that the focus on gender-sensitive topics has been weak or entirely neglected [22]. Furthermore, gender-sensitive information in school-based CSE is often detracted by gender stereotypes being imposed by caregivers and elders in the community. A study from Malawi reported that adolescents received contradictory messages on gender roles from their families and school educators [10]. This paper described cultural rites of passage, through which an '*anamkungwi*' (or 'key leaders') would guide adolescents into young adulthood [10]. Such training included girls being taught to cook and clean, while boys were instructed on how to act like a man [10]. The gender normative emphasis to such cultural practices disrupts efforts to achieve gender equality through CSE curricula.

Research on SRH programs that effectively promote gender equity indicates the importance of content that highlights and challenges gendered expectations and their consequences [11, 23, 24]. The MenCare+ project from South Africa adopted such a gender transformative approach to educate young men on SRH issues and rights, with a focus on helping them identify and question gender norms in their personal lives and society at large [25]. The project saw positive changes with participants reporting increased participation in household tasks and increased condom use [25]. The core gender transformative elements of the intervention related to its success can be used to inform the development of further CSE programs.

Box 2 Lessons from the field: shifting gender norms through CSE trainings

- A contextual evaluation conducted at the start of the project found that mothers were more involved in providing guidance to adolescent children, than fathers. Sexual communication was seen to be gendered, with mothers generally communicating about SRH with their daughters. This resulted in young boys being neglected, as mothers felt unable to communicate about sexuality with their sons and fathers reported having limited time or capacity. Another facet to gender norms was seen in how household tasks were divided. Intervention participants prescribed to normative beliefs of women taking on domestic duties and acted on this by training adolescent girls in household chores.
- The social norms module of the intervention addressed gendered norms and expectations in the community using stories, games and group reflection activities. These exercises encouraged participants to interrogate societal norms around gender and reflect on how boys and girls are raised in their community. The participants highly appreciated this module and described its influence in changing their attitudes. Fathers participating in the study reported greater ease of communicating with their children on SRH issues. One male participant described successfully talking to his daughter about menstruation and ensuring her access to hygiene products. Female participants also reported increased communication with male children about puberty and SRH needs. Finally, participants reported changes in their attitude towards gendered roles in household tasks and described the importance of training both boys and girls to perform such chores.

Source: original

Prominence of 'Fear' in Sexual Communication

Literature on the implementation of sex education programs found that sexuality communication is hindered by the stigma around adolescent sexuality [26]. A research study evaluating the implementation of sex education content integrated within life skills training in South African schools found a disparity between the planned curriculum and what is practically taught [27]. This disparity was confirmed by schoolteachers delivering the program, who cited challenges such as resistance from parents and communities, stigma around discussing sexual communication, and personal attitudes around adolescent sexuality [27]. Studies examining the barriers to sex education in a range of SSA settings found that sexuality communication is often limited due to the taboo nature of the topic [7, 15, 28]. Health care providers emphasized the importance of talking about family planning as the myths and misconceptions among adolescents regarding family planning methods were a barrier [28]. Parents, family members, and teachers reported feeling embarrassed or afraid to expose young people to topics that are age inappropriate, while young people feared judgement or punishment from their community [29].

Interestingly, while 'fear' and stigma limit sexuality communication, 'fear' can also act as an important motivator to provide much needed SRH information to adolescents. Parents who engaged in sexuality communication with their children reported fears of adolescents receiving misinformation from other sources and engaging in unsafe practices [29]. However, 'fear' makes its presence felt when sexuality communication does occur, through fear-based messaging [30]. A study on the implementation of school-based sex education in Burundi found that schoolteachers relied on fear-based communication and sought to highlight the negative consequences of sexual activity [31]. This approach was not considered beneficial, as it was associated with increased anxiety amongst adolescents and detracted from their sense of agency over their sexuality [31]. Furthermore, it has the risk of creating an atmosphere of distrust among adolescents towards parents, schools, and formal health care centers [17, 18]. While the vast majority of literature on sex education in SSA used a risk-focused lens, this review uncovered one study that explored the coverage of 'pleasure' in sex education programs across Ghana and Kenya [32]. Young people were generally enthusiastic to receive CSE that went beyond abstinence education. Educators interviewed in this study described sex-positive education as important to build an environment of trust with adolescents and facilitate healthy relationships and sexuality [23].

Box 3 Lessons from the field: 'fear' in sexual communication

The parent-child communication intervention focused heavily on improving the parent's communication skills with the aim to facilitate positive communication and strengthen the parent-child relationship. This was done to create a trusting environment for open sexual communication. This approach was seen to be effective, with several parents marveling that their children approached them as "friends," rather than with fear. Parents also reported improved communication with their children about their friendships, challenges, and sexual health. However, when it came to sexuality communication, the discussions were framed around risk and fear, with parents predominantly describing sexual activity as risky and instilling fear about the negative consequences of engaging in sex. This fear-based sexuality communication was reflected on by the research team and seen as a product of the societal stigma around sexuality and the decades of fear-focused AIDS/HIV awareness campaigns in SSA. Considering this broader societal context, overcoming the taboo of around sex to initiate sexuality communication between parents and children can be seen as a major step forward on the road to wellbeing-focused sex-positive education.

Source: original

Delivering SE: From Communities to Technology

A review of scholarship on CSE in SSA revealed that schoolbased interventions are the most common method to deliver sexuality information to adolescents [33]. Such interventions are more easily translated to policy and can be regulated through standardized curricula. However, it is important that schoolbased CSE does not operate in silos. An evaluation of a schoolbased CSE program in Uganda found that the effectiveness of the intervention is limited due to adolescents receiving conflicting attitudes and information from their families and communities [34]. This indicates the need to engage families, particularly parents, as active agents in adolescent CSE programs. One such study, the Family Matter Project in Tanzania worked with caretakers of adolescents to promote SRH communication [35]. The intervention utilized the information-motivation-behavioral (IBM) model to provide targeted content [35]. The study demonstrated significant improvements in communication between caretakers and adolescents which could indicate the intervention's capacity to break down cultural barriers that previously limited sexuality discussions [35].

There is an increasing trend towards developing digital platforms to deliver CSE to young people in SSA. High-technology interventions, delivered through smartphone applications or games, can be a particularly creative methods of engaging youth [33]. Such digital interventions have the potential to circumvent barriers forged from social and cultural taboos or policy restrictions [36]. However, the scope of digital interventions is limited due to lower access to phones, particularly smartphones, among young people living in rural areas of SSA [19, 20]. Furthermore, young people with phone access often share ownership of the device with family members, which creates concerns around confidentiality [37]. An interesting example of overcoming access barriers while drawing on the benefits of digital interventions can be seen in the game-based learning sex education program conducted in Tanzania [38]. This intervention delivered sex education through game-based learning on a digital platform which was made freely available in schools [38]. Students could access the online game intervention through password-protected Moodle accounts on the school computers [38].

Low-technology alternatives to digital sex education include the provision of SRH information through helplines or SMS text messages. The Lydia Conseil Call Centre in Francophone West and Central Africa, and the national toll-free children's helpline in Kenya are examples of two interventions that provide free or minimum-cost information services to adolescents [26, 39]. These interventions have the advantage of providing anonymity to reduce the stigma associated with sexuality communication while ensuring adolescents have access to accurate information [10, 22]. Another example of engaging sex education that can be delivered at low cost is the MTV Shuga Down South program from South Africa [40] This consisted of community-based screenings of a 12-episode show that explored topics like adolescent sexual relationships, sexual violence, consent, abortions, and HIV [41]. The MTV Shuga intervention proved popular among youth participants as an entertaining and informative guide about the realities of adolescent sexuality and relationships. Such 'edutainment' programs have the potential to inform adolescents about sexuality without judgements.

Finally, it should be noted that these different delivery approaches work better in tandem. A study on SRH communication in Ethiopia found that adolescents are more likely to discuss sexuality issues with their parents when they are provided with SRH information from other sources [42]. Similarly, studies have reported the detrimental effect of adolescents receiving conflicting information and norms from various sources.

Future-Proofing Sex Education: Lessons From the Pandemic

The final thematic area is one that did not emerge from the literature review, due to a lack of relevant research in this area. Research on the impact of the COVID-19 pandemic on adolescent SRH has focused on the wide-ranging effects of the lockdown [43]. A recent cross-sectional study in Uganda reported that the lockdown in Uganda, one of the most stringent in SSA disrupted education and increased the risk of teenage pregnancies [44]. Restricting access to schools during the lockdown impeded the main source of sexual Information available to adolescents in SSA [44]. While most SSA nations have since loosened such restrictions, it is important to take stock of the lessons learned from the pandemic. This

is particularly important in low- and middle-income countries, which are more vulnerable to future pandemics and crises [43]. Navigating the COVID-19 pandemic demonstrated the importance of including families and communities, as well as technology platforms in sex education programs [45]. The effects of the lockdown were most visible among adolescent girls, thus widening gender inequalities and increasing vulnerability among this population (49, 50). This will necessitate more targeted content to address gender norms and inequalities in further interventions. Finally, the pandemic highlighted the precarity of the planning and implementation measures around CSE programs in SSA [43]. Despite commitments to ensuring access to CSE, these policies were neglected to the detriment of youth SRH outcomes. This underlines the urgent need to develop more sustainable and robust CSE policies that prioritize the delivery of SRH services.

Conclusion

This paper presented key issues summarizing the challenges and trends in comprehensive sex education research and practice in the SSA region. Based on the insights from the literature review and the authors' reflections, three recommendations are put forward to guide the design of further CSE initiatives: (i) stakeholder engagement in determining CSE priorities and strategies, (ii) active engagement of both boys and girls to challenge gender norms in CSE, and (iii) diverse delivery pathways for CSE programs.

While adolescent CSE and SRH needs are universal, it is important that the design of CSE programs be aligned with contextual needs and practices. When doing so, it may be necessary to redefine the scope of 'comprehensiveness' in CSE programs. It is recommended to engage local stakeholders, particularly adolescents and youth, in outlining priorities for CSE curricula, and preferred delivery strategies. When centering youth perspectives in CSE programming, it is important that this engagement is meaningful, provides safe spaces for youth to express their needs, and shows commitment to actioning their suggestions.

Addressing gender norms and achieving gender equality in CSE and adolescent SRH services is globally recognized as a priority for CSE programming. However, most CSE programs that address gender norms in SSA focus on empowerment of adolescent girls which neglects the broader societal influences and the engagement of adolescent boys. The authors suggest interventions that engage both young boys and girls, encourage them to learn from each other's gendered experiences, and reflect on the consequences of gender roles. Such approaches would facilitate better understanding and stimulate young people to challenge harmful gender norms.

There is a need to adopt a more comprehensive approach when designing the delivery of CSE programs by engaging a diverse range of stakeholders and platforms as delivery agents. Key stakeholders, including families, youth peers, schools, and faith leaders, should be effectively engaged and provided adequate training and support. While current approaches isolate interventions to specific stakeholder groups, research on CSE implementation points to the utility of coordinating initiatives with different stakeholder groups. When doing so, it is important to reduce the risk of contradictory information and mixed-messaging on SRH topics. Furthermore, low-cost, easily accessible technology platforms can also be used to support delivery of informative and engaging sex education. It is also important to balance technology-delivered education with the space for interpersonal exchange of ideas and experiences.

Appendix

Table 1 Search strategy for the literature review

Database	Search string	Number of hits
PubMed	(("sex"[Title] OR ""reproductive"[Title] OR "reproduction"[Title] OR "contraceptive"[Title] OR "contraception"[Title] OR "sex education"[MeSH Major Topic]) AND ("education"[Title] OR "educate"[Title] OR "teach"[Title] OR "learn"[Title] OR "sex education"[MeSH Major Topic]) AND ("education"[Title] OR "educate"[Title] OR "teach"[Title] OR "learn"[Title] OR "sex education"[Title] OR "SATIELE OR "SATIELE OR "SATIELE OR "Satient"][Title] OR "sub saharan africa "[Title/Abstract] OR "Sub saharan africa"[Title/Abstract] OR "Sub saharan africa"[Title/Abstract] OR "Subsaharan Africa"[Title/Abstract] OR "Subsaharan Africa"[Title/Abstract] OR "Subsaharan africa"[Title/Abstract] OR "Uganda"[Title/Abstract] OR "Nigeria"[Title/Abstract] OR "Angia"[Title/Abstract] OR "Sudan"[Title/Abstract] OR "Subsaharan africa"[Title/Abstract] OR "Nigeria"[Title/Abstract] OR "Cabo Verde"[Title/Abstract] OR "Sudan"[Title/Abstract] OR "Burkina"[Title/Abstract] OR "Burkina"[Title/Abstract] OR "Burkina"[Title/Abstract] OR "Burkina"[Title/Abstract] OR "Burkina"[Title/Abstract] OR "Burkina"[Title/Abstract] OR "Cameroon"[Title/Abstract] OR "African Republic"[Title/Abstract] OR "Benin"[Title/Abstract] OR "Cameroon"[Title/Abstract] OR "Comoros"[Title/Abstract] OR "Democratic Republic of Congo"[Title/Abstract] OR "Central African Republic"[Title/Abstract] OR "Congo"[Title/Abstract] OR "Congo"[Title/Abstract] OR "Congo"[Title/Abstract] OR "Suziland"[Title/Abstract] OR "Central African Republic"][Title/Abstract] OR "Central African Republic"[Title/Abstract] OR "Central African Republic"[Title/Abstract] OR "Central African Republic"][Title/Abstract] OR "Central African Republic"][Title/Abstract] OR "Central African Republic"[Title/Abstract] OR "Central African Republic"[Title/Abstract] OR "Central African Republic"][Title/Abstra	94
Scopus	(TTTLE (sex) OR TTTLE (reproductive) OR TTTLE (contraceptive)) AND (TTTLE (educate) OR TTTLE (education) OR TTTLE (teach) OR TTTLE (learn) OR TTTLE (communication) OR TTTLE (inform)) AND (TTTLE-ABS (africa) OR TTTLE-ABS (sub AND sahara) OR TTTLE-ABS (subsahara) OR TTTLE-ABS (south AND africa) OR TTTLE-ABS (angola) OR TTTLE-ABS (sub AND sahara) OR TTTLE-ABS (subsahara) OR TTTLE-ABS (south AND africa) OR TTTLE-ABS (angola) OR TTTLE-ABS (kenya) OR TTTLE-ABS (burkina) AND faso) OR TTTLE-ABS (benin) OR TTTLE-ABS (botswana) OR TTTLE-ABS (chad) OR TTTLE-ABS (congo) OR TTTLE-ABS (drc) OR TTTLE-ABS (public AND of AND congo) OR TTTLE-ABS (cape AND verde) OR TTTLE-ABS (comors) OR TTTLE-ABS (burkina) OR TTTLE-ABS (bors) OR TTTLE-ABS (cape AND verde) OR TTTLE-ABS (comors) OR TTTLE-ABS (ivory AND coast) OR TTTLE-ABS (cote AND divoire) OR TTTLE-ABS (guinea) OR TTTLE-ABS (equatorial AND guinea) OR TTTLE-ABS (guinea AND bissau) OR TTTLE-ABS (citrea) OR TTTLE-ABS (eswatini) OR TTTLE-ABS (swaziland) OR TTTLE-ABS (ghana) OR TTTLE-ABS (kenya) OR TTTLE-ABS (mauritania) OR TTTLE-ABS (malagascar) OR TTTLE-ABS (malawi) OR TTTLE-ABS (malawi) OR TTTLE-ABS (malini) OR TTTLE-ABS (manibia) OR TTTLE-ABS (malawi) OR TTTLE-ABS (malawi) OR TTTLE-ABS (manibia) OR TTTLE-ABS (namibia) OR TTTLE-ABS (malawi) OR TTTLE-ABS (soo AND tome) OR TTTLE-ABS (namibia) OR TTTLE-ABS (malawi) OR TTTLE-ABS (soo AND tome) OR TTTLE-ABS (namibia) OR TTTLE-ABS (malawi) OR TTTLE-ABS (soo AND tome) OR TTTLE-ABS (soo AND tome AND principe) OR TTTLE-ABS (south AND sudan) OR TTTLE-ABS (somalia) OR TTTLE-ABS (soo AND tome AND principe) OR TTTLE-ABS (south AND sudan) OR TTTLE-ABS (somalia) OR TTTLE-ABS (soo AND tome) OR TTTLE-ABS (soo AND tome) OR TTTLE-ABS (south AND sudan) OR TTTLE-ABS (somalia) OR TTTLE-ABS (soo AND tome) OR TTTLE-ABS (sooth) OR TT	77
WoS	(III = (sex) OR TI = (reproductive) OR TI = (contraceptive)) AND (TI = (education) OR TI = (educate) OR TI = (teach) OR TI = (learn) OR TI = (inform) OR TI = (communicate) OR TI = (communication)) AND (TS = (sub saharan africa) OR TS = (africa) OR TS = (subsaharan) OR TS = (angola) OR TS = (burundi) OR TS = (burkina faso) OR TS = (botswana) OR TS = (chad) OR TS = (cameroon) OR TS = (kenya) OR TS = (south africa) OR TS = (uganda) OR TS = (congo) OR TS = (nigeria) OR TS = (zimbabwe) OR TS = (rwanda) OR TS = (south africa) OR TS = (cape verde) OR TS = (cabo verde) OR TS = (nigeri) OR TS = (zimbabwe) OR TS = (rwanda) OR TS = (south african republic) OR TS = (cape verde) OR TS = (cabo verde) OR TS = (niger) OR TS = (benin) OR TS = (african republic) OR TS = (contral african republic) OR TS = (cabo verde) OR TS = (democratic republic of congo) OR TS = (republic of congo) OR TS = (cote d'ivoire) OR TS = (cote d'ivoire) OR TS = (democratic republic of congo) OR TS = (kessau) OR TS = (certrea) OR TS = (cote d'ivoire) OR TS = (cote divoire) OR TS = (guinea) OR TS = (Equatorial guinea) OR TS = (malibility) OR TS = (malawi) OR TS = (eritrea) OR TS = (eswatini) OR TS = (swaziland) OR TS = (liberia) OR TS = (kessau) OR TS = (mauritius) OR TS = (mauritania) OR TS = (namibia) OR TS = (senegal) OR TS = (sao tome) OR TS = (south) OR TS = (mauritania) OR TS = (namibia) OR TS = (sao tome) OR TS = (south) OR TS = (sao tome and Principe) OR TS = (principe) OR TS = (sudan) OR TS = (zambia) OR TS = (togo) OR TS = (south) oR TS = (sierra leone) OR TS = (tanzania))	111

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Compliance with Ethical Standards

Conflict of Interest The authors do not have any conflict of interest to declare.

Human and Animal Rights and Informed Consent All reported studies/ experiments with human or animal subjects performed by the authors were performed in accordance with all applicable ethical standards including the Helsinki declaration and its amendments, institutional/ national research committee standards, and international/national/institutional guidelines.

Disclaimer The author's opinions are the only ones expressed in this article. VLIR-UOS does not necessarily support them. The study's design, data collection and analysis, data interpretation, manuscript preparation, or the decision to submit the manuscript were all done without the involvement of any sponsors.

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