College Of Medicine

Factors Influencing Access To and Utilisation of Youth Friendly Sexual and Reproductive Health Services In Sub-Saharan Africa: A Systematic Review

By

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DECLARATION

This thesis is my original work and has not been presented for a degree award in any other institution.

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CERTIFICATE OF APPROVAL

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DEDICATION

I dedicate this thesis to my parents, Mr. Kaggwa N. David and Mrs. Kihangirwe Rose without whose support I would not be what I am today. To my siblings, Gillian Kwikiriza and Brian Akampurira, and all my friends for their unveiling and genuine support.

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ABSTRACT

Despite the global agreements on adolescents' sexual and reproductive health and rights, access to and utilisation of these services among the youth/adolescents remain unsatisfactory in low- and middle-income countries which are a significant barrier to progress in this area. This review established factors influencing access and utilisation of youth-friendly sexual and reproductive health services (YFSRHS) among the youth in sub-Saharan Africa to inform programmatic interventions.

A systematic review of studies published between January 2009 and April 2019 using PubMed, Web of Science, EMBASE, Medline, and Cochrane Library, and Google Scholar databases was conducted. Studies were screened based on the inclusion criteria of barriers and facilitators of implementation of YFSRHS, existing national policies on provision of YFSRHS, and youth's perspectives on these services.

A total of 23,400 studies were identified through database search and additional 5 studies from other sources. After the full-text screening, 20 studies from 7 countries met the inclusion criteria and were included in the final review. Structural barriers were the negative attitude of health workers and their being unskilled and individual barriers included lack of knowledge among youth regarding YFSRHS. Facilitators of utilisation of the services were mostly structural in nature which included community outreaches, health education, and policy recommendations to improve implementation of the quality of health services and clinics for adolescents/youth to fit their needs and preferences.

Stakeholder interventions focusing on implementing YFSRHS should aim at intensive training of health workers and put in place quality implementation standard guidelines in clinics to offer services according to youth's needs and preferences. In addition, educating the

youth through community outreaches and health education programs for those in schools can facilitate utilisation and scale up of the service.

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ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immuno Deficiency Syndrome
FP	Family Planning
HBM	Health Belief Model
HIV	Human Immuno Deficiency Virus
IDRC	International Development Research Centre
NGO	Non-Governmental Organization
STI	Sexually Transmitted Infections
UNAIDS	United Nations Programme on AIDS
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
WHO	World Health Organization
YFHS	Youth Friendly Sexual and Reproductive Health Services

OPERATIONAL DEFINITIONS

Access: used to mean the ability, right, or permission to use youth friendly sexual and reproductive health services.

Barriers: factors that hinder youths/adolescents from accessing youth-friendly services.

Facilitators: factors that enhance the utilization of youth-friendly services.

Service Utilisation: The ability to consume services and incorporates economics, geographic location, and abundance of health services, physical and social resources (Rebman, 2005) or usage of the youth-friendly reproductive health services

Sexual and Reproductive health: a state of complete physical, mental, and social wellbeing in all matters relating to the reproductive system. It implies that people that people can have a satisfying and safe sex life, the capability to reproduce, and the freedom to decide if, when, and how often to do so (UNFPA, 2012).

Youth Friendly Reproductive Health Service: Services that are accessible, acceptable and appropriate for the youth. They are in the right place at the right price (free where necessary) and delivered in the right style to be acceptable to young people and are effective, safe and affordable. They include counselling, family planning, voluntary counselling and testing and treatment of sexually transmitted infections (WHO, 2004).

Youth Friendly Services; are those with policies and attributes that attract young people to them, create a comfortable and appropriate setting, and meet young people's needs (CDC, 2009).

Youth: According to WHO (2016), youth are defined as persons between the ages of 15 and 24 years age group.

CHAPTER ONE: INTRODUCTION AND OBJECTIVE OF THE STUDY

1.1. Background

In many African countries, sexual and reproductive health needs of young people are often underserved, despite their demonstrated need and the urgency of these services (1). The number of youth in sub-Saharan Africa is expected to multiply as population rates remain high approximately 1.2 billion youth aged 15-24 years and 226 million (Africa), accounting for 19% of the global youth population (2). In developing countries, estimated births from young population was 777000 births in 2016; 58% of these births took place in Africa, 28% in Asia and 14% in Latin America and Caribbean which is one of the poorest regions in the world (3). The term youth (15-24yrs) according to World Health Organisation (WHO) and young people are interchangeably used but often meaning the youth, adolescents and young people (4). Youth represent 25% of the world population which is characterized as a period of optimum health with a series of physiological, psychological and social changes that expose them to unhealthy explorative sexual behaviour such as early sex engagement, unsafe sex and numerous sexual partners (5-6).

Adolescent sexual and reproductive health (ASRH) comprises a major component of the global burden of sexual ill-health. Nearly a quarter of girls aged 15-19 years are married with an estimated 16 million adolescents giving birth each year globally of whom, 95% are from low- and middle-income countries (LMICs) (7). Trends in delayed marriages do not decrease the age of onset of sexual activity among the youth but rather highlights the need to access of sexual and reproductive information, skills and improved services to learn sexuality and prevent unwanted pregnancies and sexually transmitted diseases (10). Several factors are contributing to high adolescent/youth fertility rates in Sub Saharan Africa, including lack of

SRH knowledge, limited access to/use of contraceptives, condoms, and SRH services, gender inequality and cultural practices such as child marriage and initiation ceremonies (11).

In sub-Saharan Africa, there is a high prevalence of HIV, other sexually transmitted infections (STIs), and adolescent childbearing among young people which is associated with negative health outcomes (1). Younger mothers are at an increased risk of obstetric fistula, anaemia, eclampsia, postpartum haemorrhage, and puerperal endometritis. Young girls less than 19 years have a 50% increased risk of stillbirths and neonatal deaths, as well as an increased risk for preterm birth, low birth weight, and asphyxia which in turn affect the health of the unborn child perpetuate the cycle of poverty (6).

Young people in sub-Saharan Africa are also particularly at risk from HIV, accounting for 41% of all new adult infections. Numerous surveys in low and middle-income countries indicated that only 33% of young men and 20% of young women have a comprehensive knowledge of HIV but still less than half of young men and women surveyed reported using condoms at their last time of sexual activity (8). According to the 2014 gaps report by UNAID, only 10% of young men and 15% of young women were aware of their HIV status which leaves a big challenge to achieving good health and wellbeing for all (2). In sub-Saharan, adolescents face many significant sexual reproductive health challenges such as limited access to youth-friendly services including information on growth, sexuality and family planning. This has led youth into risky sexual behaviours resulting in high STI and HIV prevalence, early pregnancy and vulnerability to delivery complications resulting in high rates of death and disability (7).

Youth-friendly services are amalgamation of health facility characteristics, health service provision techniques and health services offered which are a key strategy for improving the health of adolescents in Africa (9). These Youth Friendly Health Services provided are

required to be accessible, acceptable, equitable, appropriate and effective, gender-equitable and serve as a channel for access to family planning and sexual and reproductive health according to the WHO guidelines (9). Although there has been the momentum of implementing SRH services, there are major gaps among the youth in receiving information, the effectiveness of the Youth Friendly services and skills that are affected by culture, governmental and financial policies according to earlier research (12). Youth Friendly Services are a key strategy for improving young people's health however, there is an increasing need to break down the barriers that prevent the youth from access quality sexual and reproductive health services in sub-Saharan Africa which is vulnerable to many political, cultural, social barriers hindering access (13).

1.2. Problem Statement

In sub-Saharan African, many young people lack education and have poor access to services related to SRHR (14). Although youth share many characteristics with adults, their health-related issues and needs are different. Adolescent and youth sexual and reproductive health remains a global challenge particularly in developing countries (15). Youth engage in early sexual debut which increases the risk of sexually transmitted infections (STIs), including HIV, and can also result in unintended pregnancy and early childbearing (16). At least 80% of sub-Saharan Africa's youths are sexually experienced and the statistics on having had intercourse by the age of 20 are: 73% of Liberian women aged 15 to 19; 15% of Nigerian women; 49% of Ugandan women; and 32% of Botswana women (17). A primary concern of public health programmes regarding youth-friendly services inclusiveness has caused the existence of disparities in access to and utilisation of health services and information.

The limited capacity of health sectors to provide youth-friendly service with inconvenient hours or location, unfriendly staff, and lack of privacy are among the main reasons many

adolescents and young adults give for not using reproductive health services (18). Moreover, parents, caregivers, and community members have limited knowledge to discuss about reproductive health services with adolescents contributing to high rates of maternal mortality and morbidity due to abortion, fistula and other pregnancy-related complications (19).

Over the past quarter-century, there has been an emergency to develop, implement and assess evidence-based research in order to impact the youth-friendly health services (YFHS) to improve the delivery of sexual and reproductive health services for adolescents. Despite these research efforts, evidence supporting the effectiveness of YFHS is limited, which may be attributed to a lack of consensus on how to measure youth-friendliness to track progress and evaluate outcomes (20). Therefore, it is important to create a supportive environment that would positively influence the knowledge, attitude, perceptions, skills and behaviour of adolescents and youth towards the access and utilization of YFSRHs (17).

1.3 Justification of study

Access to and utilisation of YFSRHS services is a primary concern surrounding the promotion of sexual and reproductive health and rights (19). There have been studies that have documented the barriers and opportunities to access and utilisation of Youth Friendly Sexual and Reproductive Health Services as the study supports the approach to unveil barriers, however, synthesis of this evidence provides shared learnings, experience across contexts in sub-Saharan Africa and are fully integrated and sustained within the health system. This study synthesizes available evidence on barriers to access and facilitators to the utilisation of these services as well as demand and supply of YFHS among the youth/adolescents which clarifies not only how to effectively implement these services, but also how to overcome the barriers. It also informs health care providers, researchers, policy and practice are inundated with unmanageable amount regarding effective implementation

and scaling up of youth-friendly sexual and reproductive health services in many Sub Saharan Africa countries.

1.4 Study Objectives

1.4.1 Broad objective

To synthesize factors that influence access and utilization of youth-friendly sexual and reproductive health services among the youth in sub-Saharan Africa so as to provide shared learnings and experience across contexts in sub-Saharan Africa.

1.6.2 Specific objective

1. To identify the barriers to accessing youth-friendly sexual and reproductive health services in sub-Saharan Africa.

2. To identify the facilitators of utilisation of youth-friendly sexual and reproductive health services in sub-Saharan Africa.

3. To explore the options/ recommendations to overcome implementation constraints of youth-friendly sexual and reproductive health services.

1.7 Research questions

1. What are the barriers to accessing youth-friendly sexual and reproductive health services in sub-Saharan Africa?

2. What are the facilitators of utilisation of youth-friendly sexual and reproductive health services in sub-Saharan Africa?

3. What options/ recommendations are in place to overcome implementation constraints of youth-friendly sexual and reproductive health services in sub-Saharan Africa?

CHAPTER 2: LITERATURE REVIEW

2.1 Barriers to access of the youth friendly sexual and reproductive health services.

Globally, existing barriers to access and utilization include poor access, availability and acceptability of the services and lack of clear directions and services on offer, crowding, lack of privacy, appointment times that do not accommodate young people's work and school schedules, little or no accommodation for walk-in patients, and limited services and contraceptive supplies and options calling for referral are also impediments (1).

The "youth-friendly" concept is used by various organizations and different health professionals; however, there is no real consensus on what it means in practice (7). Youth friendliness goes beyond service delivery settings to include community acceptance of young people's SRHR and adherence to change (10). Youth-friendly services are expected to offer a wide range of sexual and reproductive health services relevant to adolescents' needs which include sexual and reproductive health counselling, contraceptive counselling and provision (including emergency contraception) sexually transmitted infection/HIV prevention, counselling and testing, treatment and care, prenatal and post-partum care, sexual abuse counselling, relationship counselling, and safe abortion and abortion-related services (15).

Youth-friendly services were introduced to help young people characterized by developmental activities address their sexual and reproductive health issues. However, many factors have contributed to the lack of access to these services (15). Despite the seemingly broad network of YFH services in different parts of the world, the majority of young people do not have access to such services because of individual, social, cultural, and structural barriers (21).

2.1.1 Individual barriers

Adolescent sexual and reproductive health (ASRH) comprises a major component of the global burden of sexual ill-health which has been overlooked by the global and international

agencies (22). Access to health care services especially youth-friendly services contributes to the improvement of health and the relief of sickness. In low-income countries problems of access concern the availability of basic health services such as the ability to visit a doctor or to receive health care during pregnancy and delivery (23). A study in Cambodia indicated that the barriers to youth-friendly service access to reproductive health services included lack of confidentiality, poor relations with health staff, illiteracy and low prioritization by parents for reproductive health services (24).

Youths and adolescents are often reluctant to discuss sensitive health issues due to their shyness and issues of poor disclosure are better handled when youths/adolescents can access youth-friendly services (25).

A multicentre study carried out in Burkina Faso, Ghana, Malawi, and Uganda indicated that contraceptive, STI and voluntary counselling and testing services are under-utilized by young people due to their lack of knowledge about the services which is the lack of understanding of the importance of sexual health knowledge of where to go for care discourages youth from using the services (26). Limited access to education and economic resources which indicates challenges in the lives of the youth hence affecting their health-seeking behaviour. The overwhelmed and underfunded health services in African countries often prevent young people from receiving friendly and high-quality sexual health services (27).

2.1.2 Social-economic barriers

Poverty in Sub Saharan Africa has led some adolescents to engage in pre-marital sex with the aim of getting some form of gift or support from their sex counterparts exposing them to very risky and unhealthy behaviours. Different facilities in Africa charge for access to health services which is similar to the user fee charged to offer YFSRHs and the fee poses a risk of hindering the youth from utilizing youth-friendly services (28). A study done by Program for

Appropriate Technology in Health (PATH) indicated that financial constraints like affordability generally affects health service utilisation including YFSRHs. In a large-scale population-based survey in Kenya and Zimbabwe, researchers found affordability to be the third most important aspect of youth-friendliness (26).

2.1.3 Cultural barriers

A series of multifaceted barriers currently prohibits good sexual and reproductive health for the youth at various stakeholder level where SRH is of low priority and often with restrictive policies and laws. In addition, societal, cultural and religious barriers present an inhibiting and unfavourable environment that threatens the discussion of ASRH through stigmatization of sexual health concerns especially STIs/HIV due to the strongly rooted sense of condemnation of early engagement in sexual activities (13,22,26).

Moreover, parents, caregivers, and community members have limited knowledge to discuss about reproductive health services with adolescents. It is believed that limited access and utilization of adolescent and youth-friendly reproductive health services contribute to high rates of maternal mortality and morbidity due to abortion, fistula and other pregnancy-related complications (19).

2.1.4 Structural barriers

Service availability can be viewed as a rather limited measure of access to health care. A population group in need may often have access to services and yet encounter difficulties in utilizing services (23). The limited capacity of health sectors to provide youth-friendly service with inconvenient hours or location, unfriendly staff, and lack of privacy are among the main reasons many adolescents and young adults give for not using reproductive health services (5).

A review of literature in low and middle-income countries asserted that accessibility of health care is primarily dependent on the presence or availability of health care facilities (21). It has

also been argued elsewhere that accessibility of youth-friendly services is a multi-dimensional concept that can be measured in terms of distance covered to get to the health facility (29).

The youth have special sexual and reproductive health needs but these are unmet due to limited knowledge, social stigma from the peers and health workers, policies concerning provision of SRH services like contraceptives and abortion for the unmarried (or any) adolescents, and judgmental attitudes among service providers. Improvement of these barriers dealing with youth-friendly sexual and reproductive health, through access to accurate information and to the safe, effective, affordable, and acceptable health services of their choice (30)(31)(24).

In addition, the lack of clear adolescent/youth health policies and guidelines for adequate provision of youth-friendly services, and lack of information about existing services hinder adolescent's access and use of reproductive health services (24).

Negative behaviours and attitudes of healthcare workers potentially affect access to and utilization of SRH services by women and adolescents especially, and the quality of care thereof. Health provider's attitude limits access to the desired range of health services among adolescents, who often opt for other access sources such as shops, which unfortunately do not offer comprehensive SRH packages (32).

2.2 Facilitators to utilization for the effective implementation of the youth friendly sexual and reproductive health services

Utilization of healthcare services is an important determinant of health and has particular relevance as a public health and development issue in low income countries. In fact, utilisation of healthcare services for the most vulnerable like the youth and adolescent and

underprivileged populations has been recommended by the World Health Organization as a basic primary healthcare concept (23). Facilitators to improving utilisation of YFSRHs come from multi-sectoral approaches with regards to access to quality service, having integrated services like HIV/AIDS, trained health workers and having sex education programs scaled up offering comprehensive information which involves community involvement and outreaches (33).

2.2.1 Community Involvement and outreaches

Community outreach is the most cost-effective way to ensure quality youth-friendly services improve the clinical aspects of current SRH services to meet the needs of young people through internal re-organization especially through staff training and through outreach services that take the services to young people in and out of school (32).

2.2.2 School sexual education

Comprehensive sexuality education (CSE) has been well-evaluated and has been shown to improve adolescent SRH knowledge, attitudes, and behaviours when implemented well. The United Nations Educational, Scientific and Cultural Organization (UNESCO) together with the other UN partners in 2009 developed technical guidance on the development and implementation of quality CSE (9).

Peer education on sexual and reproductive health is widely used to capitalize on the perceived social networks of youth, and believed to provide opportunities for wide range contact being the most inexpensive and easy-to-implement intervention (34). Studies have indicated that discussion with peers allows them to exchange information and knowledge amongst themselves (25).

2.2.3 Improving quality access

Study findings from Mongolia on adolescent perception on YFS suggest that there is an opportunity to provide acceptable high quality SRH services to adolescents via the existing public health system that should be exploited and making services adolescent friendly increases utilisation. This could be done by increasing the availability of services and improving quality by ensuring that the services are adolescent-friendly and opening hours are extended (14). A study in Zambia that implemented youth-friendly services projects in selected facilities found increased satisfaction in utilisation among young patients with the services they received and nurses more supportive of providing SRH services to young people (35).

Youth Friendly Services are a key strategy for improving young people's health hence the increasing urge to break down the barriers that prevent the youth from access quality sexual and reproductive health services in sub-Saharan Africa which is vulnerable to many political, cultural, social barriers hindering access (13).

2.3 Conceptual Framework

This study used the Health Belief Model which was founded on attempts to integrate stimulus-response theory with cognitive theory in explaining behaviour. The design of the HBM was influenced by Kurt Lewin's theories which state that perception of reality, rather than objective reality, influences behaviour. In the HBM, the likelihood that a person will follow a preventive behaviour is influenced by their subjective weighing of the costs and benefits of the action; the perception involves the following elements: perceived benefits of the action and perceived barriers to action (36). The framework below illustrates the variables that have an influence on access and utilization of Youth-friendly sexual and reproductive

health services hence have an impact on the level of use of these services. The factors that affect the youth are individual, social-economic, cultural and health service factors that interact to affect access and utilisation hence leaving the youth in a situation that provides the final say about Youth Friendly Sexual and reproductive health services.

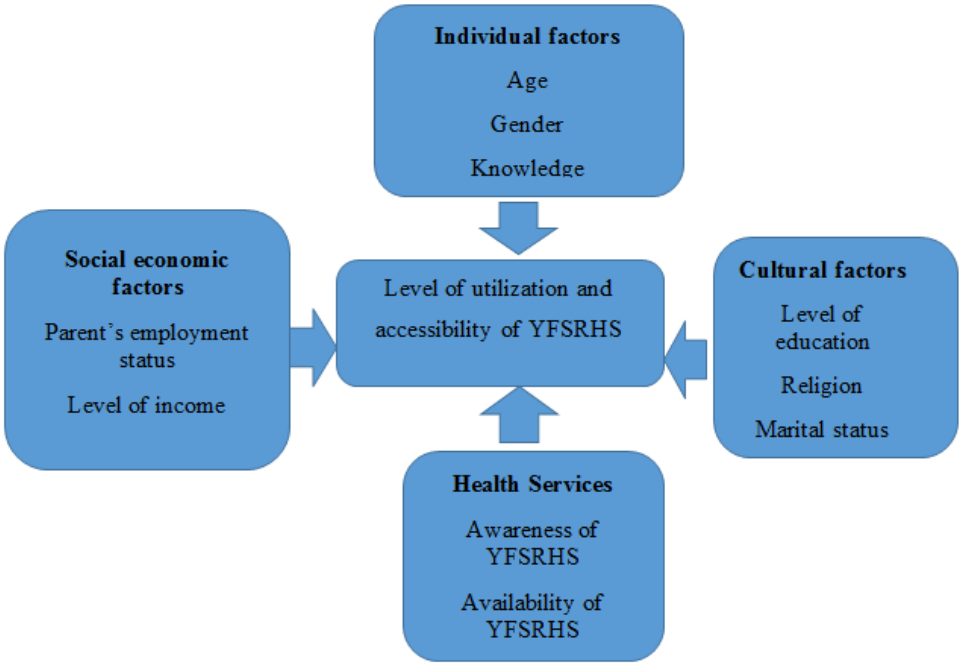

Figure 1: Conceptual Framework

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Research design

A systematic review of literature on studies assessing barriers and facilitators to youth-friendly sexual and reproductive health services at both community and health facilities published between January 2009 and April 2019.

3.2 Study location

Sub Saharan Africa is a geographical, area of the continent of Africa that lies south of the Sahara. It consists of all African countries that are fully or partially located south of the

Sahara having approximately 54 countries with capital cities (*Appendix 4: Showing countries in Sub Saharan Africa).*

3.3 Study population:

For the purpose of this review, the youth population was defined as those aged 15-24 years; however, since some studies target the adolescents (aged 10-19 years), so all studies targeting both youth and adolescents were represented (10-24 years of age).

3.4 Study period:

The study commenced in April 2019 and was completed in October 2020.

3.5 Protocol

The protocol for this systematic review rigor was developed in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analysis Protocols (PRISMA-P) guidelines for reporting systematic reviews with Protocol ID (CRD42020173073) (37). This framework is the recognized standard for reporting evidence in systematic review and meta-analysis. The methods of screening, inclusion and exclusion criteria and analysis were developed following the above protocol.

3.6 Information source

Studies were screened to identify the availability of YFSRHs and youth perspectives on these services used to assess the barriers to access and facilitators to utilisation of YFRHS. The electronic journals and reports were searched comprehensively by using PubMed, Web of Science, EMBASE, Medline, Cochrane Library, and Google Scholar databases. Other sources identified through scanning of references in selected sources. All databases were well-established, multi-disciplinary research platforms, holding a wide variety of peer-reviewed journals, and those that will be kept up to date.

3.7 Search strategy

A comprehensive search strategy was developed and only English language literature were searched and also included studies. The searches were rerun just before the final analyses and further studies retrieved for inclusion. The reference list of included studies was crosschecked to make sure important studies are not left out and Google Scholar was used to search for additional information.

3.8 Search Terms

The search terms were developed for each of the components of the Population Intervention Comparative Outcome. The researchers were familiar with reproductive health among the youth and youth-friendly services which puts them in a better position to develop the search terms. Boolean connectors AND and OR were used to combine the following MeSH and search terms: adolescents, youths, young people* youth-friendly services, youth-friendly sexual and reproductive health services, youth corners, ASRH, teen clubs, Adolescent health services, student health services* SRH, family planning, sex education* utilisation, use, access, usage, delivery of services, healthcare services* factors, facilitators, barriers, challenges, influencers, causes, reasons, elements* sub-Saharan Africa, developing countries, poor countries, LMIC*. These demonstrate the population, intervention, and outcome

3.9 Search Limits:

The following search limits were used

- Peer-Reviewed Journal articles written in the English Language. Grey literature such as technical reports and web-based guidelines were included in this review**.**
- Published between published between January 2009 and April 2019. This is the time frame chosen for the review so as to utilise up to date evidence on the topic.

- Search within**:** the search was restricted to title, abstract, methodology and keywords of the article

3.10 Inclusion and exclusion criteria

The criteria tested on reviewed articles regarding their relevance, as well as understand ability and practicality. The principle investigator developed and tested the criteria to make the review process more meaningful.

3.10.1 Inclusion criteria

Type of study:

The researcher only included studies that were published in sub-Saharan Africa from January 2009 and have qualitative and/or quantitative methods. Qualitative research studies; study designs including focus group discussions, in-depth interviews, and structured observations. Quantitative research studies; study designs including randomized control trials, cross-sectional, case-control, and mixed methods approach.

Participants: for the purpose of this review, youth (aged 15-24 years) along with adolescents (10-19) years, were included.

Outcome measures: The study included studies on youth-friendly service scale-up, utilisation and access of YFSRHS were included and have been published in English.

3.10.2 Exclusion criteria

Location: Studies or evaluation carried outside sub-Saharan Africa, duplicate publications systematic or narrative reviews, reviews, letters to the editor, case reports were excluded from the review. Articles written in other languages other than English were excluded.

Participants; Study population predominately greater than 24 and less than 10 years of age or not clearly described were excluded. Some studies used non-youth key informants and hence excluded.

Title and abstract screening of all papers identified by the search strategy were independently performed by two researchers with reference to the published inclusion/exclusion criteria.

3.11 Quality assessment and appraisal of retrieved articles

Quality assessment is crucial to ensure that the findings of papers are correct and accurate. All studies that meet the eligibility criteria were assessed for quality independently and in duplicate. The included studies were appraised critically for methodological quality and rigour using a universal appraisal tool adapted which is the Critical Appraisal Skills Programme Checklist (21)**.** The researcher used a modified appraisal tool to critically assess the trustworthiness and relevance of the published papers with a keen focus on the study design, sampling methods, participant recruitment strategy, ethical consideration, data analysis and findings.

3.12 Critical review.

The critical review entailed three processes.

3.12.1 Data extraction: the researcher used a common data extraction tool for all studies, with variation depending on the research design. The extraction included; what information is to be collected on each study (e.g. author, publication source, year), participants and demographics, study design, outcomes, analyses used, and key findings, how the databases or forms used and how this is was recorded and the number of reviewers. Two data extractors (NLR and NS) resolved the discrepancies and any remaining differences were resolved by the supervisors. As part of the

extraction process, each qualitative and quantitative study were assessed for methodological rigor.

3.12.2 Data analysis; the retrieved data were analysed to answer the main research and specific objectives.

3.12.3 Synthesis; finally, the findings were summarized in a narrative synthesis. The synthesis is presented in the results and discussion chapter.

3.13 Data collection, management and analysis

Key themes were compiled for each article and these themes were grouped based on common traits for thematic synthesis, the result section of each article was analysed using line by line coding. Each category was designated a colour code blue for included and red for excluded. Initial screening of abstracts and titles using a process of semi-automation while incorporating a high level of usability was done by Rayyan QCRI software (38). The findings from all articles were reviewed by the two researchers and synthesized. Reference management software Mendeley was used to organise articles retrieved from the comprehensive literature review and then analysed.

3.14 Dissemination plan

The researcher will disseminate the findings from this systematic review through a variety of outlets. Firstly, the author presented findings to COMREC and University dissemination conference, College of Medicine Library and University Research and Publication Committee. These collaborations facilitated the researcher in receiving feedback also participate in a variety of conferences and present findings. Finally, results from the systematic review were submitted for publication in peer-reviewed journals.

3.15 Ethical Considerations

Since this review was based on already published studies, ethical approval was not needed. However, the researcher sought an ethics waiver from the College of Medicine Research and Ethics Committee.

3.16 Study limitations

Access to the articles that require payment was difficult to get from some of the sites. However, efforts were taken by the researcher to access most articles as possible including emailing study authors to request for their articles and creating accounts to sites like research gate to access some of these articles.

CHAPTER FOUR: RESULTS

In this chapter, presentation of results on barriers to access and facilitators of utilisation of youth friendly sexual and reproductive health in Sub Saharan Africa

4.1 Characteristics of selected studies

A total of 23400 studies were identified through database search and additional 5 studies from other sources. After the full-text screening, 20 studies met our inclusion criteria and

were selected for final review (*see* ***Error! Reference source not found.***). The researcher identified studies focusing on access, utilization and scale-up of youth/adolescent-friendly sexual and reproductive health services conducted in sub-Saharan Africa and found articles of 7 countries (Tanzania, Nigeria, Ghana, Kenya, Ethiopia, Uganda, and South Africa) which were included. Nineteen studies used cross-sectional study design, nine selected studies from South Africa, Kenya, Uganda and Ethiopia used qualitative, six studies from Nigeria and Ethiopia used quantitative methods and the remaining six studies from Ethiopia, Nigeria, Tanzania and Kenya combined both methods in their studies. Eleven studies had their participants from the community; four studies were done among both rural and urban communities, one study among urban and peri-urban communities, one study in urban communities. In addition, seven studies used participants from health facilities and two recruited participants in school. All twenty articles focused on both females and males (*see Table 1*).

4.2 Study quality

The studies presented in (*see Table 1*) have varied methodological quality. All the studies had clear aims, objectives and well-justified rationale. The Critical Appraisal Skills Programme checklist was used to assess for quality of the 20 studies. Of these, 14 studies were of high quality, 4 studies of medium quality and 2 studies of low quality (

Appendix 3: CASP checklist for Quality assessment tool). All studies defined their

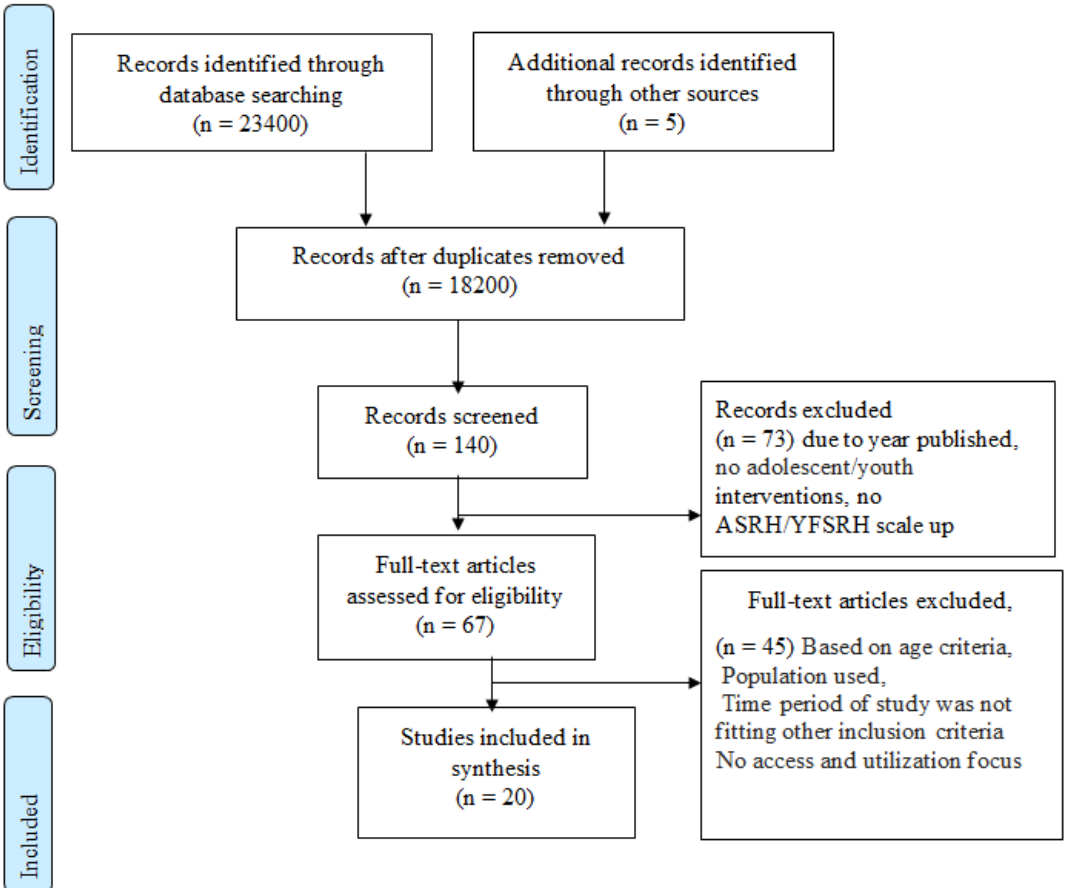

Figure 2: (PRISMA) flow chart: selection process for systematic review on the access and utilisation of youth friendly sexual and reproductive health in Sub Saharan Africa

research design (13,39-40). All studies described their sample size and participants 'recruitment strategy, though one study adopted a sampling strategy that was deemed inappropriate in relation to the study aims and objectives (35). The method was used for both quantitative and qualitative studies aimed at purposively recruiting participants with rich information on the topic of interest. It was also not clear whether biases were considered during the design of the study and analysis of the data. The following section synthesizes findings on access and utilization of YFSRH interventions in sub-Saharan Africa settings by main YFSRH outcomes.

4.3 Barriers to access to youth-friendly sexual and reproductive health services

The barriers to access to youth-friendly sexual and reproductive services can be categorized as: structural, individual, socio-economical, and socio-cultural (*see Appendix 4:Showing identified categories from selected studies*).

4.3.1 Individual barriers

The study identified fourteen studies whose primary aim was to evaluate Individual barriers such as knowledge, individual perception, shame and stigma affecting YFSRHS. Studies evaluating the utilization level of adolescents/ youth-friendly reproductive health services found only (38.5%) adolescents in South Africa and (21.5%) in Ethiopia were knowledgeable (40-41). Youths with a good knowledge of the type of adolescents and youth-friendly reproductive health services were more likely to utilize the service than their counterparts (6,42-43). High-quality studies assessing knowledge as a barrier in Nigeria and Ethiopia found that more than two thirds (79.5%) in Lagos, (98.1%) in Port Harcourt, (68.7%) in Ethiopia and (67.3%) in primary health care facilities (Ethiopia) youth did not know of a specific A/YFRHS provided in their health care facilities (24,40,44-45,24,46).

Although there are youth-friendly sexual and reproductive health services, most adolescents/youths were not aware of these services. According to a medium quality health facility, a cross-sectional study done in Kenya on young people's perception, knowledge of younger girls (12–14 years) was limited with the majority reporting that they did not know much about condoms, however, boys the same age were more knowledgeable and reported that young people used condoms for prevention of HIV, pregnancy and other STI (47). According to the multivariable analysis on utilisation factors limiting the youths from accessing YFSRHS, in Ethiopia, those with good

knowledge of the type of adolescents and youth-friendly reproductive health services were 1.68 times more likely to utilize AYFRH service [AOR=1.68 (95% (95% C.I:1.06-2.65)] (42).

Individual perception, fear, shame and stigma affected utilization of YFRHS among youth which was significant among those who believed that youth-friendly services can improve youth's health. These were more likely to utilize the service than their counterparts in a study carried out in Kenya. However, in a study from Tanzania, the youth reported that adolescents do not seek formal treatment for reproductive health problems as a result of shame and fear of disclosure because of the way they will be looked at by the community(13)(42).

In Ethiopia, a study done found that participants had the fewest misconceptions about SRH compared to other countries in sub-Saharan Africa and the most misconceptions about oral contraceptive pills causing illness and sterility (49). Similarly in Malawian study, one of the participants said *"For us youth there are [contraceptives] which we can take, and there are others which we cannot take as they can bring problems on our lives. The youth mainly use condoms, that one cannot bring problems unlike methods like IUD. People even fall sick because of such methods." (Female, in-school, 15–17 yrs., Machinga)* (48).

4.3.2 Structural barriers

Eighteen studies in the review indicated structural barriers affecting the delivery of YFSRHS. High-quality studies from South Africa and Ethiopia addressed primarily provider attitudes and the clinical environment as barriers to adolescents' access to healthcare during a Focus Group Discussion, however, perceptions of provider attitudes

towards adolescents appeared to be inconsistent (45,50). During an SSI, a nurse stated, '*There are mean nurses but there are good nurses [too]… It's unfortunate that the South African public, it's like every time when they go to the clinic they meet the mean nurses only. They never get to meet the good nurses.' (Female clinical nurse, SSI 4)* (50).

The negative attitude of health workers as per the case in one of the studies indicated that 30% in (Ethiopia) and Focus Group Discussions (18/20) participants in (Uganda) of health care providers had negative attitudes towards providing SRH services to adolescents which in turn affects the utilization aspects among adolescents (21,51). Health worker attitudes can also significantly hinder adolescents' utilization of RHS. Services need to be provided in a youth-friendly environment with health workers that are welcoming and supportive towards adolescents seeking care (26).

At the same time, the number of skilled health workers to offer these services is limited which was identified in a study carried out in South Africa, Ethiopia, and Uganda (17,39,52). The studies indicated the most common barriers to providing health services to young people, and YFS specifically were related to shortages of staff who received training on the provision of youth-friendly health services and the lack of a dedicated space for young people at the facilities (53,43,45). Data collected in Tanzania indicated that 37.2% of the service providers (SPs) who were interviewed reported that they had received training in adolescent sexual and reproductive health (ASRH) information and counselling which is significantly very low and had disparities (13). Counsellors in this study done in South Africa stated that they had received limited or no training in counselling adolescents. While all counsellors had general HIV/AIDS counselling skills, only a few had received formal training in adolescent development (50).

Many operational barriers in health facilities also impact access and utilisation of these services, such as inconvenient operating times, lack of transportation, and high cost of services (6, 25, 48). A study in Uganda indicated that the overall quality of SRH services at the facilities was reported of poor quality to most of them as reported in fifteen of twenty FGDs (51).

4.3.3 Cultural barriers

Five studies were identified accessing religious and traditional beliefs impact on access to YFSRH services. Social-cultural factors were greatly associated with some services mainly family planning, VCT, and counselling services. It was established that some cultures and parents in a community cross-sectional study done in Kenya and Ethiopia prohibited the youth from utilizing YFRHS as this was brought out when descriptive, chi-square and Odd statistics all showed significant relationships (24,25). Some participants in a study done in Malawi indicated that parents expressed negative opinions of youth using FP and parents could prevent youth from accessing FP services and also said youth below age 18 are not old enough to be sexually active and therefore do not need FP and that youth should focus on completing their education and not engage in sexual activities (48). In a study from Ethiopia, one of the participants indicated the lack of separate youth clinics saying *"When you go to hospitals for services, you may meet your parents there. I remember my friend who met her mother in a clinic"*(47).

4.3.4 Socio-economic barriers

Three studies reported that adolescents and young people most preferred low cost or no charges at all when seeking SRH services from youth centers. A high-quality study exploring barriers and perspectives of youth seeking family planning services found that participants in one district indicated that some government providers charged fees for

family planning for both male and female youth and also mentioned transport costs and long distances as another barrier to seeking FP services (48). Similarly, another high-quality study in Uganda and medium quality studies in Kenya and Nigeria also showed same results as nineteen of the twenty Focus Group Discussion adolescents noted that where the services were not free, the cost was not affordable to them and in Ethiopia, most respondents mentioned the low cost of services (21%) and (41.2%) lacked money as this is more evidenced in terms the amount needed to travel to health facilities as the distance/time taken is costly (51,53,43,24,46)

4.4 Facilitators to utilisation

In addition to the barriers to access, key facilitators were identified that promote utilisation of YFSRHS from the perspective of adolescents and service providers

4.4.1 Community outreach and involvement

Five studies reported on community outreach and involvement which is among the most common facilitator is outreach activities in the community, schools and churches, among the youth/adolescents. However, some indicated a lack of information regarding different areas of YFSRH which was documented in the above studies. A medium quality study done in Ethiopia indicated that (45.9%) had information about the availability of the services in the nearby facility and the most important sources of information were peers (54.6%), parents (27.1%), and mass media (7.6%)(42). The use of local radio stations, posters, magazines, sporting activities and entertainment was mentioned by the majority of the respondents in the study as a great way to promote YFSRH (54). In studies done in Uganda, the out-of-the school male adolescent FGDs preferred services like outreach form in the communities, at no cost and preferably with health workers not from the same area (47) and in Malawi a study on youth perspective on how to increase awareness

is; *"outreaches is what will help them [young people] because most of them do not know about what [service] is at the youth centre the youth do not know what kind of youth-friendly [services] are available" (FGD Boys, Meru)* (51).

In a study done in Ethiopia, Mass media messages (70.9%), advice from others (31.1%), illness of close relative (8.6%) and death of close relative 23(9.4%) were the most important factors that influenced the study participants to utilize the services (42). Similarly, results from a study in Nigeria indicate that community mobilization for awareness creation and support on SRH issues (59.3%), will support youth to better access SRH services in PHC facilities (40).

4.4.2 School health education

Four studies reported adolescents and young people most preferred in-school health education and however some preferred out school health education as sources of seeking YFSRH services. School health education also promoted the awareness and involvement in access and utilisation of YFRHS as it was indicated in a high-quality study because participants described health education and specific space for the teenagers as key components of a teenage friendly service with a significant number (81.7%)(Nigeria) of the respondents agreed that in-school clubs can create demand for SRH services and 64.7% of them also agreed that out-of-school clubs are important for SRH services (46,39,52). In a low-quality study in Ethiopia, the Majority of the respondents (72.7%) who were involved in the available school clubs and (54.3%) had discussed on YFSRH issues with friends who put them at high levels of utilisation (6).

Youths who participated in peer to peer discussions were more likely to know about and utilize sexual and reproductive health services than those who did not participate. Peer influence remains strong, as shown in this study where peers or friends were found to be

the major source of information. Peers were mentioned as resources to support other youth if they shared news and information about FP, but they were also reported to sometimes mock and tease others who they knew wanted to use FP (48). Friends/peers (45.7%) were the best sources of information on A/YFRHS however, the most popular services known were family planning (81.6%), voluntary counselling and testing (73.8%), and sexually transmitted diseases (67.3%) (44).

The consensus opinion was that young people who came to the Youth Centre to play games or be involved in other activities eventually would end up using the centre's SRH services if needed (47). Both girls and boys noted that games such as pool only attracted boys and made girls shy away from coming to a youth centre. Also, youth playing games at the same place where health services are provided can be a promoting factor as it brings people together to discuss the problems they face and improve them (47,45).

4.5 Recommendations/options to improve YFSRHS

4.5.1 Improvement of available YFSRHS to favour youth's needs and preferences

Two studies indicated how youth's needs and preferences are to be considered to improve YFSRH services. In a high-quality study, participants expressed the need for improvement in adolescent` friendly sexual and reproductive health services. Recommendations on the implementation of healthcare service provision characterized by a prompt, entertaining and welcoming environment that would encourage adolescents to talk freely and in another high-quality study, health workers viewed a teenager-friendly service as one that could provide privacy and sufficient time and patience when dealing with teenagers. They also described that a friendly service would be offered by health workers with specific training in teenage pregnancy and with knowledge of how to allocate specific time to teenagers (50,52,42). A study in Nigeria indicated that a large

percentage (80.0%) of the respondents believed that youth counsellors are best at serving other youth in the community because they can relate to their health needs better. Similarly, a hospital-based cross-sectional study in South Africa during FGD, one of the respondents said; '*Include teenagers in the programmes. I think that would make a major, major difference.' (P5 female counsellor)* during the design and implementation of the programmes being delivered (50,40).

In two high-quality studies done both in Uganda and Malawi, the most common suggestion among youth participants and parents was the need for more information on FP through counselling which would ensure youth understand the importance on FP and how methods work (48,51). A medium quality study in South Africa encouraged training and on-going support to be provided to facilitate this; the importance of such training is to encourage more than one member of staff per facility to be equipped to allow for staff turnover (41).

In Kenya, the majority of the respondents wished to see an increase in SRH services especially in rural areas including the use of mobile clinics. The consensus was that providing a wide range of SRH services in either integrated health facilities or youth centres was more likely to ensure anonymity and that privacy could be maintained (47). Meeting these standards could make a major contribution to securing adolescents' health, especially in preventing unintended pregnancies and HIV (35).

4.5.2 Standardisation of services and clinics

Two high-quality studies assessed another key factor in development and implementation of quality standards found in Tanzania during the scale-up of YFSRHS and utilisation of YFRHS in Nigeria recommend that a useful means of ensuring that

efforts to make health services adolescent friendly are grounded in wider public health initiatives at the national, regional and council levels (39,46).

Table 1: Characteristics of included studies exploring barriers to access and facilitators of utilisation of youth friendly sexual and reproductive health services among the youth

Authors name and year	country	Study settings	study design	Aim and objective	approach	number of participants	age and sex	findings	CASP quality assessment
Mulaudzi et al 2018 (50)	South Africa	hospital	cross sectional	To explore barriers to providing adolescent-friendly sexual and reproductive health services.	focus group discussion and semi structured interviews	>41	both female and male	**Barriers**; health care providers attitude, Counsellors reported inadequate training to address adolescent psychosocial issues, including adolescents- specific ages as counsellors	high quality
Godia et al 2014 (47)	Kenya	health care facilities and youth centers	cross sectional	Understanding of the SRH problems young people face and document perceptions of available SRH services as reported by young people themselves. explored experiences and perceptions of young people	focus group discussion and in-depth interviews	> 57	15-24 boys and girls	**Barriers;** in their responses were broad and reflect the cultural, social and economic environment in which they live. **Facilitators**; Recreational activities attract the boys. Increasing awareness through outreaches	medium
Helamo et al 2017 (42)	Ethiopia	institutions	cross sectional	Assesses factors affecting adolescents and youths friendly reproductive health service utilization among high school students in Hadiya zone, Ethiopia.	quantitative	42 institutions	15-24 years female and male	**Barriers;** Youths with a good knowledge of the type of adolescents and youth friendly reproductive health services were more likely to utilize the service than their counterparts, utilisation levels were low and youth were unaware of the services being provided	medium
Ajike et al 2016 (44)	Nigeria	rural and urban	cross sectional	the knowledge of youths on available adolescent/youth friendly services (A/YFRHS) in Ikeja, Lagos State, Nigeria	quantitative	>427	15-24 years boys and girls	**Barriers**; The participants knew what adolescent/youth friendly services were but did not know where to get these services from because they were not aware of the available A/YFRHS facilities	high quality

Self et al 2018 (48)	Malawi	community	Qualitative	To explore the perspectives of youth and adults about the drivers and barriers to youth accessing family planning and their ideas to improve services.	Focus group discussion	> 800	15-24 years female and male	**Barriers**; to youth accessing family planning included contraception misconceptions, the costs of family planning services, and negative attitudes. Parents had mixed views on family planning,	high quality
Atuyambe et al 2015 (51)	Uganda	urban and peri urban	qualitative	to assess the sexual reproductive health needs of the adolescents and explored their attitudes towards current services available	focus group discussions	>100	10-24 years male and female	**Recommendations** ; establishing adolescent friendly clinics with standard recommended characteristics (sexuality information, friendly health providers, a range of good clinical services such as post abortion care	high quality
Chandra-Mouli et al 2013 (39)	Tanzania	urban and rural	Survey	to extend the reach of Adolescent Friendly Health Services (AFHS) in the country	qualitative	>100	15-24 years female and male	**Barriers;** poor knowledge , it had received reports that the quality of the AFHS being provided by some organizations was poor **Recommendations;** standardized definition of AFS, ,	high quality
Zewdie B. et al. 2018 (49)	Ethiopia	in schools	cross sectional	young people's perceptions and barriers towards the use of sexual and reproductive health services in Southwest Ethiopia	focus group discussion	>1262	15-24 years female and male	**Barriers**; poor perceptions about SRH, feeling of shame, fear of being seen by others, restrictive cultural norms, lack of privacy, in available services	high quality
Rukundo et al 2015 (52)	Uganda	community	cross sectional	Views concerning factors affecting availability, accessibility and utilization of teenager friendly antenatal services in Mbarara Municipality, southwestern Uganda.	key informant interviews	>20	15-19 years female and male	**Barriers**; health workers described their experience with teenagers as challenging due to their limited skills when it comes to addressing adolescent-specific needs.	medium
Eremutha et al 2019 (40)	Nigeria	rural and urban areas	stratified and purposive	to generate increased understanding of the barriers that limit youth access to sexual and reproductive health services(SRH) offered by	mixed method	>300	10-24 female and male	**Facilitators**; community mobilization for awareness creation and support on SRH issues will support youth to better access **Barriers**; lack of awareness, negative	high quality

				Primary Health Care (PHC) facilities in Nigeria.				attitude of health workers, cost of service and parents perception or fear	
Betebebu Mulugeta et al. 2019 (53)	Ethiopia	facility based	cross sectional	to assess youth-friendly service quality and associated factors at public health facilities in Arba Minch town, Southern Ethiopia	quantitative	>403	15-19 female and male	**Facilitators;** comfort and providers sex, waiting time, place of YFS, are factors which are significantly associated with client satisfaction in a health facility	high quality
Ayehu et al 2016 (43)	Ethiopia	community	cross sectional	To assess young people's sexual and reproductive health service utilization and its associated factors in Awabel district, Northwest Ethiopia.	quantitative	>781	15-24 years male and females	**Facilitators;** Young people from families of higher family expenditure, lived with mothers, participated in peer education and lived near to a Health Center were more likely to utilize sexual and reproductive health services at youth centers	high quality
Binu et al 2018 (6)	Ethiopia	school based	cross sectional	To assess utilization of Sexual and Reproductive Health (SRH) services and its associated factors among secondary school students in Nekemte town, Ethiopia.	quantitative	>736	10-24 years female and male	**Barriers**; Inconvenient times, lack of privacy, religion, culture, and parent prohibition were barriers to SRH service uptake cited by the school youths.	low
James et al 2018 (35)	South Africa	health facilities	cross sectional	To detail the evaluation of AYFS against defined standards to inform initiatives for strengthening these services.	qualitative	< 14 facilities	15-24 years male and female	**Barriers**; Facilities had the essential components for general service delivery in place, but adolescent-specific service provision was lacking especially the sexual and reproductive health services	medium
Geary et al 2014 (41)	South Africa	rural health facilities	Survey	Investigate the proportion of facilities that provided the Youth Friendly Services programme and examine healthcare workers' perceived barriers to and facilitators of the provision of youth-friendly health services.	qualitative	<9 facilities	12-24 years female and male	**Barriers**; lack of youth-friendly training among staff and lack of a dedicated space for young people, health workers attitude, did not appear to uphold the right to access healthcare independently. breaches in young people's confidentiality	high quality

Motuma et al 2016 (45)	Ethiopia	community	cross sectional	to assess the extent of youth friendly service utilization and the associated factors among the youth	mixed methods	<346	15-24 years female and male	**Barriers**; source of information and having knowledge about services were associated with utilisation, negative perception about counselling affected the outcomes.	high quality
Renju et al 2010 (13)	Tanzania	health facilities	Survey	A process evaluation of the 10-fold scale up of an evaluated youth-friendly services intervention in Mwanza Region, Tanzania, in order to identify key facilitating and inhibitory factors from both user and provider perspectives.	mixed methods	<500	15-24years female and males	**Barriers**; scale up faced challenges in the selection and retention of trained health workers and was limited by various contextual factors and structural constraints.	high quality
Obonyo Perez Akinyi 2009 (24)	Kenya	community	cross sectional	Examined how those factors determined or affected the utilization patterns of YFRHS by the youth. mitigating and addressing challenges to scale up	mixed methods	<9338	10-24 years female and male	**Facilitators;** level of education, type of school and youth's awareness about existence of reproductive health facility and services offered were significantly associated with utilization	medium
Chimankpam Williams Uzoma 2017 (46)	Nigeria	health facility	cross sectional	To assess the utilization of youth friendly health services by young people in Port Harcourt and factors that affect utilisation.	mixed methods	<390	15-24 years female and males	**Barriers**; low knowledge levels **facilitators;** Friends/family/contemporary and notice board were major sources of information	high quality
Berhe et al 2016 (54)	Ethiopia	community	cross sectional	Assess utilization of youth friendly services and associated factors in Mekelle city.	mixed methods	41 health facilities	15-29 years females and males	**Barriers**; negative attitude towards youth friendly service utilization. **Facilitators;** awareness and prior knowledge were predictors of utilisation.	medium

CHAPTER FIVE: DISCUSSION AND CONCLUSION

This systematic review aimed at synthesizing evidence on barriers and facilitators affecting access and utilisation of YFSRHS together with recommendations to improve and scale-up of these services among youth/adolescents, in Sub Saharan Africa. The most common barriers in the review were structural barriers which include the negative attitudes of health workers, inconvenient hours, quality of services, unskilled health workers which was indicated in 18/20 studies. The health workers attending to the youth used abusive languages while others were not sympathetic enough to provide services like family planning and contraceptives. Nevertheless, some were not trained adequately/not at all on how to deliver the services to the youth posing a great challenge. A similar observation was found in a context analysis assessing young people's experience on SRH in sub-Saharan Africa (55).

The review showed the second prominent barrier as individual barriers emanating from limited access to YFSRH is knowledge and awareness among adolescent/youth about the services which is a key hindrance as reported in 8/20 studies. Adolescents have limited and, in some places, no access to sexual and reproductive health education and contraception, making adolescent girls more prone to early and unintended pregnancies (30). To summarize, the youth's lack of knowledge on YFSRH issues; access to reproductive health information is often hindered because of many different factors including stigma related to young age, parental consent, access to YFSRH services and commodities is challenging because of distance, costs and quality of services. The studies in this review show similar finding with a systematic review done on sexual and reproductive health knowledge, experiences and access to services among refugee, migrant and displaced girls and young women in Africa which indicated the limited SRH knowledge and awareness among adolescent girls which cause the adolescents to refrain from using them (56).

Few studies reported on socio-economic barriers and cultural barriers because the youth have limited knowledge hence don't access, fear of stigmatisation by health workers or fellow peers and parental consent on Family planning services even when services are free. Some services are not free of charge such as family planning and the cost of receiving them due to distance is costly so the youth opt-out from using them. These barriers are due to context and structure of the environment in which the youth live in.

Only two studies were identified focusing on scale-up which were from one country (Tanzania) and still had scale-up challenges in the selection and retention of trained health workers and was limited by various contextual factors and structural constraints that still possess a barrier to utilisation of YFSRH (39). In addition to research on delivering and scaling up YFSRH services to different youth, we should also consider implementation research in different sub-Saharan countries like Youth-friendly sexual and reproductive health services being grounded in wider public/global health initiatives at the national and regional levels in order to play a larger role in implementation and delivery than in static settings where non-governmental organizations deliver most of the services.

The review indicated that facilitators to utilisation of YFSRH service included community outreaches and involvement, school health education, peer-led education and mass media campaigns, and sporting activities and entertainment activities at youth centres were found to improve youth-friendly sexual and reproductive health services which are sources of information preferred by the youth. The World Health Organization (WHO) review on universal access showed that actions to make SRH services user friendly and welcoming had led to an increase in the use of services by adolescents (44). The review suggests that youth are more likely to seek sexual health information from community outreaches and health education in schools and peers friends their health workers' attitude and limited skills should

be assessed critically and prioritized as adolescents/youth are willing to access these services through them.

Youth-friendly sexual and reproductive health services whether offered in dedicated youth centers or public health facilities largely attract male and female clients which was portrayed in majority of the studies however, one study indicated only female clients (43). This study contradicts with a study done in Sweden, which has youth centers throughout the country, liberal attitudes and few legal barriers to service provision, the majority of patient visits to youth centers were made by females (57).

This review identified the need to improve access to and standardising the quality of health services for adolescents/youth needs along with integrating efforts such as educate, empower and support adolescents. A user-friendly sexual and reproductive health service does not necessarily ensure service utilization by adolescents/youth. Similarly, a review done on assessing youth friendly sexual and reproductive health indicated the need for standardization and prioritization of indicators for the evaluation of YFHS which are accessibility, staff characteristics and competency, and confidentiality and privacy favoring youth's needs (2). Evidence shows that focusing on strengthening health systems has a positive effect on access and uptake of some youth-friendly sexual and reproductive health services (58). Further, evidence shows that many health systems interventions and reforms have led to an increase in coverage of several health services. These gaps point to the need for robust and timely research on the mechanisms through which YFSRH facilitators can increase utilisation and access across a variety of Sub Saharan Africa.

Evidence on attribution is particularly weak, with the vast majority of studies using a cross-sectional design, with no control group. Qualitative studies have the potential to contribute rich perspectives from study populations on YFSRH service utilisation and barriers to access, but we found only three studies using this design, and six studies using mixed methods to

assess YFSRH. Overall, only 65% of the studies (n=13) selected were graded as high quality, 30% as medium quality (n=6) and 5% as low quality (n=1). There was limited number of use of stratification, by gender and age as some studies few indicated the differences, and so we were not able to capture potentially differing health access and utilisation outcomes among adolescent/youth.

The narrow inclusion criteria may have led to the exclusion of some peer-reviewed literature and conference articles. Additionally, our language inclusion criteria, i.e. only studies published in English, imposed by the capacity of the study researcher, may have limited the numbers of citations returned by our search.

Study outcomes and methods varied widely across the 20 included studies, which did not allow to conduct a meta-analysis. Acknowledgement of the varying social and cultural diversity of study settings included in our review would have an impact on the access and utilisation of YFSRH services in Sub Saharan Africa.

Although PubMed, google scholar, Embase, Web of Science are the most often used search databases, there might be a slight possibility that some relevant studies included to other databases, e.g., Global Health were missed. Some of the peer-reviewed studies which could not be accessed, in other words needed payment were also not included.

CONCLUSION

This review synthesised key barriers of access and facilitators to utilisation of YFSRH services by youth/adolescents. It has shown that most common barriers impeding YFSRH services due to structural barriers like the negative attitude of health workers and unskilled health workers and individual barriers emanating from low levels of knowledge among the youth/adolescents.

Regarding facilitators of utilisation, results showed that without sustained community involvement and outreach, school health education, recreational activities and the provision of free or reduced-cost youth-friendly reproductive health services to those with a financial constraint, will increase utilisation together giving the youth access to the health services hence promote sustainability.

Further studies should be done on how cultural factors such as religion and beliefs affect the access and utilisation of YFSRH services.

The review emphasizes the need to educate and train health the youth/adolescent to know more about the reproductive health services being provided at youth-friendly centers and for public health policy actors at local, national, and international levels. Therefore, there is need for the government interventions on YFSRHS to put in place quality implementation standards to improve services and scale up the services by intensifying training of providers and offering refresher courses on youth-friendly SRH services and education of the young people on SRH services to improve acceptance based on findings and recommendations.

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APPEDIXES

Appendix 1; PRISMA-P (Preferred Reporting Items for Systematic review and Meta-Analysis Protocols) 2009 checklist: recommended items to address in a systematic review protocol*

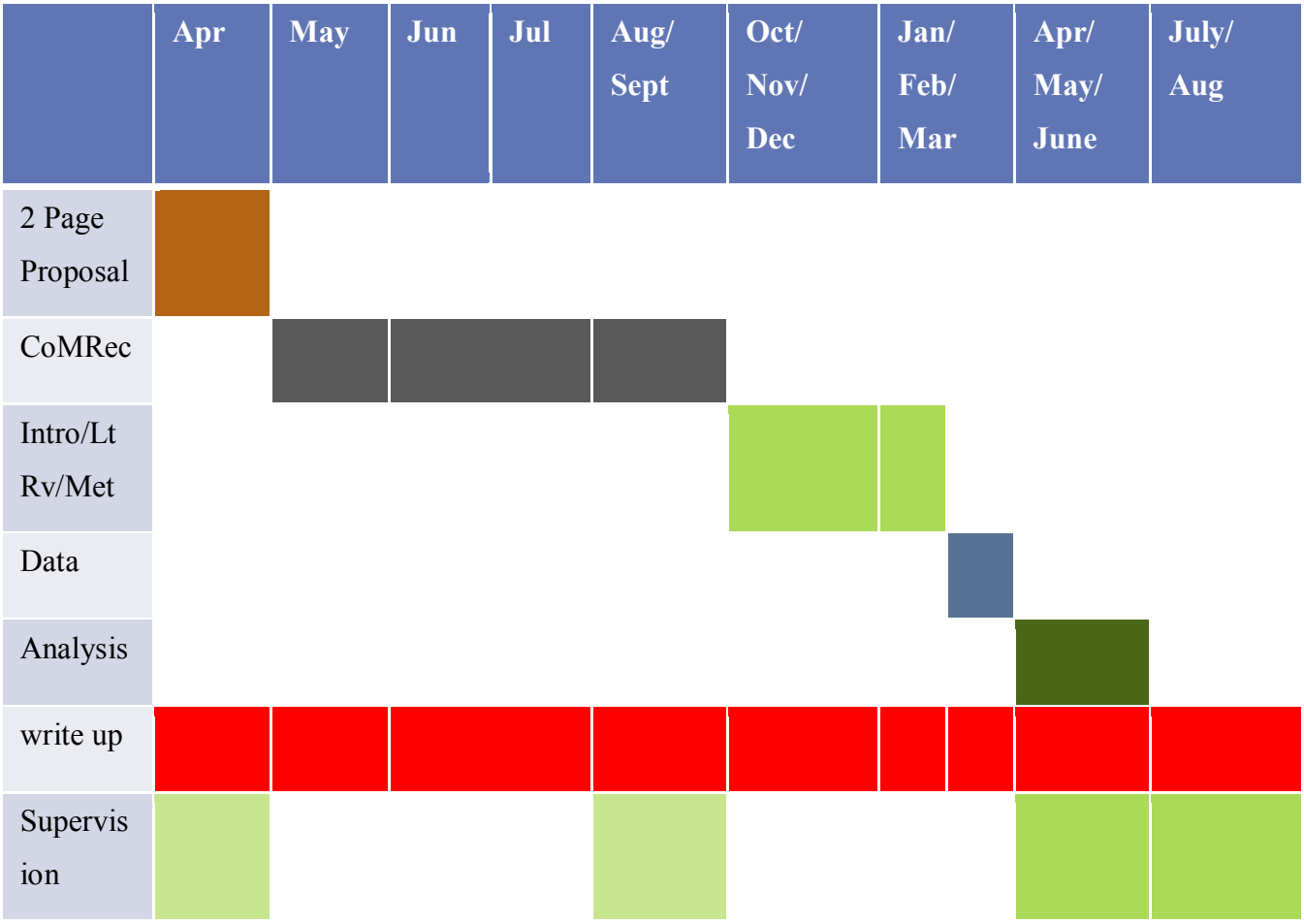
Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	1
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	4 & 5
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	5
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	5

Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	5 & 6
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	5
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	S2
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	5 & 6
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	5 & 6
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	5 & 6
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	6
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	7
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	7

Section/topic	#	Checklist item	Reported on page #
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	7 and S2
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	N/A
RESULTS			

Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	16 to 23 & table 1
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	16 to 23 & Table 1
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	16 to 23 & Table 1
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	16 to 23 & Table 1
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	7 to 26 & Table 1 and fig 1
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	16 to 23 & Table 1
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16).	N/A
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	24, 25 and 26
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	26 and 27
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	27
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	28

Appendix 2: Study period presented as a Gantts chart



Appendix 3: CASP checklist for Quality assessment tool

CASP checklist for Quality assessment tool

Questions	(50)	(47)	(42)	(44)	(48)	(51)	(39)	(49)	(52)	(40)	(53)	(43)	(6)	(35)	(41)	(45)	(13)	(24)	(46)	(54)
Is there a clear statement of the aims and research question?	yes	yes	yes	yes	yes	yes	yes	yes	yes	Yes	yes	Yes	yes	yes	Yes	Yes	Yes	yes	yes	yes
Is the methodology appropriate for the study?	yes	yes	partly	yes	yes	yes	yes	yes	yes	Yes	yes	Yes	partly	yes	Yes	Yes	Yes	yes	Yes	partly
Is the research design appropriate to address the aims of the research?	yes	yes	yes	yes	yes	yes	yes	yes	yes	Yes	yes	Yes	partly	yes	Yes	Yes	Yes	yes	Yes	yes
Have ethical issues been taken into consideration?	yes	yes	Yes	yes	yes	yes	yes	yes	yes	Yes	yes	Yes	yes	yes	Yes	Yes	Yes	yes	yes	yes
Is the sampling strategy appropriate to address the Authors name, country?	yes	yes	Not clear	yes	yes	yes	yes	yes	partly	yes	yes	Yes	no	yes	Yes	Yes	Yes	yes	Yes	yes
Are the method of data collection appropriate and clearly explained?	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	Yes	Yes	yes	yes	Yes	yes	yes	yes	Yes	yes
Is the description of the data analysis sufficiently rigorous and comprehensively described?	yes	yes	yes	yes	yes	yes	yes	yes	partly	yes	Yes	Yes	yes	partly	Yes	yes	yes	partly	Yes	partly
Is there a clear description of the findings and	yes	partly	yes	yes	yes	yes	yes	yes	yes	yes	Yes	Yes	yes	yes	Yes	yes	yes	partly	Yes	yes

results?																			
Are the findings of the study generalizable or transferable to a wider population?	yes	partly	yes	yes	yes	yes	yes	yes	no	yes	Yes	Yes	no	partly	Yes	yes	Yes	yes	Yes	yes
How important are these findings to policy and practice?	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	Yes	yes	Partly	Yes	Yes	yes	yes	yes	Yes	yes
Total	High	medium	Medium	high	high	high	high	high	medium	high	high	high	low	medium	high	high	high	Medium	high	medium

All criteria fulfilled = High quality=1

Six and above criteria fulfilled =medium=2

Less than six criteria fulfilled = Low=3

SEARCH STRATEGY

Search	Add to builder	Query	Items found
#7	Add	Search **((adolescent) AND (adolescent friendly sexual and reproductive health)) AND sub Saharan Africa**	64
#6	Add	Search **((youth) AND (youth friendly sexual and reproductive health)) AND sub Saharan Africa**	67
#5	Add	Search **((sub Saharan Africa) OR south part of Africa) OR (low and middle income countries)**	224286
#4	Add	Search **(((sexual and reproductive health)) AND youth sexual reproductive health) AND adolescent sexual reproductive health**	5566
#3	Add	Search **(((youth friendly sexual) AND reproductive health services) AND adolescent friendly sexual) AND reproductive health services**	152
#2	Add	Search **((youth friendly services) OR youth centers) OR adolescent friendly services**	48649
#1	Add	Search **((youth) OR adolescents) OR young people**	2592709

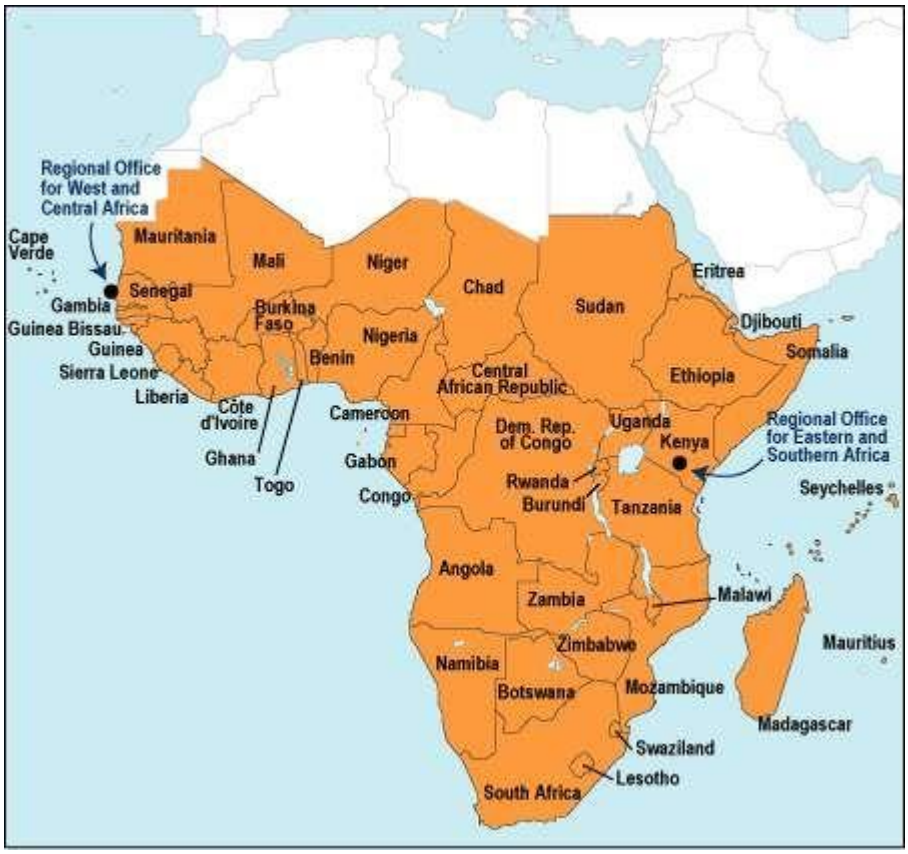
Appendix 4:Showing identified categories from selected studies

Category	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	total
BARRIERS																					
Structural barriers																					
negative attitude of health workers	*				*					*					*					*	5
lack of privacy								*			*		*								3
skilled health workers	*					*			*						*			*			5
infrastructure							*				*					*		*			4
quality								*									*				2
inconvenient times											*		*								2
Individual barriers																					
shame and stigma					*			*		*					*						4
knowledge			*	*			*			*		*				*			*	*	8
individual perception								*												*	2
Socio economic		*																			1

barriers																					
cost					*			*		*											3
Cultural barriers		*																			1
parents attitude					*								*								2
culture								*					*								2
religion													*								1
FACILITATORS																					
Health System providing quality access						*															1
Community involvement and outreaches		*								*					*				*		5
School health education											*	*					*		*		4
other																					
peers																*			*		2
phone access													*								1

recreational activities		*																			1
Recommendation for YFSRHS																					
Standardized definition of services								*													1
Standardized clinics									*												1

Appendix 4: Showing countries in Sub Saharan Africa



Appendix 5: The Manuscript

Factors influencing access to and utilisation of youth-friendly sexual and reproductive health services in sub-Saharan Africa: A systematic review

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Abstract

Background: Despite the global agreements on adolescents' sexual and reproductive health and rights, access to and utilisation of these services among the youth/adolescents remain unsatisfactory in low- and middle-income countries which are a significant barrier to progress in this area. This review established factors influencing access and utilisation of youth-friendly sexual and reproductive health services (YFSRHS) among the youth in sub-Saharan Africa to inform programmatic interventions.

Methodology: A systematic review of studies published between January 2009 and April 2019 using PubMed, Web of Science, EMBASE, Medline, and Cochrane Library, and Google Scholar databases was conducted. Studies were screened based on the inclusion criteria of barriers and facilitators of implementation of YFSRHS, existing national policies on provision of YFSRHS, and youth's perspectives on these services.

Findings: A total of 23,400 studies were identified through database search and additional 5 studies from other sources. After the full-text screening, 20 studies from 7 countries met the inclusion criteria and were included in

the final review. Structural barriers were the negative attitude of health workers and their being unskilled and individual barriers included lack of knowledge among youth regarding YFSRHS. Facilitators of utilisation of the services were mostly structural in nature which included community outreaches, health education, and policy recommendations to improve implementation of the quality of health services and clinics for adolescents/youth to fit their needs and preferences.

Conclusion: Stakeholder interventions focusing on implementing YFSRHS should aim at intensive training of health workers and put in place quality implementation standard guidelines in clinics to offer services according to youth's needs and preferences. In addition, educating the youth through community outreaches and health education programs for those in schools can facilitate utilisation and scale up of the service.

Keywords: Adolescents, barriers, facilitators, reproductive health, youth, Africa

Plain language summary

Access and utilisation of Youth-friendly sexual and reproductive health is still a big challenge for the youth especially in sub-Saharan Africa. In this study, we explored the underlying reasons for the low access and utilisation of youth friendly sexual and reproductive health services and potential solutions to the problem. Articles used in this study were retrieved from different data sources and those that contained barriers and facilitators of access and utilisation of youth-friendly sexual and reproductive health services implementation were summarised.

The key barriers were negative attitude of health workers and their being unskilled emanating from the administrative section theme. The individual factor was the lack of knowledge among youth. The promoters of utilisation were community outreaches, health education and improvement of the quality of services in the clinics for adolescents/ young people's needs.

Moving forward, stakeholders should aim at increasing the training of health workers and improving the quality of services being offered to the youth. To address the individual barriers, youth should be reached with information through community outreaches and education in schools.

Background

In many African countries, sexual and reproductive health (SRH) needs of young people / youth are often underserved and underestimated despite their demonstrated need and the urgency of these services [1].

Continental population remain high at approximately 1.2 billion with the highest number being youth aged 15–24 years, 226 million—19% of the global youth population—of whom live in sub-Saharan Africa [2]. The term young people which according to the World Health Organisation (WHO) are persons aged between 10 and 24 years and youth (15–24 years) are interchangeably used but often meaning the youth, adolescents, and young people [3]. Youth is characterized as a period of optimum health with a series of physiological, psychological, and social changes that may expose them to unhealthy explorative sexual behaviour such as early sex engagement, unsafe sex and numerous sexual partners and represent 25% of the world population [4, 5]. SRH comprises a major component of the global burden of sexual ill-health. Nearly a quarter of girls aged 15–19 years are married with an estimated 16 million adolescents giving birth each year globally, 95% of whom are from low- and middle-income countries (LMICs) [6]. Trends in delayed marriages do not indicate a decrease in the age of onset of sexual activity among the young people but rather highlights the need to improve access to SRH information, skills and improve services to learn more about sexuality and prevent unwanted pregnancies and sexually transmitted infections [7]. Several factors are contributing to high adolescent/youth fertility rates in sub Saharan Africa, including lack of SRH knowledge, limited access to/use of contraceptives, condoms, and SRHS, gender inequality and cultural practices such as child marriage and initiation ceremonies [8]. In sub-Saharan Africa, adolescents face many significant SRH challenges such as limited access to youth friendly services (YFS) including information on growth, unsafe abortion, gender-based violence, sexuality, and family planning (FP). This has led youth into risky sexual behaviour resulting in high STI and HIV prevalence among young people, early pregnancy, and vulnerability to delivery complications resulting in high rates of death and disability [6]. Numerous surveys in LMICs indicated that only 33% of young men and 20% of young women have comprehensive knowledge of HIV but still less than half of young men and women surveyed reported using condoms at their last time of sexual activity [8]. According to the 2016 gaps report by UNAIDS, only 10% of young men and 15% of young women were aware of their HIV status which leaves a big challenge to achieving good reproductive health and wellbeing for all [2]. Young girls less than 19 years who get pregnant have a 50% increased risk of stillbirths and neonatal deaths, as well as an increased risk for preterm birth, low birth weight, and asphyxia which in turn affect the health of the unborn child and perpetuate the cycle of poverty [5]. Youth-friendly services are an amalgamation of health facility characteristics, health service provision techniques, and health services offered which are key strategies for improving the health of adolescents in Africa.

According to the WHO guidelines, in order to be considered Youth Friendly Health Services (YFHS), the services are required to be accessible, acceptable, equitable, appropriate and effective, gender-equitable and serve as a channel for access to FP and SRH [9]. In 2015, WHO/UNAIDS published the Global standards to improve quality of health-care services for adolescents and ever since then, many countries have adopted and adapted the Global Standards. Although there has been the momentum of implementing SRH services, there are major gaps among the youth in receiving information, the effectiveness of the YFS and skills that are affected by culture, and governmental and financial policies [10, 11].

Youth Friendly Services are a key strategy for improving young people's health, however, there is an increasing need to break down the barriers to implementation of Youth Friendly Sexual and Reproductive Health Services

(YFSRHS) that prevent the young people from accessing quality SRH services in sub Saharan Africa [12]. This study thus aimed at reviewing articles on factors influencing access to and utilisation of YFSRHS in sub-Saharan Africa.

Methods

Protocol

The protocol for this systematic review was developed following the Preferred Reporting Items for Systematic Reviews and Meta-Analysis Protocols (PRISMA-P) guidelines for reporting systematic reviews (Additional file 1) [13]. The protocol of this review was registered on PROSPERO (CRD42020173073).

Data search

Studies were screened to identify those that examined the availability of YFSRHS and youth perspectives on these services used to document the barriers to access and facilitators of utilisation of YFRHS. The electronic journals and reports were searched comprehensively by using PubMed, Web of Science, EMBASE, Medline, Cochrane Library, and Google Scholar databases. Other sources were identified through scanning of references of selected sources. All databases were well-established, multi-disciplinary research platforms, holding a wide variety of peer-reviewed journals, and those that will be kept up to date (Additional file 2).

Inclusion criteria

The researchers only included studies that were published containing articles from sub-Saharan Africa published from January 2009 to April 2019 and had qualitative and/or quantitative methods and mixed methods. Qualitative research studies included those that employed focus group discussions, in-depth interviews, and structured observations. Quantitative research studies of designs were randomized control trials, cross sectional and case–control. Youth (aged 15–24 years) along with adolescents (10–19) years, were included in this review. The review included studies on youth-friendly service scale-up, utilisation, and access to YFSRHS and were published in English.

Exclusion criteria

Studies or evaluations carried outside sub-Saharan Africa, multiple publications, systematic reviews or narrative reviews, letters to the editor, case reports were excluded from the review. Articles written in other languages than English were also excluded. Studies with participants predominately greater than 24 or less than 10 years of age or with unclear ages were excluded. Some studies used non-youth key informants and hence excluded.

Screening

Title and abstract screening of all papers identified by the search strategy were independently performed by two researchers with reference to the published inclusion/exclusion criteria. Key themes were compiled for each article and these themes were grouped based on common traits for thematic synthesis, the result section of each article was analysed using line by line coding. Each category was designated a colour code blue for included and red for excluded. Initial screening of abstracts and titles was done using a process of semi automation while Rayyan QCRI software [14] allowed incorporating a high level of usability. Reference management software Mendeley was used to organise articles retrieved from the comprehensive literature review and then analysed.

Quality assessment and appraisal of retrieved articles

Quality assessment is crucial to ensure that the findings of the papers are correct and accurate. All studies that meet the eligibility criteria were assessed for quality independently and in duplicate. The included studies were appraised critically for methodological quality and rigour using the Critical Appraisal Skills Programme checklist (Additional file 2) [15]. We used a modified appraisal tool to critically assess the trustworthiness and relevance of the published papers with a keen focus on the study design, sampling methods, participant recruitment strategy, ethical consideration, data analysis, and findings.

Data extraction

A common data extraction tool was used for all studies, with variation depending on the research design. The extraction included: what information is to be collected on each study (e.g. author, publication source, year), participants and demographics, study design, outcomes, analyses used, and key findings, how the databases or forms was used, how information was recorded and the number of reviewers. Two data extractors (NLR and NR) resolved the discrepancies and any remaining differences were resolved by the other team member (IKC). As part of the extraction process, each qualitative and quantitative study was assessed for methodological rigour. The retrieved data was analysed to answer the main research and specific objectives.

Synthesis

Finally, the findings were summarized in a narrative synthesis. Te synthesis is presented in the results and discussion chapter.

Results

A total of 23,400 studies were identified through a database search and an additional five studies from other sources. After the full-text screening, 20 studies met our inclusion criteria (***Error! Reference source not found.***) and were selected for final review. We identified studies focusing on access, utilisation and scale-up of youth/adolescent-friendly sexual and reproductive health services conducted in sub-Saharan Africa and found articles from 7 countries (Tanzania, Nigeria, Ghana, Kenya, Ethiopia, Uganda, and South Africa) which were included. nineteen studies used cross-sectional study design, nine selected studies from (South Africa, Kenya, Uganda and Ethiopia) used qualitative, six studies from Nigeria and Ethiopia used quantitative methods and the remaining six studies from Ethiopia, Nigeria, Tanzania and Kenya combined both methods in their studies. Eleven studies had their participants from the community; four studies were done among both rural and urban communities, one study among urban and peri-urban communities, one study in urban communities. In addition, seven studies used participants from health facilities and two recruited participants from schools. Nineteen articles focused on both females and males except one which had only females (*Table 1*).

Study quality

The studies presented in (*Table 1*) had varied methodological quality. All the studies had clear aims, objectives, and well-justified rationale. The Critical Appraisal Skills Programme checklist was used to assess for quality of the 20 studies. Of these, 14 studies were of high quality, 4 of medium quality, and 2 of low quality. All studies defined their research design [16][17][18]. All studies described their sample size and participants 'recruitment strategy, though one study adopted a sampling strategy that was deemed inappropriate in relation to the study aims and objectives [19]. The method used for both quantitative and qualitative studies aimed at purposively recruiting participants with rich information on the topic of interest. It was also not clear whether biases were considered during the design of the study and analysis of the data. The following section synthesizes findings on access and utilization of YFSRH interventions in sub-Saharan Africa settings by main YFSRH outcome.

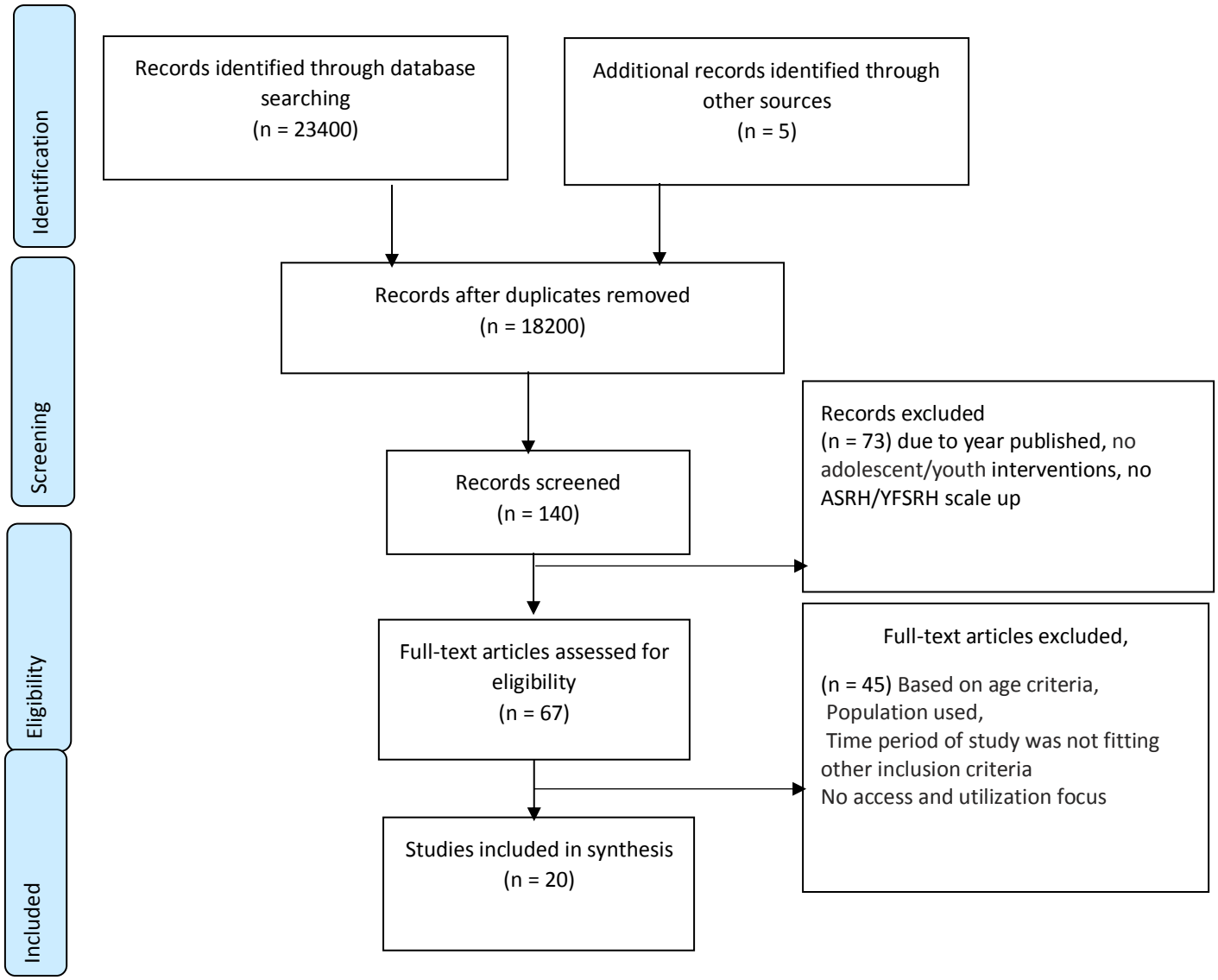

Figure 3; (PRISMA) flow chart: selection process for a systematic review on the access and utilisation of youth-friendly sexual and reproductive health in Sub Saharan Africa.

Barriers to access to youth-friendly sexual and reproductive health services

The barriers to access to youth-friendly sexual and reproductive services can be categorized as structural, individual, socio-economic, and socio-cultural.

Individual barriers

The study identified fourteen studies whose primary aim was to evaluate Individual barriers such as knowledge, individual perception, shame and stigma affecting YFSRHS. Studies evaluating the utilization level of adolescents/ youth-friendly reproductive health services found only (38.5%) adolescents in South Africa and (21.5%) in Ethiopia were knowledgeable about the type of YFSRH services offered [1][18]. Youths with a good knowledge of the type of adolescents and youth-friendly reproductive health services were more likely to utilize the service than their counterparts [20][5][21]. High-quality studies assessing knowledge as a barrier in Nigeria and Ethiopia found that more than two thirds (79.5%) in Lagos, (98.1%) in Port Harcourt, (68.7%) in Ethiopia and (67.3%) in primary health care facilities (Ethiopia) of youths did not know of a specific A/YFRHS provided in their health care facilities [18][22][23][24][25].

Although there are YFRHS, most adolescents/youths were not aware of these services. According to a medium quality health facility, a cross-sectional study done in Kenya on young people's perception, knowledge of younger girls (12–14 years) was limited with a majority reporting that they did not know much about condoms, however, boys the same age were more knowledgeable and reported that young people used condoms for prevention of HIV, pregnancy and other STI [26]. According to the multivariable analysis on utilisation factors limiting the youths from accessing YFSRHS, in Ethiopia, those with good knowledge of the type of adolescents and youth-friendly reproductive health services were 1.68 times more likely to utilize AYFRH service [AOR=1.68 (95% C.I:1.06-2.65)] [20].

Individual perception, fear, shame and stigma affected the utilisation of YFRHS among youth which had a negative impact among those who believed that youth-friendly services can improve youth's health (references). These were less likely to utilize the service than their counterparts in a study carried out in Kenya (ref). However, in a study from Tanzania, the youth reported that adolescents do not seek formal treatment for reproductive health problems as a result of shame and fear of disclosure because of the way they will be looked at by the community [16][20].

A study done in Ethiopia found that participants had the fewest misconceptions about SRH and the most outstanding being misconceptions about oral contraceptive pills causing illness and sterility [27]. Similarly a study done in Malawi, one of the participants said *"For us youth, there are [contraceptives] which we can take, and there are others which we cannot take as they can bring problems on our lives. The youth mainly use condoms, that one cannot bring problems unlike methods like IUD. People even fall sick because of such methods." (Female, in-school, 15–17 yrs., Machinga)* [28].

Structural barriers

Eighteen studies in the review indicated structural barriers affecting the delivery of YFSRHS. High-quality studies from South Africa and Ethiopia addressed primarily provider attitudes and the clinical environment as barriers to adolescents' access to healthcare during a focus group discussion, however, perceptions of provider attitudes towards adolescents appeared to be inconsistent [23][29]. During an SSI, a nurse stated, '*There are mean nurses but there are good nurses [too]… It's unfortunate that the South African public, it's like every time when they go to the clinic they meet the mean nurses only. They never get to meet the good nurses.' (Female clinical nurse, SSI 4)* [29]. The negative attitude of health workers as per the case in one of the studies indicated that 30% in (Ethiopia) [14]. From focus group discussions (FGDs) in a study done in Uganda, (18/20) participants indicated that experiencing health care provider's negative attitudes towards providing SRH services affects the utilization aspects among adolescents [30]. Health worker attitudes can also significantly hinder adolescents' utilization of Reproductive Health Service (RHS). Services need to be provided in a youth-friendly environment with health workers that are welcoming and supportive towards adolescents seeking care [31].

At the same time, the number of skilled health workers to offer these services is limited which was identified in a study carried out in South Africa, Ethiopia, and Uganda [32][17][33]. The studies indicated the most common barriers to providing health services to young people, and YFS specifically was related to shortages of staff with training on the provision of youth-friendly health services and the lack of a dedicated space for young people at the facilities [34][21][23]. Data collected in Tanzania indicated that 37.2% of the service providers who were interviewed reported that they had received training in adolescent sexual and reproductive health (ASRH) information and counselling which is significantly very low and had disparities [16]. Counsellors in a study done in South Africa stated that they had received limited or no training in counselling adolescents. While all counsellors had general HIV/AIDS counselling skills, only a few had received formal training in adolescent development [29].

Many operational barriers in health facilities also impact access and utilisation of these services, such as inconvenient operating times, lack of transportation, and high cost of services [5][22][27]. A study in Uganda indicated that the overall quality of SRH services at the facilities was reportedly of poor quality to most of them as reported in fifteen of twenty FGDs [30].

Cultural barriers

Four studies were identified exploring the impact of religious and traditional beliefs on access to YFSRH services [27][24][22][35]. Social-cultural factors were greatly associated with some services mainly family planning, voluntary counselling and testing, and counselling services. It was established that some cultures and parents in a community cross-sectional study done in Kenya and Ethiopia prohibited the youth from utilising YFRHS as this was brought out when a descriptive, chi-square and odds statistics all showed significant relationships [24][22]. Some participants in a study done in Malawi indicated that parents expressed negative opinions of youth using FP and parents could prevent youth from accessing FP services and also said youth below age 18 are not old enough to be sexually active. Therefore, the youth did not need FP and should focus on completing their education and not engage in sexual activities [27]. In a study from Ethiopia, one of the participants indicated the lack of separate youth clinics saying *"When you go to hospitals for services, you may meet your parents there. I remember my friend who met her mother in a clinic"*[35].

Socio-economic barriers

Three studies reported that adolescents and young people most preferred low cost or no charges at all when seeking SRH services from youth centers. A high-quality study exploring barriers and perspectives of youth seeking family planning services found that participants in one district indicated that some government providers charged fees for family planning for both male and female youth and also mentioned transport costs and long distances as another barrier to seeking FP services [27]. Similarly, another high-quality study in Uganda [30] and medium quality studies in Kenya [34] and Nigeria [21] also showed same results as in nineteen of the twenty FGDs, adolescents noted that where the services were not free, the cost was not affordable to them. Two studies in Ethiopia, most respondents mentioned the challenge of cost of services (21%) and (41.2%) respectively, lacked money as this is more evidenced in terms the amount needed to travel to health facilities as the distance/time taken is costly [24][25].

Facilitators to the utilisation of youth-friendly sexual and reproductive health services

Community outreach and involvement

Five studies reported on community outreach and involvement in terms of outreach activities in the community, schools and churches among the youth/adolescents. However, some indicated lack of information regarding different areas of YFSRH which was documented in the above studies. A medium quality study done in Ethiopia indicated that (45.9%) had information about the availability of services in the nearby facility and the most important sources of information were peers (54.6%), parents (27.1%), and mass media (7.6%)[20]. The use of local radio stations, posters, magazines, sporting activities and entertainment were mentioned by the majority of the respondents in the study as a great way to promote YFSRH [36]. In studies done in Uganda, participants in the out-of-the school male adolescent FGDs preferred services like outreach form in the communities, at no cost and preferably with health workers not from the same area [35] and in Malawi a study on youth perspective on how to increase awareness is; *"outreaches is what will help them [young people] because most of them do not know about what [service] is at the youth centre the youth do not know what kind of youth-friendly [services] are available" (FGD Boys, Meru)* [30].

In a study done in Ethiopia, mass media messages (70.9%), advice from others (31.1%), illness of close relative (8.6%) and death of close relative 23(9.4%) were the most important factors that influenced the study participants to utilize the services [20]. Similarly, results from a study in Nigeria indicated that community mobilization for awareness creation and support on SRH issues (59.3%), supported youth to better access SRH services in PHC facilities [18].

School health education

Four studies reported adolescents and young people most preferred in-school health education (ref), however, some preferred out-school health education as sources of seeking YFSRH services (ref). School health education promoted youth awareness and involvement in access and utilisation of YFRHS as it was indicated in a high-quality study [37]. Participants described health education and specific space for the teenagers as key components of a teenage friendly service with a significant number (81.7%) of the respondents in Nigeria agreed that in-school clubs can create demand for SRH services and 64.7% of them also agreed that out-of-school clubs are important for SRH services [38][33]. In a low-quality study in Ethiopia, the majority of the respondents (72.7%) who were involved in the available school clubs and (54.3%) had discussed on YFSRH issues with friends put them at high levels of utilisation [5].

Youths who participated in peer to peer discussions were more likely to know about and utilize sexual and reproductive health services than those who did not participate. Peer influence remains a strong factor as shown

in this study where peers or friends were found to be the major source of information. Peers were mentioned as resources to support other youth if they shared news and information about FP, but they were also reported to sometimes mock and tease others who they knew wanted to use FP [27]. Friends/peers (45.7%) were the best sources of information on A/YFRHS, however, the most popular services known were family planning (81.6%), voluntary counselling and testing (73.8%), and sexually transmitted diseases (67.3%) [22]. The consensus opinion was that young people who came to the Youth Centre to play games or be involved in other activities eventually would end up using the centre's SRH services if needed [26]. Both girls and boys noted that games such as the pool only attracted boys and made girls shy away from coming to a youth centre. Also, youth playing games at the same place where health services are provided can be a promoting factor as it brings people together to discuss the problems they face and improve them [35][23].

Recommendations/options to improve YFSRHS

Improvement of available YFSRHS to favour youth's needs and preferences

Two studies indicated how youth's needs and preferences are to be considered in order to improve YFSRH services. In a high-quality study [29], participants expressed the need for improvement in adolescent` friendly sexual and reproductive health services. Recommendations on the implementation of healthcare service provision characterized by a prompt, entertaining and welcoming environment that would encourage adolescents to talk freely and in another high-quality study [33], health workers viewed a teenager-friendly service as one that could provide privacy and sufficient time and patience when dealing with teenagers. They also described that a friendly service would be offered by health workers with specific training in teenage pregnancy and with knowledge of how to allocate specific time to teenagers [23]. A study in Nigeria [29] indicated that a large percentage (80.0%) of the respondents believed youth counsellors are best at serving other youth in the community because they can relate to their health needs better. Similarly, a hospital-based cross-sectional study in South Africa during FGD, one of the respondents said; '*Include teenagers in the programmes. I think that would make a major, major difference.' (P5 female counsellor)* during the design and implementation of the programmes being delivered [18].

In two high-quality studies done both in Uganda [27] and Malawi [30], the most common suggestion among youth participants and parents was the need for more information on FP through counselling which would ensure youth understand the importance on FP and how methods work. A medium quality study in South Africa encouraged training and on-going support to be provided to facilitate this; the importance of such training is to

encourage more than one member of staff per facility to be equipped to allow for staff turnover [1]. In Kenya, the majority of the respondents wished to see an increase in SRH services especially in rural areas including the use of mobile clinics. The consensus was that providing a wide range of SRH services in either integrated health facilities or youth centres was more likely to ensure anonymity and that privacy could be maintained [26]. Meeting these standards could make a major contribution to securing adolescents' health, especially in preventing unintended pregnancies and HIV [19].

Standardisation of services and clinics

Two high-quality studies assessed another key factor in development and implementation of quality standards found in Tanzania [17] during the scale-up of YFSRHS and utilisation of YFRHS in Nigeria [25] recommend that a useful means of ensuring that efforts to make health services adolescent friendly are grounded in wider public health initiatives at the national, regional and council levels.

Table 2; characteristics of included studies exploring barriers to access and facilitators of the utilisation of youth-friendly sexual and reproductive health services among the youth

Authors name and year	country	Study settings	study design	Aim and objective	approach	age and sex	findings
Mulaudzi et al 2018 (50)	South Africa	hospital	cross sectional	To explore barriers to providing adolescent-friendly sexual and reproductive health services.	focus group discussion and semi structured interviews	both female and male	**Barriers**; health c attitude, Counsell inadequate training adolescent psychos including adolescents as counsellors
Godia et al 2014 (47)	Kenya	health care facilities and youth centers	cross sectional	Understanding of the SRH problems young people face and document perceptions of available SRH services as reported by young people themselves. explored experiences and perceptions of young people	focus group discussion and in-depth interviews	15-24 boys and girls	**Barriers;** in their r broad and reflect the and economic en which they live. **Facilitators**; Recreat attract the boys awareness through ou
Helamo et al 2017 (42)	Ethiopia	institutions	cross sectional	Assesses factors affecting adolescents and youths friendly reproductive health service utilization	quantitative	15-24 years female and male	**Barriers;** Youths knowledge of th adolescents and y reproductive health more likely to utili

				among high school students in Hadiya zone, Ethiopia.			than their counterpa levels were low an unaware of the s provided
Ajike et al 2016 (44)	Nigeria	rural and urban	cross sectional	the knowledge of youths on available adolescent/youth friendly services (A/YFRHS) in Ikeja, Lagos State, Nigeria	quantitative	15-24 years boys and girls	**Barriers**; The part what adolescent/yo services were but where to get these because they were n available A/YFRHS
Self et al 2018 (48)	Malawi	community	Qualitative	To explore the perspectives of youth and adults about the drivers and barriers to youth accessing family planning and their ideas to improve services.	Focus group discussion	15-24 years female and male	**Barriers**; to youth ac planning included misconceptions, the planning services, attitudes. Parents ha on family planning,
Atuyambe et al 2015 (51)	Uganda	urban and peri urban	qualitative	to assess the sexual reproductive health needs of the adolescents and explored their attitudes towards current services available	focus group discussions	10-24 years male and female	**Recommendations** adolescent friendly standard characteristics information, frie providers, a range o services such as post
Chandra-Mouli et al 2013 (39)	Tanzania	urban and rural	Survey	to extend the reach of Adolescent Friendly Health Services (AFHS) in the country	qualitative	15-24 years female and male	**Barriers;** poor know received reports that the AFHS being pro organizations was po **Recommendations;** definition of AFS, ,
Zewdie B. et al. 2018 (49)	Ethiopia	in schools	cross sectional	young people's perceptions and barriers towards the use of sexual and reproductive health services in Southwest Ethiopia	focus group discussion	15-24 years female and male	**Barriers**; poor per SRH, feeling of sh being seen by oth cultural norms, lack available services
Rukundo et al 2015 (52)	Uganda	community	cross sectional	Views concerning factors affecting availability, accessibility and utilization of teenager friendly antenatal services in Mbarara Municipality,	key informant interviews	15-19 years female and male	**Barriers**; health wor their experience wit challenging due to skills when it comes adolescent-specific n

				southwestern Uganda.			
Eremutha et al 2019 (40)	Nigeria	rural and urban areas	stratified and purposive	to generate increased understanding of the barriers that limit youth access to sexual and reproductive health services(SRH) offered by Primary Health Care (PHC) facilities in Nigeria.	mixed method	10-24 female and male	**Facilitators**; mobilization for awa and support on SR support youth to bett **Barriers**; lack o negative attitude of h cost of service perception or fear
Betebebu Mulugeta et al. 2019 (53)	Ethiopia	facility based	cross sectional	to assess youth-friendly service quality and associated factors at public health facilities in Arba Minch town, Southern Ethiopia	quantitative	15-19 female and male	**Facilitators;** comfor sex, waiting time, pla factors which are associated with clien a health facility
Ayehu et al 2016 (43)	Ethiopia	community	cross sectional	To assess young people's sexual and reproductive health service utilization and its associated factors in Awabel district, Northwest Ethiopia.	quantitative	15-24 years male and females	**Facilitators;** Young families of hi expenditure, lived participated in peer lived near to a Heal more likely to utili reproductive health youth centers
Binu et al 2018 (6)	Ethiopia	school based	cross sectional	To assess utilization of Sexual and Reproductive Health (SRH) services and its associated factors among secondary school students in Nekemte town, Ethiopia.	quantitative	10-24 years female and male	**Barriers**; Inconveni of privacy, religion parent prohibition w SRH service uptake school youths.
James et al 2018 (35)	South Africa	health facilities	cross sectional	To detail the evaluation of AYFS against defined standards to inform initiatives for strengthening these services.	qualitative	15-24 years male and female	**Barriers**; Facilitie essential componen service delivery i adolescent-specific provision was lackin sexual and reproc services

Geary et al 2014 (41)	South Africa	rural health facilities	Survey	Investigate the proportion of facilities that provided the Youth Friendly Services programme and examine healthcare workers' perceived barriers to and facilitators of the provision of youth-friendly health services.	qualitative	12-24 years female and male	**Barriers**; lack of training among staff dedicated space for health workers atti appear to uphold the healthcare independe in young people's co
Motuma et al 2016 (45)	Ethiopia	community	cross sectional	to assess the extent of youth friendly service utilization and the associated factors among the youth	mixed methods	15-24 years female and male	**Barriers**; source of i having knowledge were associated w negative percep counselling affected
Renju et al 2010 (13)	Tanzania	health facilities	Survey	A process evaluation of the 10-fold scale up of an evaluated youth-friendly services intervention in Mwanza Region, Tanzania, in order to identify key facilitating and inhibitory factors from both user and provider perspectives.	mixed methods	15-24years female and males	**Barriers**; scale up fa in the selection an trained health wor limited by vario factors and structural
Obonyo Perez Akinyi 2009 (24)	Kenya	community	cross sectional	Examined how those factors determined or affected the utilization patterns of YFRHS by the youth. mitigating and addressing challenges to scale up	mixed methods	10-24 years female and male	**Facilitators;** level type of school awareness about reproductive health services offered we associated with utiliz
Chimankpam Williams Uzoma 2017 (46)	Nigeria	health facility	cross sectional	To assess the utilization of youth friendly health services by young people in Port Harcourt and factors that affect utilisation.	mixed methods	15-24 years female and males	**Barriers**; low knowl **facilitators;** Friends/family/conte notice board were m information
Berhe et al 2016 (54)	Ethiopia	community	cross sectional	Assess utilization of youth friendly services and associated factors in Mekelle city.	mixed methods	15-29 years females and males	**Barriers**; negative a youth friendly servic **Facilitators;** awaren knowledge were

							utilisation.

Discussion

This systematic review aimed at synthesizing evidence on barriers and facilitators affecting access and utilisation of YFSRHS together with recommendations to improve and scale-up these services for youth/adolescents in sub Saharan Africa. The most common barriers in the review were structural which included the negative attitude of health workers, inconvenient hours, quality of services and unskilled health workers. The health workers attending to the youth were reported to use abusive languages while others were not sympathetic enough to provide services like FP and contraceptives. Moreover, some were not trained adequately/not at all on how to deliver the services to the youth posing a great challenge. A similar observation was found in a context analysis assessing young people's experience of SRH in sub-Saharan Africa

[37].

The review showed the second prominent barrier were at the individual level emanating from limited access to YFSRHS including limited knowledge and awareness among adolescent/youth about the services which is a key hindrance. Adolescents have limited and, in some cases, no access to SRH education and contraception, making adolescent girls more prone to early and unintended pregnancies [38]. To summarize, the youth's lack of knowledge on YFSRH issues; access to reproductive health information is often hindered because of many different factors including stigma related to young age, parental consent, access to YFSRH services and commodities is challenging because of distance, costs, and quality of services. The studies in this review show similar findings with a systematic review done on SRH knowledge, experiences and access to services among refugee, migrant and displaced girls and young women in Africa which indicated the limited SRH knowledge and awareness among adolescent girls which cause the adolescents to refrain from using them [39].

Few studies reported on socio-economic and cultural barriers due to the fact that some services were not free and the youth lacked money. Others findings from this study indicate that health workers or fellow peers and parental consent on FP services is not given even when these services are offered free. Some services are not free of charge such as FP and the cost of receiving them due to distance is costly, so the youth opted-out from using them. These barriers are due to the context and structure of the environment in which the youth live in. Only two studies were identified focusing on scale up of YFS which were from one country (Tanzania) and still had scale-up challenges in the selection and retention of trained health workers and was limited by various contextual factors and structural constraints which still pose a barrier to utilisation of YFSRH [16]. In addition to research on delivering and scaling up YFSRHS to different youths, we should also consider implementation

research in different sub-Saharan countries like YFSRHS being grounded in wider public/global health initiatives at the national and regional levels in order to play a larger role in implementation and delivery than in static settings where nongovernmental organizations deliver most of the services.

The review indicated that facilitators to the utilisation of YFSRHS included community outreaches and involvement, school health education, peer-led education and mass media campaigns, and sporting activities and entertainment activities at youth centres which were sources of information preferred by the youth and improved YFHRS access and all were structural in nature. The World Health Organization (WHO) review on universal access showed that actions to make SRHS user friendly and welcoming had led to an increase in the use of services by adolescents [21]. The review suggests that youth are more likely to seek sexual health information from community outreaches and health education in schools and among peers. The health workers' attitude and limited skills should be assessed critically and prioritized as adolescents/youth are willing to access these services through them.

YFSRHS whether offered in dedicated youth centers or public health facilities attract both male and female clients around the world. Similar findings to a study done in Sweden, which has youth centers throughout the country, liberal attitudes and few legal barriers to service provision, however, the majority of patient visits to youth centers were made by females [40].

This review identified the need to improve access to and standardise the quality of health services for adolescents/youth needs along with integrating efforts such as educate, empower and support adolescents. A user friendly SRHS does not necessarily ensure service utilization by adolescents/youth. Similarly, a review done on assessing YFSRHS indicated the need for standardisation and prioritisation of indicators for the evaluation of YFSRHS which include accessibility, staff characteristics and competency, and confidentiality and privacy favoring youth's needs [2]. During the scale-up of YFSRHS in Tanzania, there were gaps in the standardisation of services according to Global standards for quality of health-care services for adolescents which is still a major challenge.

Standardized systems within a country on the use of data recorded at the health facility level and combined supportive supervision with regular self-assessments to improve the quality of services is a facilitator to utilisation of YFSRHS which has not been found in any articles reviewed hence a gap. The Global Accelerated Action for the Health of Adolescents (AA-HA!): guidance to support country implementation recommends that standards driven quality improvement should be positioned within national adolescent health programmes

within a specific country [2]. Despite the existence of laws and policies, effective implementation can only be managed through political commitment, adequate resource allocation, capacity building and the creation of systems of accountability to cater for effective access and utilisation of YFSRHS [3]. Evidence shows that focusing on strengthening health systems to meet the adolescents' needs has a positive effect on access and uptake of some YFSRHS [41]. Further, evidence shows that many health system interventions and reforms have led to an increase in coverage of several health services [11]. These gaps point to the need for robust and timely research on the mechanisms through which YFSRH facilitators can increase utilisation and access across a variety of sub-Saharan Africa.

Further studies should be done on how cultural factors such as religion and beliefs affect access and utilisation of YFSRH services. Evidence on attribution is particularly weak, with majority of studies using a cross-sectional design, with no control group. Qualitative studies have the potential to contribute rich perspectives from study populations on YFSRH service utilisation and barriers to access, but we found only three studies using this design, and six studies using mixed methods to assess YFSRH. Overall, only 65% of the studies (n=13) selected were graded as high quality, 30% as medium quality (n=6), and 5% as low quality (n=1). There was limited number of use of stratification, by gender and age as some studies indicated the differences, and so we were not able to capture potentially differing health access and utilisation outcomes among adolescents/youth.

In terms of limitations, the narrow inclusion criteria may have led to the exclusion of some peer-reviewed literature and conference articles. Additionally, our language inclusion criteria, i.e. only studies published in English, imposed by the capacity of the research team may have limited the numbers of hits returned by our search and led to publication bias. Nevertheless, this review provides important information on barriers and facilitators of access and utilisation of YFSRHS implementation and proposes key recommendations which should inform design and implementation of effective YFSRHS programmes.

Conclusion

The review has shown that most common barriers impeding YFSRH services were due to structural barriers such as the negative attitude of health workers and unskilled health workers, and individual barriers emanating from low levels of knowledge among the youth/adolescents. Regarding facilitators of utilisation, results showed that with sustained community involvement and outreach, school health education, recreational activities, and the provision of free or reduced-cost YFSRH to those with a financial constraint, there will be an increase in utilisation together giving the youth access to the health services hence promoting sustainability. The Global

guidelines on standardisation of health services encourage that adolescent service providers prioritise quality however, YFSRHS are highly fragmented, poorly coordinated and uneven in terms of quality. Pockets of excellent practice exist, but, overall, services need significant improvement and should be brought into conformity with existing guidelines. The review emphasizes the need to educate and health train the youth/adolescent to know more about the reproductive health services being provided at youth-friendly centers and their involvement in the design and implementation of interventions targeting them. Stakeholder interventions focusing on implementing YFSRHS should aim at intensive training of health workers and put in place quality implementation standard guidelines in clinics to offer services according to youth's needs and preferences.

Declarations

Ethical approval and consent to participate

The author sought an Ethics waiver from the local Institutional Review Board (College Of Medicine Review Ethics Committee), University of Malawi which approved the study to proceed.

Availability of data and materials

The data that support the findings of this study are from different datasets (e.g. PubMed, Google, Google Scholar, and Medline) and from Malawi Institution's Library (Journal Section), and are included in the list of references.

Competing interests

We declare that we have no conflicts of interest.

Funding

No financial support was received for this study.

Authors' contributions

LRN, conceived the study, spearheaded the review including conducting database searches, screening review articles and critical appraising of articles. IKC and RN conceived the study and supported all review processes. LRN drafted the manuscript which was critically reviewed by IKC and RN. All authors read and approved the final manuscript.

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Appendix 6; showing Ethics waiver letter from COMREC

COLLEGE OF MEDICINE

Principal
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22-Nov-19

Ninsiima Lesley Rose
Malawi College of Medicine
P/Bag 360
Blantyre 3

Dear Ninsiima Lesley Rose

RE: P.11/19/2843- Factors influencing access and utilisation of youth friendly sexual and reproductive health among the youth in sub Saharan Africa; A systematic reviews

The proposal was granted exempt status as it is not Human subjects research

Yours Sincerely,

Dr. YB. Mlombe
COMREC CHAIRPERSON

NB:

If and when there are any issues raised and you are responding to them, you need to do/note the following:

1. Respond question by question on the cover letter i.e start with the query raised by COMREC then your response.
2. On the cover letter refer to the pages where you have made the changes and highlight in the protocol / show in tracked changes
3. Please cite COMREC number on the cover letter and put version number and date on the revised proposal
4. Submit an e-mail softcopy to comrec@medcol.mw using a fresh email with the following subject: **comrecsubmissions@** followed by the PI surname plus comrec number (if available) plus the title of your study and version number. Please submit all relevant documents in **one PDF file** by email e.g. if you realize that some documents have been missed, please resend the whole package including the additional items but as **one PDF file**. Please name your submission **file** by using the PI surname followed by the comrec unique number plus protocol version number plus protocol date and submission type. For example: Moon XXXX v1.0 dated 20190120; in this case the full COMREC number might be P.01/19/XXXX and the PI might be Dr Moon. When these submission instructions are followed, it helps with location of submissions and contributes to shorter turnaround times.
5. Please note that currently the COMREC review process is based on email documents only to a maximum of 5 MB each submission package (hardcopies are no longer required for review but investigators are expected to print and file/use hardcopies of all COMREC feedback and approval documents). The expedited review process is expected to take 14 days from the day of an email response/complete submission. Please