Barriers to Access and Utilization of Contraceptive and STI Preventive Services among Adolescents in Tanzania

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Tanzania

57th Master of Public Health/International Course in Health Development

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Master of Science in Public Health

by

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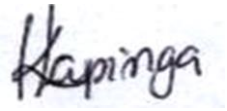
Signature: 

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ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
ARV	Antiretroviral
ASRHR	Adolescent Sexual and Reproductive Health and Rights
CHMT	Council Health Management Team
CI	Confidence Interval
DMO	District Medical Officer
FP	Family Planning
FSW	Female Sex Worker
GBV	Gender Based Violence
HIC	High Income Country
HIV	Human Immunodeficiency Virus
IPV	Intimate Partner Violence
LGA	Local Government Authority
LMIC	Low and Middle Income Country
mCPR	Modern Contraceptive Prevalence Rate
MMR	Maternal Mortality Rate
MoH	Ministry of Health
MoHCDGEC	Ministry of Health, Community Development, Gender, Elderly and Children
MSM	Men who have Sex with Men
MTCT	Mother-to-child transmission
OOP	Out of Pocket
OR	Odds Ratio
PHF	Primary Health Facility
PWID	People Who Inject Drugs
RR	Risk Ratio
SATZ	A South Africa Tanzania intervention
SMD	Standardized Mean Difference
SE	Standard Error
SRHR	Sexual and Reproductive Health and Rights
SSA	Sub Saharan Africa
STI	Sexual Transmitted Infection

UHC	Universal Health Coverage
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
WHO	World Health Organization

GLOSSARY

- Adolescence is the period of an individual between the ages of 10 to 19, which is the transition phase from childhood to adulthood. During this phase there are massive physical and psychological changes, which come with sexual maturation, often leading to intimate relationships (1).

- Adolescents are “individuals in the 10-19 year age group” (1).

- Youth are “individuals in the 15-24 year age group” (1).

- Young people are “individuals covering the age range of 10-24 years” (1).

- Sexual and Reproductive Health (SRH) is “a state of complete physical, mental and social well being, in all matters relating to the reproductive system. It implies that people are able to have a satisfying and safe sex life, the capability to reproduce, and the freedom to decide if, when and how often to do so…” (2).

- Comprehensive Sexuality Education (CSE) is “a rights-based and gender-focused approach to sexuality education, whether in school or out of school. It is taught over several years, providing age-appropriate information, consistent with the evolving capacities of young people. Comprehensive sexuality education, includes scientifically accurate information about human development, anatomy and reproductive health, as well as information about contraception, childbirth and sexually transmitted infections (STIs), including HIV...” (2)

- Puberty refers “to the physiological changes that occur in early adolescence (sometimes beginning in late childhood) which result in the development of sexual and reproductive capacity” (1)

- Adolescent Pregnancy Rate (APR) refers to “a percentage of women age 15-19, who have given birth or are pregnant with their first child” (3)

- Contraceptive prevalence rate (CPR) refers to “a percentage of women of reproductive age who use any contraceptive method” (3)

- Modern Contraceptive refers to “methods which include male and female sterilisation, injectable, intrauterine contraceptive devices (IUCDs), contraceptive pills, implants, male condoms, emergency contraception, and the lactational amenorrhea method (LAM)” (3)

- Mobile health (mHealth) intervention is referred to as “the medical and public health practice supported by mobile devices, such as mobile phones, patient monitoring devices, personal digital assistants (PDAs), and other wireless devices. mHealth involves the use and capitalization on a mobile phone’ score utility of voice and short messaging service (SMS) as well as more complex functionalities and applications including general packet radio service (GPRS), third and fourth generation mobile telecommunications (3G and 4G systems), global positioning system (GPS), and Bluetooth technology” (4).

- Community Health Workers are referred to as “any health worker who performs functions related to health-care delivery in the community. Community health workers have received training on the interventions and activities they are involved in, but have not received formal professional, para-professional, or tertiary education. They are normally members of the communities where they work, selected by the communities, answerable to the communities for their activities and should be supported by the health system” (5).

DEDICATION

To my beloved husband Lusako Raphael and my sons Lwitiko and Aliko Mwanjali.

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First and foremost, I would like to thank the almighty God for his endless love and mercy in my life. God has always been on my side.

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ABSTRACT

Background

The adolescents' sexual and reproductive health and rights (SRHR) outcomes remain very poor. Yet the utilization of SRHR services is low. Adolescents are continuing to be vulnerable to STIs and teenage pregnancies. This study aims at assessing factors, influencing access and utilization of contraceptive and STIs preventive services, among adolescents in Tanzania. So as to recommend the effective strategies that will increase utilization and improve SRHR outcomes.

Methodology

A literature review was conducted of published and grey literature from 2010 to 2021. The analytical framework of Levesque et al., was used to guide the search of relevant information. Search engines such as Google scholar, UV library and Google were used. A combination of key words and the snowballing technique was also used, to retrieve the relevant literature.

Results

Insufficient knowledge and low perceived risk related to SRHR challenges were among the barriers to access and utilization among adolescents. Others were myths and misconceptions about contraception, social stigma related to use of services and negative attitudes of providers towards ASRHR services. Also lack of adolescent friendly SRHR services in the facilities and poor knowledge about ASRHR among providers prevents utilization.

Conclusion and recommendations

There are substantial barriers from the supply and the demand side contributing to low utilisation of SRHR services by adolescents. It is time for implementers from national, district and facility level, to translate the existing policies, standards, procedures and plans into actions. The adolescents' health should be addressed as a national priority with access to SRHS as a key component.

Key words: Adolescents, barriers to SRHR services, acceptability, utilization of SRHR services, availability of SRHR services

Words Count: 12,845

Chapter 1: Background Information on Tanzania

1.1 Tanzania Profile

1.1.1 Demographic Characteristics

Tanzania is located at the east and southern part of Africa. To the east it is bordering the Indian Ocean: to the north, Kenya and Uganda: to the west Burundi, Rwanda, the Democratic Republic of Congo (DRC): and to the south Zambia, Malawi and Mozambique (3). In 2018 the population was estimated to reach 54 million people, males were 49% and females 51%. With the population growth rate of 3.1, the population is expected to reach 89 million people by 2035. From 2018 projections, about 77% of the entire population was under the age of 35, whereby 31% of this youthful population was adolescents between ages of 10-19. The population of adolescents has increased significantly, in a period of five years from 11 million in 2013 to nearly 13 million in 2018 and is expected to reach over 20 million by 2035 (6).

Figure 1: Map of Tanzania (7)

1.1.2 Socio-cultural, Political and Economic Situation

The United Republic of Tanzania, a multiparty country, is a union of two states-Tanganyika (mainland) and Zanzibar (island) (3). Economically, there are various sources of income generating activities. Agriculture is one of the crucial sources. The majority of Tanzanians engage in agriculture as means to earn a living and income. Yet the sector remains encountering major challenges such as being dependent on rainfall, limited technology, dependence on hand-hoe and limited markets. Other economic sectors are mining, manufacturing and the tourism industry (3).

1.1.3 Education

The education system in Tanzania is divided into primary education, secondary education, upper secondary education and high learning education (university and college). In 2018 about 11,236,000 pupils attended primary and secondary education. The majority about 83% were in primary education. A significant number of youth about 26% between ages of 15-24 did not complete their primary education (8). A substantial number 19% of boys and 15% of girls of primary school age were out of school (8).

1.1.4 Current health Status

Tanzania has made tremendous progress in achieving some health outcome targets, such as reduction of Malaria, HIV, and tuberculosis TB. The community's knowledge, as a result of health promotion, has increased, which has helped the government to reduce expenditures in health. The country is lagging behind in meeting other health targets: for example, neonatal mortality, maternal mortality, and teenage pregnancies remain high (9). A significant number of children under 5, about 34% are stunted; this is higher than the national target of 22% (3). Risk factors for stunting are a low level of education of mothers, low birth weight of babies, male children and unsafe sources of drinking water (10). Non-communicable diseases are increasing. Obesity prevalence is raising among children and adults (9).

With regards to immunization, Tanzania has been able to increase the survival of children through the children immunization programme. The under-five mortality rate has decreased from 81/1000 in 2010 to 67/1000 in 2015/16. The infant mortality rate has decreased from 51/1000 to 43/1000. The neonatal mortality has not decreased much from 26/1000 to 25/1000. Neonatal mortality remains the largest contributor of the infant and under 5 mortality rate (9).

Some key challenges facing the health sector are the shortage of human resources, skilled health workers, poor M&E system, and limited incentives to health workers which leads to brain drain, hence shortage of staff in the public health system (11).

1.1.5 Health System

The health system in Tanzania is governed into two levels, the central government, and the local government. The ministry and the regional administration are under the central government while the district and facility administration are under the local government. The Ministry of Health (MoH) is the custodian of the health sector. There are 25 administrative regions, the Regional Medical Officers are in charge of provision of health services at regional level and are accountable direct to the MoH (12).

There are 158 districts (urban and rural) under the Local Government Authorities (LGAs). LGAs are responsible for the delivery of public services including the delivery of health services at the community level. The District Medical Officer (DMO) is the officer in charge and is supported by the Council Health Management Team (CHMT), which is composed of the senior district health administrators.

Tanzania is following a hierarchical public health care system. The primary health facilities, which are the dispensaries, are located at the village level and health centers at the ward level. The district hospitals are located at the district level while the regional referral hospital at the region level. At the tertiary level there are zonal hospitals and the national hospital (12).

1.1.6 Health Financing

Tanzania health financing mechanism remains highly donor dependent, fragmented and has multiple risk pools. The total health spending is financed through tax revenue by 40.1%, health insurance premiums by 8.8%, Out of Pocket payment (OOP) by 26.2% and development assistance by 24.9%. The country has a long way towards reaching universal health coverage (UHC) goals (13–15). Due to limited domestic public resources allocated to health, the majority of Tanzanians do not have access to quality and affordable health services (15).

1.1.7 Contraceptives

Tanzania has made steady progress in the modern contraceptive prevalence rate (mCPR) among reproductive age women 15-49 from 16.9% to 32% from 2010 to

2015 (3). There is a wide variation in contraceptive usage across the regions, age, marital status, education, and economic status (16). According to a demographic health survey, women of reproductive age, between 35 and 39, use contraceptives more than the rest of the age groups. The use of contraceptives increases with education and wealth. Region wise, southern regions show more usage than the rest of the country and are lowest in Zanzibar (3). Unmet needs for contraception remains high, although it has been declining over the years. 22% of women of reproductive age (15-49) have an unmet need for contraception, 23% among sexually active adolescents between 15-19 years of age, which is higher than the rest of age groups (16–18).

1.1.8 Sexual Transmitted Infections (STIs) including HIV

HIV/AIDS is one among the top three causes of death in Tanzania, although much progress has been made, in terms of reducing the prevalence from 7% in 2003 to 4.7% in 2016 (19). HIV/AIDS affects the economy of the country significantly (9). The prevalence is higher in urban areas than in rural areas at 7.5% and 4.5% respectively. HIV prevalence among women is two times higher than among men. New HIV infections are significantly high (40%) among younger population. There is a high HIV prevalence in key and vulnerable population such as Men who have Sex with Men (MSM) 25%, People Who Inject Drugs (PWID) 36%, and Female Sex Workers (FSW) 26%. This is higher than the national average prevalence 4.7% (20). Heterosexual transmission accounts for about 80% of total transmission routes of HIV infection (9). Tanzania has made good progress in the increased use of ARV to women, to prevent MTCT from 73 % in 2013 to 86% in 2015. The ART coverage for all ages has been on the increase from 51.1 % (2005-2010) to 65.3% in 2010-2012 (9,20).

Chapter 2: Problem Statement, Justification and Methodology

2.1 Problem Statement and Justification

According to the United Nations, adolescents include persons aged 10-19 years (21). Approximately 1.2 billion people (16%) worldwide are adolescents. In Sub Saharan Africa, adolescents make up a big proportion of the total population: about 23% of the entire population (22). Tanzania by 2018 had a population of approximately 54 million, the adolescents' population was about 12,798,536, which is almost one fourth of the entire population (6,23,24).

Despite the existing policy actions and strategic efforts made by the government and stakeholders, to improve the adolescents' sexual and reproductive health and rights outcomes, their status remains very poor. Utilization of sexual and reproductive health and rights (SRHR) services, for example HIV prevention and treatment and modern contraceptives among others, continue to be low. The SRHR challenges such as sexual transmitted infections (STIs) and teen pregnancies, among adolescents, prevent them from attaining their full potential, and contributing to the country's socio-economic development (24,25).

While the HIV incidence in the adult population is going down, the incidence among sexually active adolescents between 15-19 years has been stalled since 2008. Adolescent females are more vulnerable to HIV, they are three times more likely to be infected, compared to adolescent males (23,26). Adolescents living with HIV in the country make up for 5% of the total global HIV burden among adolescents (26). The prevalence of other STIs is also high and is one among contributors for HIV infections among adolescents (27). A study conducted in the Mwanza region in 2015, shows that almost half (49%) of adolescent pregnant females, attending antenatal clinics, had at least one of the STIs. Rural adolescent pregnant females are disproportionately affected by STIs compared to their peers in urban areas (28). Despite the high prevalence, the health seeking behaviour on STIs remains low in this age group (27).

Tanzania is experiencing a rising trend of teen pregnancy from 23% in 2010 to 27% in 2016. The prevalence is high, up to 32% among rural adolescents, compared to19%

among urban adolescents. Unsafe sex practices among sexually active adolescents is common (23). The social norm, such as child marriage, is another contributing factor to teen pregnancy: about 75% of teen pregnancies occur in marriage or cohabitation (16). Due to limited SRHR services, this age group is at high risk of experiencing adverse consequences including maternal mortality (29). The consequences of teen pregnancy are huge, not only felt by the individual adolescent and her family but the entire community. An adolescent female, who is pregnant, will be expelled from school, and chances for her to get back to school after delivery are very minimal. Terminating her education at a tender age, increases illiteracy and limits economic opportunities for her prosperity (30). Teenage pregnancy, increases maternal mortality and morbidity, education interruption, social and self-stigma and the financial burden (16,24,31). Teenage pregnancy presents an economic loss for the country. The government's scarce resources, which could be allocated to other development activities, are utilized to address preventable health, social and economic consequences of teen pregnancy (30).

The adolescent fertility rate has increased from 116 in 2010 to 132 births per 1,000 females by 2016. The use of modern contraceptives reduces adolescents' unintended pregnancy, but the usage remains low (16,31,32). For the past decade the modern contraceptive prevalence rate (mCPR) among sexually active adults 15-49 years has increased (from 20% in 2005 to 32% in 2016) (3). The prevalence among sexually active adolescents 15-19 is relatively low 8.6% as compared to other older age groups, for example among 30-34 sexually active women it is 36% (3). The unmet need for contraceptives is also high; about 23% of adolescents between the age of 15-19 have their contraceptive needs not been met (17,18). There is a variation of modern contraceptives usage among married and unmarried adolescent females. An evaluation of the Adolescent-360 project, aimed at increasing the use of modern contraceptives among young girls, aged between 15-19, in Ethiopia, Tanzania and Nigeria was conducted. Findings revealed that fewer married adolescents 19% were using modern contraceptives compared to unmarried adolescent females 48.7% (33). This suggests that married adolescent females may not be allowed to use contraceptives by their partners and family.

Abortion is illegal in the country, but it is commonly practiced among sexually active females. Due to legal, social, economic and cultural barriers, to safe abortion services, adolescents are more vulnerable to unsafe abortion practices especially when the pregnancy is unintended (34,35). About 16% of maternal deaths are contributed to abortion complications. The incidence is about 36 illegal abortions per 1,000 women aged 15–49 (35).

Another SRHR challenge among adolescents is their significant contribution to a high maternal mortality and morbidity. In 2019, a retrospective study report was published, which established causes and trends of hospital-based maternal mortality. Causes of deaths were reviewed to reproductive age women 15-49 from 2006-2015. It was revealed that teenagers (15-19) account for 13.6% (271/1,987) of all maternal related deaths. This is high in comparison to other older age groups, for example women of 40-45 years, the rate was 3.8%. Most deaths (83.8% of maternal deaths recorded) were due to direct causes such as eclampsia, haemorrhage and sepsis, abortion and ruptured uterus (36). These are preventable and treatable conditions. Tanzania is among countries with a high maternal mortality rate (MMR)- 556 per 100,000 live births (3,36) compared to a global MMR of 216 per 100,000 lives (29). Maternal mortality among teenagers is higher in Western and Lake Victoria Regions, compared to other regions of the country (16). There is a need to improve SRHR services, such as contraceptive services, antenatal care, post natal and maternal education, especially for adolescent pregnant females (16,29,36). The SRHR services among adolescents remains challenging (29).

Fistula is another tragedy among adolescents. Although the condition affects women of all ages, adolescent females and young women are at high-risk (9,37). Consequences are social stigma and severe economic hardship among women who experienced fistula (38). Due to social, economic, cultural and structural barriers, to access health care, during pregnancy and at the point of delivery, adolescent pregnant females are more likely to experience fistula, due to a delayed access to health services (37,38). Also because their bodies are not fully developed, they are at high risk of complications during pregnancy and childbirth. Globally, pregnancy complications are among the top causes of death among adolescents (30).

Investing in adolescents SRHR has a triple effect from individual, family and community at large (31). To ensure the promising present and future, improving access and utilization of SRHR services, among adolescents, is crucial (31,39). Access, which is defined as an interaction between the two sides of the health system: the supply (health system, organization, institution) and demand (population) is central to improve the utilization of health services. It is important to address the underlying factors that act as facilitators and obstacles to access and the utilization of SRHR services from an individual perspective, social surroundings and the broader socio-economic and environmental context (40). Adolescents have different experiences, with regards to access and use of SRHR services. It is important to understand factors influencing their SRHR knowledge, attitudes and practices, in order to design effective interventions, that will address the existing gaps in enhancing the utilization of services (28).

In Tanzania, there is plenty of information about the adolescents' experience, in accessing and utilizing SRHR services, such as contraceptives, STIs including HIV counselling, testing and treatment, post abortion care and maternal health. Consolidated information is what is missing. Lack of pooled information on access and utilization of SRHR services makes it difficult to have an overview of the situation for effective integrated interventions (39). It is important to have evidence-based information, such as types of SRHR services available, adolescents' preference, utilization trends, barriers and facilitators to access and utilization of services and best practices to improve the adolescents' service utilization.

This study aims at conducting a thorough analysis of factors influencing adolescents, to access and utilize SRHR services. The focus is on the prevention services i.e. on contraceptives and STIs / HIV. Following the review, recommendations have been formulated, for effective strategies that will increase utilization of SRHR services, particularly contraceptives including condoms. Therefore, improve their SRHR outcomes in the country. This thesis focuses on the contraceptives and STIs, preventive services since they contribute significantly to improving SRHR outcomes of adolescents (41).

2.2 Objectives of the study

2.2.1 General Objective

To analyse factors influencing access and utilization of SRHR services particularly regarding contraceptives and STIs, including HIV, so as to recommend effective, evidence-based strategies that will reduce morbidity and mortality and improve SRHR of adolescents.

2.2.2 Specific Objectives

- To describe the knowledge, attitudes and skills of adolescents towards contraceptives and STIs, including HIV, the perceived risks due to pregnancy and STIs and how these affect the access and utilization patterns of SRHR services
- To analyse socio-cultural and structural factors, that influence access and utilization of contraceptive and STI, including HIV services among adolescents
- To assess effective interventions, which are evidence-based, that address the main barriers, to access and utilization of contraceptives and STIs, including HIV services.
- To provide recommendations, based on the best practices, to promote access and utilization of SRH services among adolescents.

2.3 Methodology

2.3.1 Study Method

The study used a literature review of published and grey literature to collect data relevant to the objectives of the study.

2.3.1.1Search Strategy for Literature Review

The relevant published articles and reports were retrieved from search engines and databases, such as PUBMED, Google Scholar, Google and Medline. The grey literature was also found through website search of the Guttmacher Institute, the WHO, UNICEF, UNFPA, UNESCO, the MoH and other relevant ministries.

The keywords used are: Tanzania, Sub Saharan Africa, LMICs: Adolescents, Influencing factors, access, utilization, health seeking behaviour, barriers to access, evidence-based interventions, information, approachability, acceptability, availability, ability to perceive, ability to seek, socio-cultural factors, sexual behaviour, sexual and reproductive health, services, reproductive health challenges, reproductive health needs, outcomes, SRH services, health care providers, contraceptives, STIs and HIV.

The MeSH words used in the search engine are: The keywords were connected using Boolean operators such as "OR", "AND", "AND/OR". Some of the MeSH words that were used are Adolescents AND Tanzania, " Age of sexual debut AND/OR Tanzania", "Adolescent sexual practices in Tanzania", "Adolescent reproductive health problems Tanzania", "modern contraceptive use" AND/OR adolescents AND Tanzania, Adolescent pregnancy in Tanzania, "HIV among adolescents in Tanzania", health providers AND/OR adolescent SRH AND Tanzania, "Community norms and adolescent sexual and reproductive health in Tanzania", "Gender norms and adolescent sexuality in Tanzania". A comprehensive list of the MeSH words is attached as *annex 3*.

2.3.1.2 Inclusion and exclusion criteria

The inclusion criteria considered all relevant documents, such as programs reports, published and unpublished articles and research reports, focusing on adolescents, sexual and reproductive health services, access and utilization of SRHR services. Publications from Tanzania, Sub Saharan Africa (SSA), other Low and Middle Income Countries (LMICs) and High Income Countries (HICs) were included for comparison and validation of data. Both published and grey literature in English and Swahili from 2010 to 2021 were included.

Exclusion criteria were all the literature before 2010 and literature about young people older than 24 year of age.

2.4 Data Analysis

Reviewed data, from both published and grey literature, was analysed using the analytical framework of access to healthcare designed by Levesque.

2.4.1 Analytical framework

In order to respond to objectives of this study, different studies were reviewed in the search of the analytical framework, which was adopted for this study. The reviewed studies included frameworks, such as a Patient-centred approach, Andersen' utilization model, Tanahashi model of coverage and an ecological conceptual framework (40,42–44).

Out of the reviewed frameworks, a Patient-centred approach framework was selected to guide the literature review, in line with objectives of the research study. This framework was selected, because it perfectly fits the intended objectives of the study. The framework describes the term access, as an opportunity for interaction, between the two sides of the health system-the supply and demand. While other models describe the access more on one side, for example Andersen is explaining the concept of utilization with the assumption that health services are already available and trying to understand the population's behaviours on the utilization. The patient-centred approach framework recognizes both sides of supply and demand equally. For access to happen, the supply side has to interact with the demand side. The framework has provided the five dimensions on the supply side, which the demand side needs to correspond with. Refer to the *figure 2 below* (40).

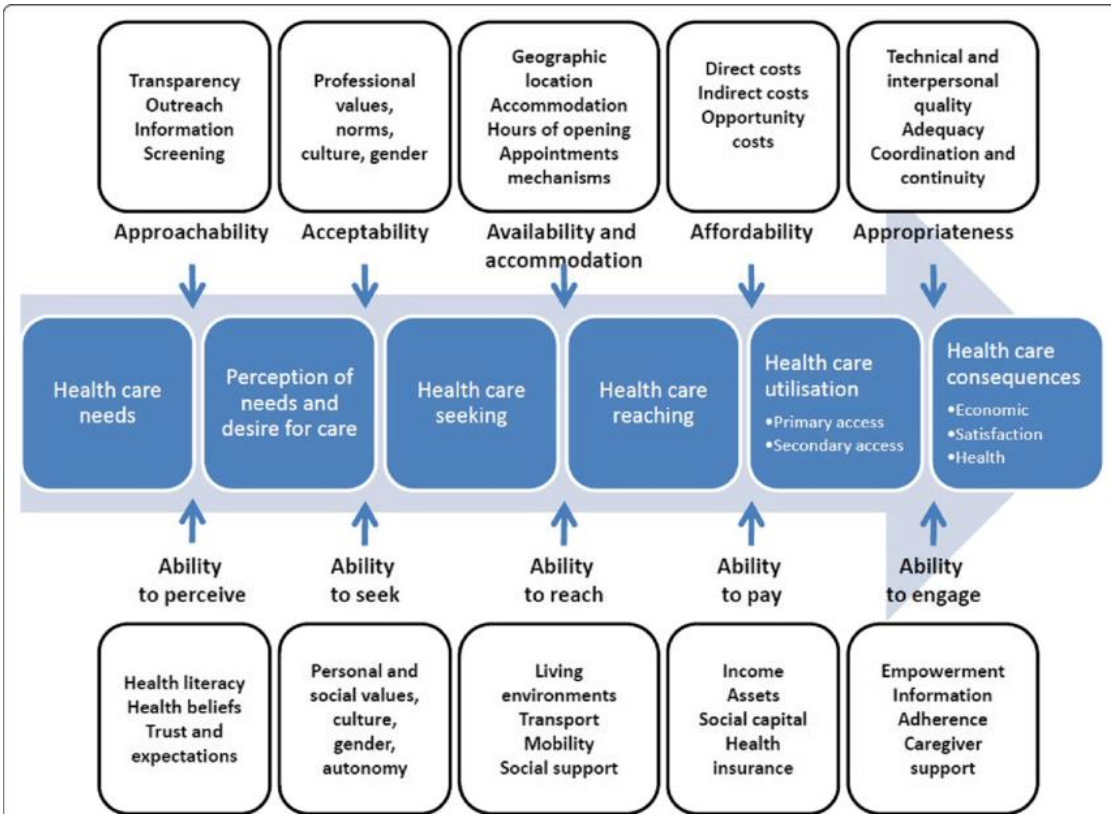

Figure 2: A analytical framework of access to health care: Patient-centred access to healthcare (40)

Access to the health service will happen, when there is interaction between the supply and demand sides of the health system. The interaction will result in identification of the health care need, perception of the needs, desire for care and seeking health care. Also will prompt actions to reaching the health care and utilizing health service. All these stages make the access process complete (40).

This thesis provides detailed information, on the factors influencing access and utilization of selected SRHR services. Five dimensions of Patient-centred access to health care framework that are relevant to the Tanzania context, were used to analyse facilitators and inhibitors, to access to SRHR services, among adolescents.

2.4.2 Analytical process

Articles, reports, policy documents and websites were reviewed, following selected dimensions from the analytical framework described above. The selected dimensions **"approachability", "acceptability" and "availability & accommodation" from the supply side. While from the demand side, "ability to perceive" and "ability**

to seek" were assessed. The selected dimensions are responding to the objectives of the study. Approachability corresponds to the ability to perceive, which addresses the knowledge about SRHR, from both supply and demand side. Acceptability corresponds to the ability to seek, which describes how the socio-cultural factors of health providers, and the population in need, affect the access and utilization of SRHR services. While availability and accommodation describes the availability of health resources and delivery of SRHR services (40). The selected dimensions are crucial and relevant in the context of Tanzania, to describe barriers and facilitators to access and utilize SRHR services among adolescents. These dimensions are also in line with national policies and strategies, that promote improved SRHR outcomes, among adolescents (9,16,20,24,32).

2.5 Limitation of study

Limitations of this study include the period selected for published and unpublished articles and reports from 2010-2021. This excludes materials before this period, which might give a benchmark for comparison. The study might also be subjected to personal bias, only to use articles that confirm the author's opinions. The researcher tried to avoid this limitation by being neutral in selection and presentation of findings from reviewed articles.

Chapter 3: Study Findings

This chapter presents findings of factors, influencing access and utilization of contraceptives and STIs, including HIV services, among adolescents. Findings have been presented, based on the 5 dimensions of Levesque's framework. These dimensions are Approachability, Ability to perceive SRHR needs, Acceptability, Ability to Seek SRHR services and Availability and Accommodation.

3.1Approachability

Approachability is a dimension of access to health services from the supply side, where health services provided by the health facilities are made known to the population in need. Transparency and provision of information, about health issues and the available services, are crucial factors for the services, to be less or more known to the population (40).

3.1.1 Transparency and Provision of SRHR information particularly Contraceptive and STIs including HIV

One of the critical challenges among adolescents in Tanzania, is limited access to adolescent-friendly SRHR information (21,24,45). Evidence shows that when adolescents receive correct information about SRHR, they are likely to make informed decisions to protect themselves (24,46,47). Health providers are vital sources of information about contraceptives, HIV and other STIs (48,49). A study conducted in 3 districts of eastern Zambia, to explore socio-cultural factors shaping young people's behaviour, revealed that, only 38% (n=1,434) of surveyed young people, received information from health providers and nearly 60% (n=1,434) received information from media sources (50). In south-western Uganda the majority of young adolescents 85% (n=1096) also receive SRHR information from the media (51). Similar findings are also observed in Tanzania. Health facilities are not the main sources of SRHR information to adolescents, despite their importance (48,52).

Tanzania is among countries with policies and strategies that promote advancement of adolescents SRHR (16,20,24,32,45). It is explicitly stated in the national health policy, National Adolescent Health and Development strategy and FP cost implementation plan, that adolescents are entitled to SRHR information, regardless of their age, marital status or external authorizations (9,16,20,53). Recently, the

government approved a change of age of consent for HIV counselling and testing from 18 to 15 years old. This was a barrier for adolescents, to access services, because of the unwillingness to disclose their health conditions to their parents (54). Yet many health providers are not aware of policies and standards, a few are skilled to provide ASRHR services (55). Health providers are also confused with conflicting messages from government officials, concerning ASRHR. Some are pro and others are against ASRHR services (56). There is a gap in translating policies into actions and ensuring clear information reaches adolescents and health providers for implementation (53,55). Health expenditures remain underfunded, only 9% of government funds covers health expenditure, which is below the Abuja commitment of at least 15% of annual budget (55). Similar findings were found in Kisumu and Kakamega Kenya, many health providers do not know about ASRHR policies therefore it affects how they deliver services (57).

A qualitative study on barriers to SRHR services, among young people, conducted in Mtwara District Tanzania, revealed that, of all 38-health facilities available none was providing adolescent friendly SRHR services. Facilities had limited health promotion materials and capacity to provide education (48). The government committed by 2020 that at least 80% of all health facilities in the country would provide adolescent friendly health services. Yet this target was far from being reached only 30% of health facilities have met adolescent friendly service standards (58). In Kisumu and Kakamega Kenya, adolescents admitted were not informed about SRHR services and available support in their communities (57). In comparison to Rwanda, a descriptive cross-sectional study, conducted in 6 cities, indicates that about 94% (n= 159) of health providers admitted their facilities provided SRHR information and services to adolescents (59). Although Rwanda remains encountering a poor SRHR outcome among adolescents, the prevalence of teenage pregnancy is relatively low at 7.3% (n=2,607,000) in 2015 compared to Tanzania 27% (n=11,944,243) by 2016 (3,6,60). Making SRHR information accessible to adolescents improves their reproductive health (45).

SRHR information and services from many health facilities are inaccessible, adolescents utilize private providers, such as traditional healers and drug stores, who are close to, known and trusted by them (61). A similar observation was seen in

Zimbabwe, young people seek information and services from traditional healers (62). In Rwanda and Kenya, the experience is different. Adolescents receive SRHR services from publicly owned rather than from private owned facilities (53). Different studies have shown that even when private providers provide the information, the accuracy and quality of information remains a big concern. Presence of knowledge gaps, about ASRHR among providers, lack of necessary resources for provision of information, is among factors that hinders adolescents to receive correct SRHR information when needed (61)(53,57,62).

Evidence-based interventions to address barriers identified

Evidence shows that community-based education interventions reach adolescents, improves their awareness of SRHR and creates SRHR demand for service (31,53). A systematic review, to determine the impact of community-based intervention for prevention of HIV, studied 39 interventions aimed at increasing awareness on HIV/AIDS risk factors and ensured treatment adherence among young people. Results show that the home visit interventions, which provided HIV/AIDS education and counselling and computer-based HIV risk reduction interventions, had a significant impact on the participants' knowledge scores (SMD: 0.66; 95% CI: 0.25, 1.07) (63). In Rwanda, community health workers (CHWs), play an important role in creating demands for contraceptives and other SRHR services. This has increased the uptake of contraceptive services significantly among adolescents (53). Also the results from a systematic review of 56 studies, on community-based interventions, show that 93% of the studies showed CHWs had a positive impact in increased use of contraceptives (64).

Different studies have confirmed that the mobile application interventions for SRH, has potential to improve SRHR outcomes of young people, through easy access of information and services especially in a scarce-resource-setting (65)(66)(67)(67). Young people consider that the mobile platforms have privacy and are accessible (65)(68). The meta-analysis aimed at assessing the impact of mobile health (mHealth) interventions on the use of contraceptives and pregnancies occurrence among adolescents, evaluated 11 papers. Results show that mHealth interventions had improved the use of contraceptives among young people (OR 1.21: 95% CI: 1.02-

1.43, I^2=20.7%: P=0.234). The impact on pregnancy occurrence was insignificant (OR 0.80: 95% CI: 0.61-1.05, I^2=0.0%, P=0.950) (69).

3.2 Ability to Perceive SRHR Needs

Ability to perceive SRHR needs describes a situation where a population, that is in need of health care, can identify health services, provided from health facilities, and knows their health needs, can be met by the services provided. For access to SRHR services to be realized, demand side factors such as health literacy, knowledge about SRHR and perceived risks related to SRHR challenges are necessary (40).

3.2.1 Knowledge about SRHR

Adolescents require accurate knowledge, about their body changes and skills to cope with the changes, as they are growing up (24,70). Knowledge about SRHR helps individuals to recognize health needs and prompts actions to access health services (40). Most adolescents lack comprehensive knowledge and skills on how to protect themselves from SRHR challenges, including STIs and unplanned pregnancies (39,59,71). In the Morogoro municipality, located at the eastern side of Tanzania, a study results showed that adolescents have limited knowledge about SRHR. One out of 5 adolescents lacks basic knowledge about HIV transmission (71).

In Tanzania generally adolescents have limited spaces where they can get comprehensive SRHR information; few health facilities provide ASRHR services (58). Schools are evident to be the effective platforms in providing SRHR education, yet there is a lack of classroom materials and equipment to support the delivery of topics (72). The teachers in Kenya, admitted to complementing sexuality conversation with students, as it is a taboo for many families to have a sexuality discussion with their children (57). In Tanzania, teachers showed positive attitudes towards teaching comprehensive sexuality education, but also expressed some challenges and difficulties in teaching some of the key sexuality topics (73).

Adolescents are a heterogeneous group with different experiences related to SRHR (71). All adolescents have challenges accessing SRHR information. Yet, marginalized ones, such as living with disabilities and infected with HIV face more challenges

(71,74). There is a knowledge gap among adolescent males compared to their counter peers. The majority thinks SRHR issues concern females alone. This is also demonstrated through low participation in SRHR programs and health facility visitations (56). Findings show that many interventions are targeting adolescent females (75,76). Apart from teachers in schools, parents and caregivers are also considered to play key roles in influencing adolescent sexual behaviour. Yet in many communities, sexuality talks remain a taboo, hence limit the flow of information from parent/caregivers to adolescents (74,77,78).

Contraception knowledge among adolescents in Tanzania is below national average (45). A baseline survey conducted in Mwanza, to determine the use of modern contraceptives, among sexually active adolescent females aged 15-19, shows that those who had better knowledge of contraceptives were also utilizing contraception and vice versa was true (33). A cross-sectional study, conducted in southwest Uganda, to assess sexual behaviour and knowledge, among young adolescents, revealed that adolescents have inadequate comprehensive knowledge about HIV and contraception. Only 8% (n=1096) were able to identify at least 4 ways of transmitting HIV and 56% were able to mention at least one contraceptive method (51).

3.2.2 Perceived Risks Related to Pregnancy, HIV and Other STIs

Lack of awareness about risks associated with SRHR challenges increases the adolescents' vulnerability to STIs, teenage pregnancy and unsafe abortion (45,48,59). Findings from a study conducted in the Mtwara region, confirm that for most young females and males, between ages of 10 to 18, the perceived risks related to pregnancy and STIs was low. Some girls started sexual intercourse at a young age between 9 and 12 years old (48). Similar findings were observed in the eastern province of Zambia where adolescents had limited knowledge on SRHR, such as pregnancy risks, prevention and utilization rate of contraceptives was also low. Also among respondents (15-24) n=1445 31% and 10% of the female and male respondents respectively already had a child with the earliest case of pregnancy at the age of 12 (50).

In southwest Uganda, findings also show that the perceived risk, related to pregnancy and HIV, among sexually active adolescents, was low. 7.6% (n=1096) had ever had sexual intercourse while about 90% of those who had sexual intercourse did not use protection (51). In Mupandawana, Gutu Zimbabwe results show that youth had a high risk perception related to pregnancy and HIV. Yet, sexual risk behaviour was high. Reasons mentioned, were high persistence of myths and misconceptions related to contraceptives (62).

In Mwanza Tanzania study findings show high STIs among pregnant adolescent females, about 49.4% (n=403) of respondents had at least one STI (HIV 4.7%, gonorrhoea 6.7%, chlamydia 11.6%, syphilis 5.2% and trichomoniasis 13.4%). About 66% of respondents admitted knowing condoms could prevent STIs and about 42% acknowledged to be at risk of being infected, but only 6% of respondents admitted to having used condoms regularly (79). Another study conducted in Ifikara Tanzania, concluded that the majority of respondents (youth 15-24) 83.6% n=2251 had heard about STIs. Yet the knowledge about STI signs was low among the majority 67.4% (27). Among adolescents, who have knowledge about STIs, use of condoms is common where they are accessible. Yet the correct and consistent use of condoms, among adolescents, remains a major challenge (33,41).

Evidence-based interventions to address barriers identified

Studies show the school curriculum alone is not enough to change sexual behaviour of younger adolescents. Integration of extra curricular activities is vital (76). Capacitating teachers in delivery of SRHR knowledge to adolescents, has a positive impact in increasing knowledge and building SRHR skills among adolescents (75). A South Africa Tanzania (SATZ) program was a teacher-centered intervention, aimed at promoting sexual and reproductive health, among adolescents aged 12-14. A four-year program was conducted in selected cities in (Cape Town and Mankweng) South Africa and (Dar-es Salaam) Tanzania. The intervention employed highly interactive facilitation methods, including group discussions and role-plays. Students were also given home assignments, which they were required to do with help from their parents and caregivers. A cluster randomized controlled trial (RCT) was conducted in both countries to determine the effect on young adolescent sexual risk behavior of teacher-led HIV prevention programs. Results show that the intervention was more effective

in Dar es Salaam Tanzania than in Cape Town and Mankweng South Africa. Delaying sexual debut was observed in intervention sites in Dar es Salaam, while in South Africa there was no impact. Reasons for success in Tanzania were that the program was implemented by science teachers and the sessions were highly interactive using drama (80).

Another study confirms that peer-led education interventions are effective in increasing knowledge but not so much in changing behaviours. An assessment of a peer-led program, with eight interactive sessions, show that at 17 months, the intervention group was unlikely to report oral contraceptive use, during last sex (OR 0.57, 95% CI 0.36 to 0.91). The peer-led group had a greater mean increase in knowledge of HIV and pregnancy prevention, compared to the control group (75).

A PREPARE intervention, which was a school-based SRHR program (n=5091), was evaluated through a RCT in Kinondoni District Dar es Salaam, to evaluate its effectiveness among adolescents aged 12-14 (81). The intervention aimed at empowering adolescents with skills that could delay sexual initiations, reduce sexual risky behaviours and increase the use of condoms consistently. Results show that adolescents in the intervention site had a higher level of action planning to use condoms than those in the control site. A significantly higher level of action, planning to use condoms, was reported in female adolescents than in males from the intervention site (p=0.042). While condom use behaviour was reported among male adolescents than female in the intervention site (p=0.0004), among females was (p=0.463) (81).

Another school based intervention, which addresses teenage pregnancy, HIV and other STIs showed impact on the use of contraceptives and condoms. The intervention had interactive sessions in addition to school activities. The results show that participants in the intervention group reported utilizing contraceptive methods during last sex than those from the normal school curriculum (reported adjusted ORs 1.62 ± standard error (SE) 0.22) and 1.76 ± SE 0.29). The condom use during last sex was higher in the intervention group that the control group (reported adjusted ORs 1.91 ± SE 0.27 and 1.68 ± SE 0.25). Intervention group was likely to report less frequent sex

without a condom in the past three months (reported ratios of adjusted means 0.50 ± SE 0.31 and 0.63 ± SE 0.23) (75).

3.3 Acceptability

Acceptability describes a situation where socio-cultural factors of health providers influence population's health seeking behaviour. Determinants from the supply side, such as the age, gender or norms and values of providers, can facilitate or prevent people from accepting particular health services (40).

3.3.1 Professional values, norms and culture

In many health facilities in Tanzania, SRHR services are inaccessible to adolescents (39,48,61). Health professionals are very crucial in the provision of services and influencing the adolescents' health choices (49,82,83). A study conducted in Kinondoni District Dar es Salaam, revealed that most health workers had negative attitudes towards providing SRHR services to adolescents. They thought adolescents were too young to be sexually active and therefore not appropriate to provide contraceptives including condoms (39). Stigma associated with adolescents utilizing SRHR services, especially related to contraceptives and STIs, is huge among health providers (31).

Evidence shows that adolescents are sexually active and have high unmet SRHR needs, particularly contraceptives. They want to avoid pregnancies but due to various factors they do not utilize contraceptives (39,50,70,84). Young people may have knowledge about contraception and STIs services, but due to stigma and negative attitudes from providers, associated with the use of these services, adolescents are prevented from utilizing these services even when the need exists (59,70). Studies from South Africa, Ethiopia and Nepal, show that the providers' disapproval of pre-marital sex is one of the most important barriers to adolescents to access SRHR services (83–85). Findings from Tanzania and Zambia also show that unmarried adolescents are facing more challenges, in terms of accessing SRHR services, particularly contraceptive and STIs management services at facility level (41,50,52). At facility level many adolescents are discriminated, to receive services based on their age, gender and marital status. It is common to find providers who refuse providing contraceptive services to unmarried adolescents or younger adolescents, because

providers do not approve sexual activities before marriage (41). This often occurs at dispensary level in rural areas (52).

On the contrary, studies conducted in Ethiopia and Rwanda, revealed that the majority of health workers had positive attitudes towards the provision of SRHR services to unmarried adolescents. However, in Ethiopia a significant minority about 30% (n=394) of health workers, had negative attitudes towards providing contraceptives to unmarried adolescents. Some suggested setting up penal rules and regulation to unmarried adolescents who practice premarital sexual intercourse (59,83). In Rwanda however, the quality of services provided was not satisfactory to adolescents (59).

A study conducted during a health workshop held in Canada to health care practitioners from 5 LMICs (Ethiopia, Zambia, South Sudan, Zimbabwe and Bangladesh), explored the relationship between personal values, social norms and the willingness to deliver SRHR services. Results show that the majority of participants agreed that SRHR was a fundamental right. However, their willingness to ensure these rights were observed during service delivery, was largely influenced by their personal and social values (49). The findings are similar to the study conducted in South Africa, which aimed at assessing health workers' beliefs, motivations and behaviors affecting adequate provision of SRHR services. Ten clinics were visited, 24 health workers were interviewed. Results show that the majority of participants had conflict between their personal beliefs and their professional calls. In South Africa, it is mandatory to provide condoms to every adolescent who visits the clinic. To some workers this was against their beliefs because of cultural and religious reasons (85).

Although a person's behaviour and attitudes can be influenced by religious or cultural factors, a qualitative cross-sectional study conducted in 10 LMICs (Ethiopia, Zambia, South Sudan, Zimbabwe, Bangladesh, Uganda, Kenya, Tanzania, Myanmar and Liberia) revealed that there was no statistical significant association between culture or religion and SRHR attitudes and practices among surveyed health practitioners. The study concluded that religious and cultural values of a person can be modified by access to information and accumulated experience working with SRHR (82).

3.3.2 Age and Gender of health providers

Age and gender of health workers matter a lot in making adolescent friendly SRHR services. A study conducted in Nepal, show that adolescents prefer to receive services from providers, who are of the same sex. Also, it is easier for them to share their concerns to a younger health worker than an older one (84). In Kisumu and Kakamega Kenya, few adolescents admitted not feeling comfortable getting SRHR services from opposite gender health providers (57). In the study, conducted in Kinondoni district Dares Salaam, it was revealed that most health providers were aged between 33 to 65 years old. Records also showed that few adolescents visited these facilities (39). A study conducted in Arusha and Kilimanjaro in Tanzania, which explored the health professionals' perceptions, and attitudes regarding ASRHR services, found out that older health providers were lacking youth friendly attitudes as compared to the youth health providers (56).

Evidence-based interventions to address barriers identified

Despite the recognition of influence of negative attitudes of health workers to health seeking behaviour, there is limited evidence showing successful interventions that address the barrier (86–88). A study of 18 interventions, with included capacity building of health workers, show that all interventions had an impact in improving the performance of health workers, in relation to ASRHR service delivery. Reviewed interventions involved training, refresher training, provision of job aid and reference materials, communicating policy, standards, job descriptions and provide support on supervision (86).

3.4 Ability to Seek Contraceptive and STIs Services

Ability to seek, describes a situation where the demand side (population) is able to take action in search of health services. Ability to search for the services is influenced by social and cultural factors. Determinants of the ability to seek health services are personal autonomy, capacity to choose to seek care, knowledge about health services options, and knowledge about individual rights to obtain health care (40).

3.4.1 Personal and Social Values and Culture

Myth and misconception about side effects of contraceptives is very common among communities in Tanzania, adolescents are not exceptional (89–91). This limits their willingness to use contraception. A qualitative study (n=15) conducted in Temeke

District Dar es Salaam, to determine barriers for the uptake of contraceptives among female youth, reveals that personal and community beliefs on contraceptives influence the usage of the contraceptive services. Despite participants' sufficient knowledge about contraceptives, they were not using contraceptives. The majority believed that using contraceptives cause a watery vagina, uterus cancer and infertility. Some were influenced by their intimate partners and close friends, not to use contraceptives, because they believed contraceptives had severe side effects, related to their health (92). Young people are also reluctant to use condoms because they believe condoms cause cancer, reduce sexual pleasure, have holes and are containing HIV (93,94). The findings correlate with the findings from Kenya, where a qualitative study concluded that high knowledge of contraceptives, including condoms, does not equate to high utilization. Factors such misconceptions could influence utilization (95).

Studies from Uganda and Kenya show that myths and misconceptions of contraception are among the barriers to utilization. Identified common beliefs about contraception are associated with the change of sexual desire, cause tumour in the womb, prolong bleeding, infertility, birth defects and weight gain (95–97). Because of this, adolescents consider ineffective methods such as withdrawal and traditional methods (41,96).

Evidence shows that there is wide variation of use of modern contraception by marital status. The study conducted in north-western Tanzania, to assess use of modern contraceptives among adolescents, suggested that unmarried adolescent females prefer condoms, because they believe condoms have no side effects as compared to other methods (33). Health providers are required to counsel clients on different contraceptive methods, including advantages and the side effects such as spotting or bleeding between periods, sore breasts, nausea, or headaches (18,98). Evidence also shows that adolescents are more likely to discontinue use contraceptives than adults, due to limited access to contraceptives, insufficient knowledge of effective usage and unpredictable sexual activities (33,41).

Religious belief is another barrier, where adolescents and their social networks believe that children are gifts from God. They relate the use of contraceptives as

killing innocent unborn children. Similar findings were observed in studies from Tanzania, Uganda and South Africa (85,96). In Kenya and Zimbabwe, like in many parts of SSA, religious leaders expect adolescents to abstain from sex (57,62).

Studies show that risk avoidance (focused on abstinence) and risk reduction interventions, have positive impacts on condom use among adolescents. An evaluation of sexual risk reduction and avoidance (abstinence-focused) intervention was conducted. The evaluation was comparing the adolescent group under intervention with the adolescent group receiving usual education. Results show that at 3 months, condom use at last sex was more likely to be reported in the risk reduction group than the usual-education group (reported adjusted OR 0.67, 95% CI 0.47 to 0.96). At 3 and after 15 months, the risk avoidance group also was more likely to report condom use at last sex than the usual-education group (reported adjusted ORs 0.70, 95% CI 0.52 to 0.93; and 0.61, 95% CI 0.45 to 0.85). Again, the risk reduction group had a higher score than the usual-education group for condom knowledge (75).

Socio-cultural beliefs and practices, which promote births, is another barrier to access and utilize contraceptives (96). Family pressure of having many children prevents adolescents from using contraceptives, especially those in marriage (96). Once adolescents are married off, they are expected to bear children. Contraception is often considered after having a first or second child (41). Even if a married adolescent is aware of contraception, she might prefer to have children, to prove their fertility, satisfy her partner and family's desire and sustain the marriage. Polygamous relationships increases competition of having more children between wives, often happen (96). In Uganda the persistence of socio-cultural factors, such as extending family lineage and replacement of the dead, twin myths, polygamy and marital obligation regarding births, are inhibitors of the usage of modern contraceptives (96).

Social stigma and victimization, associated with use of contraception and STIs prevention methods, such as condoms, is another barrier, which leads to poor health seeking behaviour among adolescents (41,62). Findings from Tanzania and Kenya show it is unacceptable for adolescent females to carry condoms with them, or request using condoms from her partner (33,41,95). In Temeke District Dar es Salaam, some

men associate the use of contraceptives by women with promiscuity (92). These findings are consistent with findings from Uganda, where use of contraceptives is associated with adultery (96). In Nepal, even adolescent boys admitted feeling shy carrying condoms in their pockets. They fear if their families see them it could lead to stigma (84). Unmarried adolescent females also face many challenges in accessing SRHR services at the facility level, due to social stigma associated with the use of contraceptives and negative attitudes from families and religious leaders. In many societies pre marital sex is illegitimate (59). In Zimbabwe there is an existence of unwritten norms that unmarried adolescents are not expected to be sexually active (62). Evidence shows that adolescents, who receive support from partners, parents, friends and in-laws on the use of contraceptives are likely to utilize contraceptives compared to those who do not receive support from their social networks (33,57,92).

3.4.2 Gender and Power Relations

It is common in Tanzania, as in many African countries, that most adolescent females lack negotiation skills in intimacy matters. They lack control over their bodies which prevents decisions to use contraceptives (16). A study conducted in Uganda shows that women are submissive to their husbands. The situation is even worse to young women who fear of being abused and chased away by their husbands or their in-laws, because they failed to reproduce many children (96). In Zimbabwe, gender based violence, limits young women to make decisions over their bodies and are silent on matters regarding their reproductive health (62). In Nepal girls and young women feel embarrassed, engaging in sexuality conversation with their partners and have poor negotiation skills, which lead to have unsafe sex and become vulnerable to unplanned pregnancies and STIs (84).

Evidence-based interventions to address barriers identified

Socio-cultural factors, such as social norms, gender inequalities and poverty, have been documented as one of the barriers preventing adolescents to improving their sexual and reproductive health (99). Addressing social norms will promote positive health seeking behaviour in adolescents (70). A study that reviewed 15 interventions, addressing structural drivers of adolescents SRH vulnerability in SSA grouped interventions into 5 categories. These are Economic empowerment of women, Economic empowerment plus school attendance, Gender empowerment and safe spaces, Comprehensive sexuality and behaviour change communication, and Parental socialization. Out of 15 interventions, 8 focused on addressing social norms, gender power relation, GBV and child socialization (99). These interventions are summarized in the *annex 1*. Overall results show that interventions had a positive impact on adolescents and communities such as improved knowledge on SRHR matters, improved financial literacy skills, reduced likelihood of teenage pregnancy, delayed sexual debut, improved parenting skills and communication on sexuality and reduced intimate partner violence (IPV) (99).

In another review parenting interventions have been reported to have positive association with ASRH behaviours in high income countries (HICs) (100,101). Fourteen studies were reviewed to assess association between parenting practices and child/adolescent outcome (SRH) in 13 SSA countries. Seven studies concluded that parental connection (warmth) was a protective factor against risky SRH behaviours among adolescents. Parental connection was associated with safe sexual practices such as the use of condoms. Also parent-child communication delays transition to sexual debut (102).

A systematic review, to determine the impact of community-based intervention for prevention of HIV, studied the 39 interventions. The interventions focused on educational activities, counselling sessions, home visits, mentoring, women's groups, peer leadership, and street outreach activities in community settings. The objective of the intervention was to increase awareness on HIV/AIDS risk factors and ensure treatment adherence. Most of the reviewed studies focused on adolescents and young people. Results show that the community-based interventions focused on cultural aspects and HIV prevention and computerized HIV risk reduction interventions,

resulted in a significantly increased condom use (SMD: 0.96; 95% CI: 0.03, 1.58) among the target population. Community based interventions on abstinence and safe sex, and adult identity mentoring for preventing HIV risk behaviours had a significant impact on the decrease in sexual activity (RR: 0.76; 95% CI: 0.61, 0.96). Street outreach interventions and peer-group education on abstinence and HIV risk reduction had a significant impact on the increased frequency of protected sex (RR: 1.19; 95% CI: 1.13, 1.25) (63).

3.5 Availability and accommodation

Availability and accommodation describes a situation, where health services can be reached physically and in a timely manner. It explains availability of health resources, to produce sufficient health services, needed by the population. Important determinants from the supply side are related to facility characteristics, such as building accessibility, density, concentration: individual characteristics such as duration and flexibility of working hours, presence of health professionals and qualification. Also determinants related to the mode of provision of services such as contact procedure and possibility of virtual consultation (40).

3.5.1 Accessibility and proximity

Results from a cross-section study, conducted in Kinondoni District Dar esSalaam, to determine SRHR services availability and utilization pattern among adolescents, show that 56% (n=25) of health facilities were providing ASRHR services. The majority were public facilities (39). Findings also show that most public health facilities were not located close to the communities (39,61). This made it difficult for adolescents to reach out to these. On the other hand, the private facilities, which were many in number, were close to the community. Yet they were not affordable and did not offer ASRHR services (39). Adolescents, who were involved in the study, admitted that one of the perceived barriers to access SRHR services was the distance to reach the facilities. Most facilities, which provided affordable services, were far from their homes, which required transportation to reach them. Only one third of the surveyed adolescents, who were sexually active, were able to access the services (39). In Rwanda, a study results show that the distance to reach the health facility, was not a challenge for adolescents to visit the facilities. They had to walk about 30 minutes to

reach the facility. Decentralization of health system was mentioned as one of the reasons for easy access (59). In Kisumu and Kakamega Kenya, adolescents said long distances to reach health facility were a barrier for them to access the service (57).

3.5.3 Mode of Service Provision

Availability of adolescent friendly SRHR services, facilitate adolescents to visit health facilities to acquire SRHR services (52). Making services at the facility more adolescent friendly, promotes health seeking behaviour and increases access to and utilization of contraceptive and STIs management services (41,84). The WHO has presented 8 global standards for quality of health services for adolescents, which the government of Tanzania has adapted. The purposes of global standards are to improve quality of care for adolescents in health facilities and increase the uptake of SRHR services among adolescents (*Refer to the annex 2*) (5). Yet most facilities do not adhere to it (48,52,55).

Studies from Tanzania and Zimbabwe show that, when adolescents perceive services provided at health facilities of not being friendly, they seek services from private providers, including unregistered traditional healers (41,62). An evaluation study of youth friendliness of government health facilities, conducted in Mwanza and Iringa regions, found out that adolescents face barriers to access SRHR services, due to an unfriendly environment at the facilities. Among other factors, poor reception when they reach the facility, lack of privacy and confidentiality, judgmental services are considered to be barriers to visit facilities (52).

Mixing of adult and adolescents during service delivery

Many facilities in Dar es Salaam, which provide ASRHR services, do not separate adolescents from adults when offering services. Facilities are not flexible to offer special time and space for adolescents to receive services. Providers mentioned that some adolescents are not comfortable to mix with adults, for the fear of being seen by people they know. Due to an unfriendly environment to adolescents, available services become inaccessible to adolescents (39). This observation is not different from Nepal, because of the stigma associated with use of SRHR services, adolescents mentioned they do not visit health facilities, because older people might see them

(84). In Kenya adolescents said due to the long queue and many people at the facility, they preferred not to go for the fear they would be seen by the people they know (57).

Stock out and Limited SRHR services

Health facilities in Tanzania, especially at dispensary level, provide a limited number of SRHR services to adolescents. Common services provided are contraceptives (fewer methods), pregnancy tests and STIs testing and treatment. STI treatment in many facilities is charged (39). On the other hand, adolescents are underutilizing available services. Only 16% of sexually active adolescents in Kinondoni district Dar esSalaam utilized contraceptive services (39). This trend is not different from other SSA countries; studies show that between 10 to 16% of adolescents use contraceptives in SSA (39). In Kenya, adolescents admitted that they were unwilling to visit health facilities, because of stock out of SRHR commodities such as contraceptives (57). In Temeke Dar es salaam, adolescents also mentioned the stock out challenge. Often they are not getting their preferred contraceptive methods when they visit clinics. Therefore, they decide not to visit the facilities anymore (89).

In rural Tanzania, health facilities fail to provide quality health services due to a number of factors, including stock out of methods and commodities. Bureaucratic procurement procedures, poor logistics, lack of commodity security and shortage of equipment and supplies, are among determinants of stock out. To address this challenge, the facility sometimes refer clients to other facilities to receive services and sometimes introduce user fees so that the facility can have funds to purchase commodities locally. This discourages clients to visit the facilities (91).

Privacy and confidentiality

Adolescents in Tanzania perceive health facilities lacking privacy and confidentiality (61). In Kenya adolescents admitted that there is no confidentiality and privacy in health facilities during service delivery. Adolescents explained that doctors call their names out loud and shout out what they are suffering publicly. Also they said they could hear conversations from the consultation room (57). It was also revealed that for in-school adolescents it was more challenging, as they had to ask for permission from their teacher to visit clinics during school time. Disclosing their conditions to teachers was difficult (57). Lack of privacy and confidentiality happens in many

LMICs, as it was mentioned in a systematic review of 30 studies, where 8 showed adolescents perceived health facilities lacking privacy and confidentiality. This limits them to visit the facilities for health services (103).

Opening and closing hours of health facilities

In the study conducted in Kenya, inflexible timing of SRH services at the facility was mentioned as one of the barriers hindering access to services among in-school adolescents. Long distance from school to the health facility, plus the inflexible operating hours in facility, prevented adolescents from accessing the SRHR services (57). Other findings show that Adolescents prefer services from drug stores and pharmacies than from health facilities, because of convenience, such as long operating hours and availability of various options that suit them (53).

3.5.4 Presence of Professional and Qualifications

One of the perceived barriers, among health providers to provide ASRHR services, is lack of skills on how to provide reproductive services to adolescents. Communication skills on how to interact and engage with them in a friendly manner is lacking among many providers. Skills that they have are adult-centred and not specific to adolescents, who have unique needs on sexual and reproductive health. Due to lack of ASRHR skills, many providers provide services that are discriminatory, judgemental and not confidential (39,52,82). In rural Tanzania the mismatch of providers skills and client needs is often spotted. Shortage of skilled staff in facilities, may cause the mismatch, especially when the only trained staff is off to leave or not available in the facility (91).

A qualitative study conducted in Kisumu and Kakamega Kenya shows that lack of untrained providers at the facility, is a barrier for adolescents to access the SRHR services. The adolescents who were involved in the study said sometimes they do not get the services they require due to unavailability of professionals, who could deliver the services (57). In Temeke Dar es Salaam also adolescents mentioned the same concern that when they visit a health facility and ask for certain contraceptive methods they are referred to another hospital, as in that facility there are no qualified staff for that service. This discourages them to visit that facility again (89).

There is an association between knowledge, attitudes and practices of health workers, towards providing quality SRHR services. SRHR knowledge of health workers has strong association with their attitudes and practices (39,82,83). There are studies, which show that some health facilities do not provide comprehensive contraceptive services, and limit them to condoms. Providers fear that other methods such as long acting hormonal contraceptives are not suitable to adolescents. Their fertility will be distorted (41). Other studies indicate that health providers believe that contraceptives are meant for child spacing therefore, not needed by unmarried adolescent females. In some facilities adolescents are often asked if they are married when they ask for contraceptive services. This discriminatory and judgemental provision of SRHR services to adolescents, discourages them from further seeking health services (52). While evidence shows that, provision of quality and comprehensive SRHR services to adolescents, is an effective way of improving adolescent reproductive health (59).

Evidence-based interventions to address barriers identified

Studies show that there is insufficient strong evidence to show effectiveness of interventions, which provide adolescent friendliness training for health workers. However, strong evidence is shown in interventions that integrate health worker training, adolescent-friendly facility improvements, demand creation and engaging the community (88). Other studies show the system level interventions to address systemic blockages, are very crucial in ensuring health providers are well equipped to provide quality ASRHR services. Interventions, that will aim at improving skills of health providers, procurement processes and facility structures such as reception, waiting and consultation rooms, are needed (52,91). Capacity building of health workers interventions will be effective, if integrated with socio behavioural interventions, which address socio-cultural factors in the communities (91).

Chapter 4: Discussion

4.1 Approachability

Findings show that health facilities are very crucial in provision of correct SRHR information to adolescents. Yet, for the majority of adolescents, health facilities are not their main sources of SRHR information. They receive information mainly from media such as TV, radio and social media as well as from their peers. This could be because media is very accessible to adolescents as compared to health facilities; there are many barriers to freely receive information. Even though the findings show that teachers have positive attitudes towards providing SRHR information, there is insufficient teaching material and equipment. Therefore, delivery of comprehensive sexuality education remains a challenge. Evidence shows that there is a lack of knowledge about ASRHR policies among health providers. This limits how they deliver SRHR information to adolescents. Adolescents also lack knowledge about their rights to access SRHR information, which limits their capability to demand their rights when need be.

Studies have shown there are insufficient resources allocated at the facility level to ensure implementation of ASRHR policies, such as inadequate health promotion material and limited capacity to provide health education. Tanzania has adopted the WHO global standards for quality health care services for adolescents, which clearly stipulates the importance of making SRHR information accessible to adolescents. Yet little commitment has so far been shown to ensure adherence of policies, procedures and standards. Both supply and demand side, lack awareness of policies, standards and procedures. The health-spending budget remains underfunded; only 9% of government funds covers health expenditure, which is below the Abuja commitment of at least 15% of annual budget to cover health spending. Given the limited attention for ASRHR in the country, it is likely ASRHR will remain underfunded.

Due to the existence of information barriers from providers, adolescents utilize other providers such as unregistered traditional healers, drug stores and private health facilities, to acquire SRHR services, including information about contraceptives and STIs. Findings show there is a wide knowledge gap about ASRHR among these providers. Therefore, information provided from these sources is not always correct.

This might increase the myths and misconceptions about contraceptives including condoms among adolescents.

Findings indicate that mobile application interventions are well accepted and accessible to adolescents to acquire SRHR information. mHealth interventions are effective in a low-resource-setting, especially with regards to the shortage of skilled health providers. mHealth interventions also address the issue of social stigma, lack of privacy and confidentiality at the facility level. Many young people prefer mHealth interventions, where they receive SRHR information in privacy. Also interventions, which involve community health workers, have been proven to work especially in provision of education and an increase of uptake of SRHR services. Community health workers are very key in conducting outreach programs and are likely to meet adolescents with SRHR education and create SRHR demands.

4.2 Ability to Perceive

Findings show that health literacy, knowledge about SRHR and perceived risks related to SRHR, are the key determinants for adolescents to be able to engage with providers, to acquire SRHR information. Adolescents lack comprehensive knowledge and skills about SRHR, particularly contraceptives, HIV and other STIs. Findings also show that all adolescents face challenges in accessing SRHR knowledge. However, the marginalized groups, such as people living with disability and those infected with HIV and unmarried adolescents, face more challenges. There is also a wide knowledge gap among adolescent males, because many interventions are targeting adolescent females. Many interventions do not consider adolescent males playing a role in getting females pregnant. This also has been shown from their low participation in SRHR programs and low health-seeking behaviours at the facility level.

Findings also show that some adolescents have high-perceived risks, related to pregnancy and STIs, but the utilization of contraceptives, including condoms, is very low. Reasons are mentioned to be the persisting myths and misconceptions about contraceptives including condoms. Adolescents perceive contraceptives to have negative effects on their health. For them the risks of contraceptives outweigh the

benefits. Some adolescents have low perceived risks and low knowledge about contraceptives, including condoms, hence remain vulnerable to SRHR challenges.

Evidence show that school-based interventions, that integrate teachers, students (peer education), parents (social norms) and health workers (youth friendly services), improve the knowledge about SRHR and increase the uptake of services, such as contraceptives and condoms, among adolescents. It is worth to note that the methodology of delivering programs, matters in ensuring understanding and participation of students. Interventions that employ highly interactive sessions and are involving extra curricular activities, such as games and drama, showed impact on an increased knowledge and change behaviours.

4.3 Acceptability

Findings show that the providers' attitudes, towards utilization of SRHR services, among adolescents, are crucial in building health-seeking behaviour among adolescents. Health facilities might provide contraceptives and STIs services, yet services might be inaccessible, if providers have negative attitudes towards adolescents using the services. In Tanzania, persistence of negative attitudes among health providers, on adolescents using contraceptives and engaging in sexual relationships, is significant. Many of the providers' actions are influenced by their personal values, norms and culture. Religious factors also play a big role in the providers' values and norms, with the expectation, that unmarried persons should abstain from engaging in sexual intercourse. The findings show that providers have no problem assisting married adolescents with SRHR services. Therefore age is not an important criterion to receive services. This leads to discriminatory and judgemental provision of SRHR services. A conflict between personal belief and professional call among providers, is prevalent in many places in LMICs. According to the WHO global standard for quality health care for adolescents number 6 (*refer annex 2*), health facilities are required to provide quality services to all adolescents irrespective of their age, sex, marital status, ethnic origin and sexual orientation.

In other SSA countries such as Rwanda and Ethiopia, findings show the majority health providers have positive attitudes towards ASRHR. This might be because an investment has been made in building the capacity of providers on SRHR issues and

personal norms, value and culture have been addressed. However, from the findings there is limited evidence showing impact of interventions, addressing the negative attitudes among providers. Literature suggested, interventions that train health providers on ASRHR, with integration of socio-cultural factors, are likely to have positive impacts. Also the methodology of the training, location and size of group of participants are determinants to success.

4.4 Ability to Seek

Myths and misconceptions about contraception and STIs preventive methods, such as condoms, is evidently one of the important barriers among adolescents, to utilize SRHR services. Adolescents and their social networks, such as intimate partners, friends and family, believe that the negative health effects of contraceptives outweigh the benefits. The common myths and misconceptions are that contraceptives change sexual desire, cause tumours in the womb, prolong bleeding, cause infertility, birth defects, condoms carry HIV and have holes. This leads to low utilization of contraception and often adolescents opt for less effective methods including traditional methods.

Religious and cultural factors also have been documented to prevent adolescents from positive health seeking behaviours. The social stigma, associated with use of SRHR services, is very common in many communities. The belief that the use of contraceptives is associated with “promiscuity and adultery” pushes adolescents away from wanting to use the services. Different studies have indicated that adolescents often fear to be seen in the health facilities by the people they know for fear of being stigmatized and victimized. Evidence shows that power and gender relation in many communities, inhibits adolescents from making decisions, to utilize SRHR services. Lack of control over their bodies is common, among all adolescent females, where their male intimate partners often have more power to decide what they should or should not do with regards to their reproductive health.

Findings show that interventions, that address the social norms, gender power relations, GBV, poverty and child socialization, have positive impacts on increasing positive health seeking behaviour, hence utilization of SRHR services. Interventions

related to parenting, economic empowerment, comprehensive sexuality and behaviour change communication and gender empowerment and safe spaces are among interventions that have been proven to work.

4.5 Availability and Accommodation

Different studies have established key factors, which prevent adolescents from visiting health facilities for the uptake of SRHR services. The long distance to reach the facility is one of the factors. In many places adolescents travel long distances to get to the facility, which discourages adolescents from visiting. From a study conducted in Rwanda, an acceptable travel time for adolescents is not more than 30 minutes walk. Availability of health facilities is also another important factor. Evidence shows that in urban areas, the concentration of health facilities is more than in rural areas. This allows adolescents from urban areas to visit the facilities easier than their peers from rural areas. The findings show that facilities might be present but the services provided are not adolescent friendly. This discourages them to visit the facilities. Many health facilities do not comply with the 8 WHO standards for quality health service delivery. Lack of an adolescent friendly environment is very common in many facilities. From the way adolescents are received in the facility, to the point of receiving services in many facilities, is not encouraging for adolescents. Evidence shows that there is a lack of privacy and confidentiality in the facilities, where adolescents are not feeling comfortable to go and to express their needs. In many facilities adolescents are mixed with adults to receive SRHR services. Due to social stigma this is discouraging for them to want to visit the facilities.

According to WHO standards for the quality health service for adolescents, which Tanzania has adopted, it requires health facilities to have a competent staff and they should provide an appropriate package of SRHR services. Findings show that many facilities have a shortage of skilled health workers. Stock-out of commodities and supplies is also prevalent in many health facilities, where adolescents are limited to receive certain services. Bureaucratic procurement procedure is one of the underlying factors for stock out. Evidence also shows that there is a limited political will, to ensure adequate resources in the area of ASRHR, both at national and district level.

Interventions that address systemic bottlenecks are very crucial. Interventions that integrate the health workers training, adolescent-friendly facility improvements, and demand creation and engaging the community had impact. Interventions that also improve procurement processes and facility structures such as reception, waiting and consultation rooms are important.

Generally, both the supply and demand side were influenced by culture and religious beliefs. In all dimensions, individual actions were greatly affected by their cultural norms and values. The Levesque's framework of access to health service, is such a comprehensive framework, which gives a researcher a wider areas and options to be studied. However, most of the components in the dimensions are interlinked, sometimes it creates confusion in making a logical flow of information.

Chapter 5: Conclusion and Recommendations

Tanzania has made tremendous progress in improving the health outcomes of the general population. However, the adolescents' sexual and reproductive health outcomes remain very poor. Despite the country having policies, strategies and standards that promote ASRHR, barriers to access and utilize reproductive health services exist. In all five dimensions that have been studied, to determine the barriers, there are inhibitors to positive health seeking behaviours among adolescents. The barriers that have been identified in this study are in relation to the adolescents' knowledge, attitudes and practices towards SRHR, socio-cultural and structural factors, and interventions, which are reaching adolescents.

The insufficient knowledge about contraceptives, HIV and other STIs and low perceived risks, related to SRHR challenges, are among the underlying causes of low utilization of SRHR services among adolescents. It is important to note that high knowledge is not necessarily associated with the use of contraceptives, including condoms, among adolescents. Myths and misconceptions about contraceptives and STIs preventive methods are prevalent among adolescents. This leads to a low utilization of services, even when adolescents have a basic knowledge about SRHR. Self-stigma associated with the use of SRHR services also plays a big role in preventing adolescents from utilizing services. Through socialization with family, friends and community members, adolescents are sceptical to be seen using SRHR services for the fear of being stigmatized and victimized, within their communities.

Health providers are very vital in influencing health-seeking behaviour among adolescents. Studies show that the majority of health providers have negative attitudes towards adolescents utilizing SRHR services. The expectation from the providers and the community is that unmarried adolescents should abstain from sexual intercourse. Often services are delivered on the basis of marital status; the age of the adolescent is not an important determinant to receive the service. It is more unlikely for unmarried adolescents to receive contraceptive services. In many communities there is social stigma related to use of SRHR services. It is associated with what is seen as 'promiscuity' and 'adultery', this makes adolescents feel ashamed using SRHR services therefore, opt not to use. Existence of cultural practices, which promote birth

especially in young women, who are married, is another socio-cultural barrier. Often married adolescents compete with the co-wives, to have many children, especially in polygamous relationships. Therefore, use of contraceptives including condoms is not an option in this case.

Lack of adolescent friendly SRHR services in the facilities, including shortage of skilled health workers, poor reception, lack of privacy and confidentiality and stock out of contraceptive commodities and supplies, are barriers limiting adolescents from access and utilize SRHR services. Also lack of awareness about SRHR policies, strategies, procedures and standards among health providers, were observed as a barrier during delivery of services. Most providers are not up-to-date with standards and procedures; they also do not know how to engage with adolescents in a friendly way.

Most interventions that exist in SSA are targeting adolescent females and marginalized ones. However, findings show that there is a wide knowledge gap about SRHR, among adolescent males. School-based and community based interventions, which focus on economic empowerment of women, economic empowerment plus school attendance, gender empowerment and safe spaces, comprehensive sexuality and behaviour change communication, teacher-centred SRHR and parental socialization, showed impact in improving SRHR outcomes of adolescents.

There are substantial barriers from both the supply and the demand side, contributing to low utilisation of SRH services, by adolescents in Tanzania. However, there are many opportunities to improve existing SRH services for adolescents. This study is recommending the following, to ensure that adolescents increase utilization of contraceptives, including condoms, hence improving their sexual and reproductive health. The targeted implementers are urged to address adolescent health as a national priority with access to SRHS as a key component.

<u>For policy makers-Ministry of Health</u>

1. Action must be taken to effectively communicate the existing policies, strategies, standards and implantation plan, that promote ASRHR to district and facility health managers and demand accountability actions to ensure

effective adherence and implementation.

2. Actions must be taken to advocate and mobilize funds for health from the national budget, to ensure the provision of adolescent friendly SRHR services, including comprehensive package of service at facility level.
3. Create a partnership with various sectors, such as education, science and technology, communication (media) and culture to develop SRHR contents for mobile application and create environment for investing in mHealth interventions.

For district health managers

4. Ensure effective coordination of ASRHR interventions, to avoid overlapping of programs to same target population and ensure inclusion of all adolescents according to the needs.
5. Advocate for partnership with the schools and community-based organizations to ensure adolescents receive a comprehensive package of SRHR through outreach programs. Consider the flexibility of facility-operating hours to accommodate in-school adolescents.
6. Create a database of community health workers, train them on ASRHR and support them to conduct outreach programs and provide referrals to adolescents.

For facility managers

7. Train and support facility staff on policies, standards and procedures about ASRHR
8. Create adolescent friendly environments for service delivery, as per national adolescent friendly SRHR standards and WHO global standards for service delivery for adolescents.
9. Develop standard operating procedures in the implementation of policies, strategies, plans and standards related to ASRHR.
10. Engage in a wider community, community media platforms, community based organizations and community health workers in provision of ASRHR education and services, addressing socio-cultural barriers and creating demands on ASRHR services to both adolescent females and males.

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Annexes

Annex1: Description of interventions for adolescents

Intervention/Country	Objective	Methodology	Target group	Results
Binti Pamoja Centre-Kenya	Create safe spaces for girls to reduce violence, FGM, sexual abuse, rape, prostitution, poverty and increase reproductive health knowledge, financial education, leadership and personal skills	Community intervention	Girls 11-18 years old	-Positive change in social networks, mobility and gender norms -Increased confidence and positive self-esteem -Increased financial literacy, savings -Improved communication with parents and guardians
Siyekha Netsha-South Africa	A life-orientation program to improve lifelong skills and well being of young people	School-based intervention. Quasi-experimental, control arm, 18 month follow-up, 4 years Three study arms:,	Boys and girls aged 14-16	-Increased autonomy of girls in controlling their lives -Increased HIV related knowledge
Vitu Newala-Tanzania	Understand specific vulnerabilities of adolescent girls and empower them, increase girls positive attitudes and beliefs on girls' Social protection	Community based intervention	Adolescent girls	Community put in place laws and changed practices to provide social protection

Intervention/Country	Objective	Methodology	Target group	Results
Girls Power Soul Buddyz and One Love campaign- South Africa	Increase: social change, social mobilization, advocacy and reduce HIV incidence	Behaviour change communication	Children 8-14 years old	-Statistically shifts in social norms especially sexual norms -Increased self-perceptions on risk, resistance to peer pressure
Stepping Stones- South Africa	Increase: sexual health knowledge, communication skills, critical reflection and reduce sexual health risk	Community based intervention	15-26 young people	-Reduced perception of women's dependence on men -Men's disclosure of perpetrating severe intimate partner violence reduced
Families Matter- Kenya	Reduce age at first sex and Increase positive parenting Practices	Community based intervention	Parents/carers of 10-12 year olds	-Increased parenting skills and communication about sexuality and risk reduction -Parents' attitudes regarding sexuality education changed positively.
The Mema Kwa Jamii (Good Things for Communities)	Reduce SRH risks in youth through improved parenting	Community based intervention	Parents of adolescents 10-18 years	Improved parent-child relationships and collective efficacy

Annex 2: WHO global standards for quality health-care services for adolescents (5)

GLOBAL STANDARDS FOR QUALITY HEALTH-CARE SERVICES FOR ADOLESCENTS

Eight global standards define the required level of quality in the delivery of services as shown in the table below. Each standard reflects an important facet of quality services, and in order to meet the needs of adolescents all standards need to be met. This section presents each of these standards and its criteria, categorized as input, process and output criteria.

Adolescents' health literacy	**Standard 1.** The health facility implements systems to ensure that adolescents are knowledgeable about their own health, and they know where and when to obtain health services.
Community support	**Standard 2.** The health facility implements systems to ensure that parents, guardians and other community members and community organizations recognize the value of providing health services to adolescents and support such provision and the utilization of services by adolescents.
Appropriate package of services	**Standard 3.** The health facility provides a package of information, counselling, diagnostic, treatment and care services that fulfils the needs of all adolescents. Services are provided in the facility and through referral linkages and outreach.[1]
Providers' competencies	**Standard 4.** Health-care providers demonstrate the technical competence required to provide effective health services to adolescents. Both health-care providers and support staff respect, protect and fulfil adolescents' rights to information, privacy, confidentiality, non-discrimination, non-judgemental attitude and respect.
Facility characteristics	**Standard 5.** The health facility has convenient operating hours, a welcoming and clean environment and maintains privacy and confidentiality. It has the equipment, medicines, supplies and technology needed to ensure effective service provision to adolescents.
Equity and non-discrimination	**Standard 6.** The health facility provides quality services to all adolescents irrespective of their ability to pay, age, sex, marital status, education level, ethnic origin, sexual orientation or other characteristics.
Data and quality improvement	**Standard 7.** The health facility collects, analyses and uses data on service utilization and quality of care, disaggregated by age and sex, to support quality improvement. Health facility staff is supported to participate in continuous quality improvement.
Adolescents' participation	**Standard 8.** Adolescents are involved in the planning, monitoring and evaluation of health services and in decisions regarding their own care, as well as in certain appropriate aspects of service provision.

[1] Service provision in the facility should be linked, as relevant, with service provision in referral level health facilities, schools and other community settings.

Annex 3: Keywords combination in literature search process

	AND		
OR	**Problem**	**Determinants**	**Location**
	Teenage pregnancy	Age	Tanzania
	AIDS	Sex	East Africa
	HIV	Adolescents	Sub-Saharan Africa
	SRHR challenges	Utilization	LMIC
	ASRHR	Health seeking behaviour	HIC
	STI	Social networks	
	Contraceptives	Barriers to access	
		Evidence-based interventions	
		Information	
		Approachability	
		Gender inequality	
		Culture	
		Socio-cultural factors	
		Peer pressure	
		Condom use	
		Multiple partners	
		Policy	
		Health services	
		Adolescent friendly services	
		Acceptability	
		Knowledge gap	
		Availability	
		Unequal power	
		mHealth interventions	
		Parent-child communication	
		Alcohol consumption	
		Transactional sex	
		Female sex workers	
		Men sex with Men	
		Criminalization	
		Community health workers	
		Community media	
		Attitudes	
		Access	