

Quality of Care of Sexual Reproductive Health Services in Antiretroviral Therapy Clinics Attended By Perinatally HIV-Infected Adolescents in Uganda

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Abstract

Introduction: Perinatally HIV-infected adolescents have the right to healthy sexual and reproductive lives like their HIV uninfected counterparts. The study assessed the quality of care of sexual and reproductive health (SRH) services in antiretroviral therapy (ART) clinics attended by perinatally-infected HIV adolescents.

Methods: The study was guided by Judith Bruce and Anrudh Jain framework for conceptualizing quality as “client-oriented” care. Qualitative and quantitative methods were used to assess quality of care. We conducted facility assessment, evaluation of providers' perspectives regarding the quality of SRH care, and evaluation of experiences of perinatally-infected HIV adolescents about the quality of SRH care provided in the ART clinics. We conducted 24 in-depth interviews with adolescents and 12 interviews with service providers. Furthermore, a survey of 624 adolescents aged 10-19 y was conducted, where information on socio-demographic profiles and access and utilisation of RH services were collected. Survey data was analysed descriptively to provide frequencies and percentages while qualitative data was analyzed by content analysis.

Results: Most adolescents (84.5%) were dissatisfied with SRH services provided by the clinics. None of the ART clinics offered comprehensive SRH services, which limited choices of clients. All units offered SRH information and education except post-abortion care and mental health. Only three units had trained their staff in SRH and adolescent friendly services which impacts on technical competence of the service providers in provision of SRH services. The structure of the clinics was based on adult and pediatric care implying there were no adolescent-specific services.

Conclusion: The lack quality of care of SRH services in ART clinics is both an organisational and resource issue. For health systems to achieve universal access to high-quality sexual and reproductive health the ART clinics is dependent on rational decisions regarding investments in and allocation of human resources for health. There is need for in-service training of Health Workers in adolescent health. The Ministry of Health needs to engage partners for support to increase the numbers of health facilities which are adolescent friendly.

Keywords: HIV; Perinatally infected adolescents; Sexual; Quality of care; SRH services

Introduction

With HIV care, treatment and support becoming more accessible, perinatally HIV-infected adolescents (PHIA) are regaining their health, living longer, and planning for their future. They are becoming sexually active which puts them at risk of HIV re-infection, contracting other STI's, and unintended pregnancies [1-4]. Health facilities that offer HIV services to these adolescent ought to think about sexual and reproductive health (SRH) services they offer to adolescents at this stage. There is need to integrate sexual and reproductive health (SRH) services into HIV care and to provide quality SRH care [5-7].

The Institute of Medicine defines healthcare quality as the extent to which health services provided to individuals and populations improve desired health outcomes and are consistent with current professional knowledge [8]. Quality of care was conceptualized (at the International Conference on Population and Development in 1994) as a means to assist couples in achieving their fertility intentions through access to improved family planning programmes [9]. The concepts of quality of care have been broadly applied to include other SRH services. The latter include information and education on fertility, contraception, pregnancy and delivery care, and post-abortion care. Investing in quality improvement can lead to cost savings and increase cost-effectiveness within the health systems [10,11].

There are several reasons why assessing the quality of SRH care offered in these ART clinics is important. Gaps exist in adolescent primary HIV care delivery including inn triage, screening, diagnosis,

and treatment which could lead to poor quality and inconsistency of care [12]. Since adolescents are at a stage of transition to adulthood, and will continue to demand services that match their needs, provision of adolescent friendly health services is the beginning step in providing services that match their needs [13]. It is also not clear to what extent available services are adolescent-friendly. As the PHIA's grow to adolescence and adulthood, they develop sexual needs and desires, yet their SRH needs remain largely unaddressed by existing HIV/AIDS programs. Moreover, SRH issues discussed during counseling of young HIV-positive clients tend to be about refraining from or postponing sexual initiation, yet many of them are already sexually active [14,15]. Likewise, supply-side barriers such as poor attitude of health providers, incompetent service providers and limited choice of services contribute to low utilization of SRH services by adolescents [16].

From sexual and reproductive health (SRH) and rights framework, for adolescents to fully exercise their right to health, including sexual and reproductive health (SRH), they require quality care. Quality refers to access to safe, effective, affordable and acceptable range of adolescent-friendly services [17]. The benefits of adolescent friendly services include; reduction of death and diseases now, burden of disease in the latter life, investing in health- today and tomorrow, to deliver on human right and to protect human capital [17].

HIV prevention, care and management in Uganda is a multi-sectorial approach. A number of sectors and organizations are involved. These include; Ministry of Health, Ministry of Finance, Planning and Economic Development, Ministry of Gender, Labour and Social Development, implementing partners, Non- government organisations, faith-based organisations, community-based organisations, research and academic institutions, private sector entities, health facilities at all levels play significant roles in HIV prevention, care and Management. A survey in 2013 reported 1,478 health facilities in operation in Uganda offering antiretroviral treatment (ART) [18]. Nearly 800,000 people living with HIV were enrolled on treatment [18]. According to the 2010 World Health Organisation (WHO) guidelines for ART, 69.4% of all ART-eligible people living with HIV that were on treatment by the end of September 2013 in Uganda [18]. After implementation of the 2013 WHO treatment guidelines ART access now stands at 40% for adults and 22% for children [19]. Additionally, 93% of pregnant women were tested for HIV and knew their result [19]. The overall, prevention of mother-to-child transmission of HIV (PMTCT) service coverage was 2,138 health facilities—48% of all health facilities in the country [19]. All the 112 districts in the country have at least one health facility providing the full scope of PMTCT services [18].

The essential SRH services and commodities include modern contraception; abortion (where legal); post-abortion care; pregnancy advice and care; prevention of mother-to-child transmission of HIV (PMTCT); safe delivery and post-partum care; voluntary medical male circumcision; diagnostic testing and treatment for STIs, confidential testing and counseling for HIV, as well as treatment and care services for young people living with HIV [20]. The World Health Organisation (WHO) recommends that adolescent friendly services should focus on providers, health facility and program characteristics that have to be in place [21]. The organisation of HIV treatment, care and support programs in Uganda are organised around pediatrics and adult care [22]. As HIV perinatally infected adolescents are treated under pediatrics or adult care, it is unclear to what extent these services are adolescent-focused. The quality (program structure, elements of SRH care and outcomes) of SRH services in ART clinics for this population

is also not documented. The objective was to assess the quality of care of SRH services in ART clinics in Uganda. This was a part of larger study that looked at sexual experiences, quality of care of SRH services and health related quality of life among PHIV adolescents.

Methods

Study design and setting

This was a cross-sectional study among PHIV adolescents aged 10-19 years receiving care and treatment in 12 antiretroviral therapy (ART) clinics in three regions (Eastern, Western and Northern) of Uganda. The data were collected from September 1, 2013 to March 30, 2015.

Participant's selection

Three regions (Northern, Eastern and Western) were purposefully selected. The central region was excluded because previous studies on PHIV adolescents were conducted in this region. In each region four health facilities were selected. The regional referral hospitals were purposefully selected from each region because they receive referrals from the lower level facilities. To select the remaining facilities, a sampling frame comprising of all health facilities in each region with 50 clients or more aged <19 years were considered [23]. Three health facilities were then randomly selected from each of the regions. In the northern region there were 82 facilities offering ART services and only 27 health services had at least 50 clients under 19. In the Eastern region there were 80 facilities offering ART services. Only 16 had at least 50 clients under the age 19. In the Northern region; there were 82 facilities offering ART services only 27 had at least 50 clients under the age of 19 years.

The inclusion criteria for participants were being adolescents aged 10-19 years and knowing their HIV sero-status. At each facility, participants who met the inclusion criteria and consented to participate in the study were selected through a consecutive sampling procedure. At each site, a research assistant recruited all the participants who were available in the ART clinic until the sample size was obtained. To verify and confirm PHIV status of the participants, medical records were checked to ascertain the HIV positive result, a positive HIV test from parents, and absence of information that HIV was acquired sexually or through injections. The age at which the adolescents started attending the ART clinic was also reviewed and recorded. The research assistants were trained on interview skills and ensuring privacy and confidentiality. Trained research assistants interviewed the participants in absence of their parents or guardians.

This study was a situation analysis that involved mixed methods among service providers and PHIA's. The mixed method included facility assessment (using a checklist and records review to assess the infrastructure, equipment, supplies and service-mix available), assessment of provider perspectives regarding the quality of SRH care provided, and evaluation of PHIA's experiences about the quality of SRH care provided in the ART clinics. We conducted 24 in-depth interviews with adolescents, and 12 in-depth interviews with service providers. All respondents were purposefully selected. The objective of using such mixed methods was to assess the organization, structure of care and perceived outcomes of SRH care. The quantitative survey data was analyzed descriptively to provide frequencies and percentages while qualitative data was analyzed by content analysis.

Sample size determination

The sample size was powered to determine the prevalence of being sexually active. The sample size was calculated using a prevalence of 33% of ever having sex, 95% confidence interval and an error margin of 5%. The prevalence of 33% was used based on a previous study by Birungi et al. [24]. A design effect of 2 was used and we recruited 624. Twelve clinics were visited and the sample size determined was 624 so the number was equally divided giving a sample size of 52 in each clinic.

Data Collection and Analysis

Survey and facility assessment

An interviewer-administered questionnaire was used to collect data through face-to-face interviews. Data was collected on socio-demographic characteristics (age at last birthday, gender, education level, religion marital status, living situation and occupation), access and utilization of SRH services (Knowledge of the place to access to SRH services, ever sought SRH services, reason for recent visit, SRH services provided during routine care and satisfied with SRH services in ART clinics).

We used Judith Bruce and Anrudh Jain framework for conceptualizing quality as “client oriented” care [25] to guide the selection of variables in the present study. The Judith Bruce and Anrudh Jain framework is a multilevel model that has been used extensively to explain and predict quality of care. The framework is divided into three parts, beginning with program effort, including the policy and political environment that defines what services are provided, financial and human resources allocated to provision of services, and program management and structure. These program inputs contribute to and influence the six elements of quality provision of choice; information and counseling for clients; technical competence; good interpersonal relations; continuity of care; and appropriate constellation of services. The impact of these attributes on changes in client knowledge, satisfaction, health outcomes, and use of services is then measured.

In the present study, based on the Judith Bruce and Anrudh Jain framework and the literature reviewed, we hypothesized that the following factors would predict quality of care: program effort: resources allocated, program management and structure; elements of quality of choice; information and counseling for clients; technical competence; good interpersonal relations; continuity of care; and appropriate constellation of services; Impact: client satisfaction. See Figure 1 for a depiction of the hypothesized independent and outcome variables of interest mapped onto the Judith Bruce and Anrudh Jain framework.

Data on reproductive services among adolescents was obtained using a series of validated questionnaires adopted from a number of tools [26-28] with a guide from Bruce-Jain framework. The tools were piloted to remove ambiguity by reframing and rephrasing some questions.

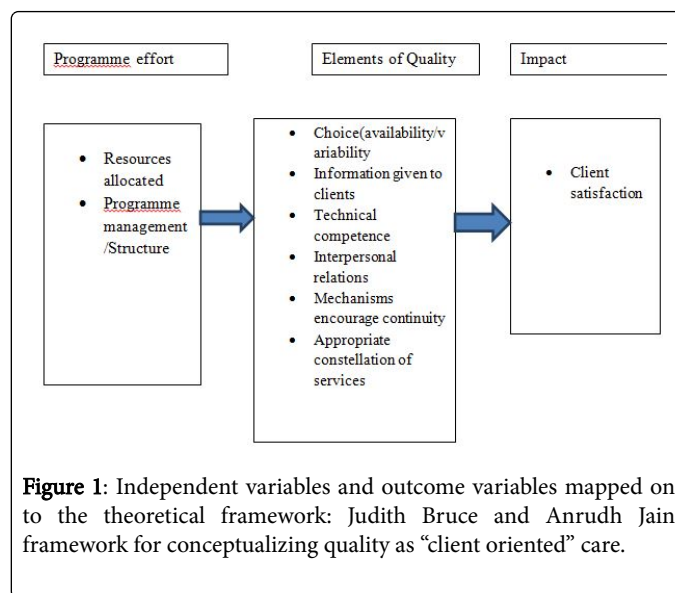


Figure 1: Independent variables and outcome variables mapped on to the theoretical framework: Judith Bruce and Anrudh Jain framework for conceptualizing quality as “client oriented” care.

Health Facility Assessment

A health facility assessment tool was developed from UNFPA and save the children tool for health facility assessment [29] and pathfinder international [30]. The tool included the following sections; health facility characteristics, equipment and commodities, services offered, information Education and Communication (IEC) materials and activity, supervision, Protocol and guidelines, use of information in facility management, staffing and providers characteristics. Observations and record review was done using this tool. We also conducted record review on SRH services.

Survey and Facility Assessment Analysis

Data was analysed using the STATA software (Release 9) to provide frequencies and percentages for categorical and means for numerical variables. Participant’s age was grouped into 10-14 y and 15-19 y. Education status was grouped into in-school and out-of-school and education level was grouped into three categories: no formal education, primary, and secondary. Occupation was grouped into three categories: students, unemployed and volunteers (employed). Knowledge of the place to access to SRH services categorized into: yes or no, ever sought SRH services, reason for recent visit, SRH services provided during routine care and satisfied with SRH services in ART clinics were presented as frequencies.

Qualitative Data Collection and Analysis

A total of 24 in-depth semi-structured interviews (IDIs) were conducted in English. In order to maintain representation from each site, 2 participants (female and male) were selected by convenience sampling. Twelve in-depth interviews were also conducted with service providers. Issues explored included sexual experiences, disclosure, and access and availability of SRH services (Choice (availability and variability), information given to clients, technical competence, interpersonal relations, and mechanisms to encourage continuity and appropriate constellation of services). The Principal Investigator (PI) approached the adolescents in the waiting area of ART clinic to solicit interest in the study. Once an adolescent had shown interest, they were

asked to remain after their ART clinic for informed consent procedures and the discussion.

After the opening question; discussion ensued with an aim of getting more depth on access and availability of SRH services in Uganda. A pre-tested interview guide was used for both adolescents and health care workers. IDIs were conducted in private locations preferred by the interviewees within the health facility and lasted about 45-60 min. All interviews were audio-recorded. The PI and research assistant conducted all in depth interviews in English. The study was stopped when there were no new ideas coming up which was characterised by participants offering the same responses. Audio recorded interviews were transcribed and translated into English by the PI as part of data familiarisation and were verified by research assistants. The research assistants verified and proofread the transcribed and translated data against the recording for completeness of the transcripts and proofread the transcripts against the recorded interviews. The PI then discussed points of divergence with the research assistants for the final transcripts.

Qualitative Data Analysis

All the data were tape-recorded after obtaining the participants' consent. Thematic analysis was conducted from transcriptions of the in depth-interviews. The transcripts were read and phrases of text in which there were words with similar meanings were grouped into categories. Similar categories were aggregated into themes and sub-themes. The findings contain direct quotes from participants and the narrations are reported as they were spoken by participants to maintain the meaning. A theme was identified as a consistent pattern found in the information that described. Data were analysed and managed using NVivo version 9.

Results

Clients' characteristics

A total of 624 HIV perinatally infected adolescent were included in the quantitative study 370 (59.3%) were females and 510 (81.7 %) were aged 15-19 years. Seventy three percent were in school and 271 (43.6%) were total orphans. Twenty four IDI's were conducted with HIV perinatally infected adolescent 12 from females. The IDI's for service providers were 12 and 8 were females (Table 1).

Facility Characteristics

Eight health facilities were public facilities, 3 private not for profit and one a research institute. All the facilities were integrated, none of the facilities offered adolescent only services (Table 1). The health facilities opened from 8.00 and closed at 5.00 pm. The facilities never had any specific clinic time or day for adolescents and there was no code of conduct for the providers. However, all the units had private rooms to conduct counseling and treatment (Table 2).

Characteristics		Frequency (n)	Per cent (%)
Gender	Females	370	59.3
	Males	254	40.7
Age groups	10-14 years	114	18.3

	15-19 years	510	81.7
Education	Out of school	166	26.6
	In school	458	73.4
Parenthood status	Both parent	105	16.8
	One parent	247	39.6
	Total orphans	272	43.6
In depth interview (adolescents)	Female	12	50.0
	Males	12	50.0
Age group of adolescents (Interviews)	13-14	3	12.5
	15-16	5	20.8
	19-19	16	66.7
In depth interview (Service providers)	Males	4	33.3
	Females	8	66.7
Type of clinic	Hospital (Public)	6	50.0
	Hospital(Faith based)	3	25.0
	Health center IV	2	12.7
	Research Institute	1	8.3
Structure of the facility	Adolescent only facility	0	0.0
	Admits all ages	12	100

Table 1: Characteristics of the participants and study site in the study.

Services provided	Number	Percentage
Health facility characteristics (n=12)		
Open at convenient times	0	0.0
Specific clinic times for adolescents	0	0.0
Private rooms for counseling	12	100
Code of conduct	0	0.0
SRH Services provided		
Education and counseling regarding SRH	12	100
Miscarriage/Post-abortion care services	0-	100
Family planning services	12	100
STI treatment and counseling	3	25
Pregnancy care and delivery	0	0
Mental health and psychosocial support	0	0
Providers characteristics		
Trained to offer adolescent friendly services	3	25
Peer educator program	12	100
Sufficient time per client	0	0
Offer privacy and confidentiality	12	100
Family planning services offered		

IUD	0	0.0
Hormonal	0	0.0
Condoms	12	100.0
Permanent methods	0	0.0

Table 2: Facility assessment (Observations and Record review).

During the IDIs adolescents expressed a need for their own clinics where they interact with their peers. Most adolescents said they preferred adolescent clinics because they were able to share experiences with their fellow adolescents. They reported that being with fellow adolescents made them feel better and they give advice to each other. This was emphasized by one adolescent.

“It is good for adults to be alone, adolescents alone and children alone.”

The providers also emphasised the need for adolescent clinics and mentioned that when some adolescents were told to go to adult clinics, they would stop going for treatment all together.

Choice of SRH Services

Using facility assessment tool all facilities were assessed on the services they provide. All facilities offered education and counseling on SRH services. Family planning provision was only restricted to condoms. For other methods, the adolescents were referred to general family planning unit. Only three facilities offered STI screening and treatment. The rest referred the adolescents to general laboratories for screening and STI clinics for treatment. None of the clinics offered services on miscarriage/post abortion care services, pregnancy care and delivery or mental health. If the services were needed, the adolescents were referred to the general clinics.

In the survey, the adolescents were asked about the choice of SRH services they obtained from ART clinic. Out of the 624, 213 (34.0%) received SRH education, 109 (17.5%) had received information on family planning and 5% on pregnancy and PMTCT services (Table 3).

Characteristics	Number	Percentage
Know a place to access SRH Services n=624		
Yes	490	78.5
No	133	21.3
Ever sought RH services n-624		
Yes	280	44.9
No	344	55.1
Reason for recent visit (n=280)		
Education and counseling regarding SRH	130	46.4
Miscarriage/Post-abortion care services	0	0
Family planning services	200	71.4
STI treatment and counseling	60	21.4
Pregnancy care and delivery	50	17.9

Mental health and psychosocial support	0	0
SRH services provided during routine care n=624		
Education and counseling regarding SRH	213	34
Miscarriage/Post-abortion care services	10	1.6
Family planning services	109	17.5
STI treatment and counseling	32	5.1
Pregnancy care and delivery	31	5.0
Mental health and psychosocial support	0	0
Discuss SRH issues		
Health providers	291	46.6
others	333	53.3
Satisfied with SRH services in ART clinics		
Yes	97	15.5
No	527	84.5

Table 3: Access and Utilization of Reproductive health services.

Information given to Adolescents

The facility assessment and record review results showed that all facilities provided information on some aspects of SRH like family planning, pregnancy, STI treatment and counseling and psychosocial support. However there are some aspects of SRH which were not addressed at all like postabortal care and mental health (Table 3). The health units had a lot of Information, Education and Communication (IEC) materials regarding HIV care, however very few IEC materials addressed SRH. The only available IEC materials were on Prevention of Mother to Child Transmission (PMTCT).

Technical Competence

The facility assessment showed that only three facilities had trained their staff in comprehensive SRH and offered adolescent friendly services. Other health providers offered SRH education and services based on the information they received during pre-service training. However, all the facilities had trained all their staff in HIV care (Table 3). Only 5 clinics had a midwife.

The health workers reported inadequate health workers who are trained in adolescent SRH.

“So when these adolescents come to the facilities, the way they are attended to maybe pushes them further away from the services. Somebody could look at you and say that; “Even at your age you are having HIV?” So how do you expect such an adolescent to go back to the facility for services?”

Interpersonal Relationships

From the adolescent IDI, the providers offered HIV services to these adolescents and they were known to all adolescents. A few respondents mentioned barriers to care as the rude/abusive health worker/counselors attitudes. Generally the health workers treated the adolescents well but at times they are overwhelmed by the heavy

workload and become rude to the adolescents. They also reported that they prefer youthful counselors who can easily relate with them.

"I feel that there are some things I am supposed to share with my fellow peers. For example you cannot tell an old counselor that I had sex and she does look at you weirdly (laughter). I have ever experienced it myself and it was not only me."

The facility assessment showed that facilities offered privacy and confidentiality by use of unique identifiers on their files. The adolescents also preferred to get information about SRH from the health providers (46.6%) (Table 2).

Appropriate Constellation of Services

The facility assessment showed that there was no variety of SRH services. Service providers wanted to have SRH services integrated in routine running of the ART clinics. The providers thought that it would be good to have integration of SRH of services for adolescents and because it improves service provision by reducing unnecessary referrals and satisfaction with services provided. Furthermore, providers also highlighted that they were few with limited skills or not competent enough to provide a variety of SRH services needed by adolescents with HIV. In addition, providers thought that integration of services requires a lot of resources like large numbers of staff, infrastructure and enough equipment to provide SRH services. This is exemplified by the quotation below;

"It would be good to have all these services here but we are few and it requires a lot of resources which we don't have"

Indeed, integration was favored as it had been found successful in young child clinics, where there was a lot of organisation support from the facility leadership, as indicated by one provider:

Integration of the services is the way to go we have seen it work in the young child clinics. The issue is that we need support from the top so that we can be able to provide some of the services since we are even starting adolescent clinic days.

The facility assessment and providers IDI indicated that the organisation of the facilities was for all the HIV patients including adult, children and adolescents. There were no unit running adolescent's clinics. The care was mainly focused on children and adults. Adolescents above 15 years were seen as adults and those below 15 years were seen as children. All the adolescents who needed SRH services were referred to general clinics but there was no reliable system to check if they had actually received the services.

Mechanism of Continuity of Care

All the adolescents were give return days for their HIV care however most of SRH services were sought from units outside the clinic. It was very hard to verify the continuity of SRH services.

Program Efforts

Adolescents and health providers often face structural barriers to improving the quality of care of SRH in ART clinic. This section shows how program factors influence the provision of SRH services.

Program Structure and Resource Allocation

Most of the units had a doctor, clinical officers and nurses. Only 5 clinics had a midwife. Most of the units had enough resources in relation to HIV care. However, SRH resources were not available. The interviews also highlighted poor facility organization in relation to SRH care. For instance the adolescents mentioned that some of the services were not available in the clinics. The health education on various issues was provided, however, for all the other services, adolescents were referred to other units. These included family planning methods (excluding condoms), STI's screening, and pregnancy and delivery services. The adolescent did not like the arrangement as expressed by one participant.

"..... I like it in this clinic, the health workers are friendly and they attend to all my needs..... these health workers know my story, sending to me to another unit for family planning services is not good. I have to tell the story again and I don't like it"

Service providers and adolescents during interviews highlighted the importance of being trained to offer the adolescent friendly services. The providers mentioned that it's important to be trained in adolescent health.

"We need to be trained to offer youth friendly services. We were trained during our pre service training however some of us have not got a chance to work with the young people till now..."

The adolescents also highlighted on the issue of training. For instance the adolescents wished that health providers should be trained in family planning in the context of HIV as exemplified by one adolescent.

"When you ask for some family planning methods, they look at you with a tough face. Some even ask you why you want to infect other people"

Impact

The only aspect on impact assessed in this study was whether the adolescents were satisfied with SRH services they received. The survey showed that 527 (84.5%) were not satisfied with services (Table 3). Dissatisfaction was also emphasised during the in depth interviews with the providers and adolescents, both adolescents and providers were not satisfied with SRH services. The adolescents disliked being referred to other clinics where they are not well known, yet, the providers said that they had limited services they offered as exemplified by a provider below.

"In this clinic we only offer health education on family planning but we only offer condoms. If the adolescent wants any other method we send them to the general family planning unit in the hospital. Even for the STI's screening we only do HIV testing but if we want to run other test the adolescents are sent to the general laboratory of the hospital.... (Nurse in eastern region).

Discussion

All health units offered SRH information and education but did not offer post abortion care, the full package of family planning services, or mental health services. The absence of these needed services limits the choices of adolescent clients and could make them delay to access or even miss out on needed services. Also, only three health units had trained their staff in SRH and adolescent friendly services, which

brings into doubt the technical competence of the service providers in provision of SRH services. The structure of the clinics was based on adult and pediatric care implying there were no adolescent-specific services. Only 5 health units had a midwife on their staff which affects the choice of SRH services, information given to clients, technical competence of provider and available constellation of services. Therefore, none of the ART clinics offered comprehensive SRH services.

Lack of care specific to adolescents is both a resource and organisational issue. According to Uganda national adolescent policy the goal is mainstream adolescent health concerns in the national development process in order to improve the quality of life and standard of living of the adolescents [31] but this can only be achieved if there is selection, training, and supervision of staff members to work with adolescents, with a major emphasis on attitude, respect for young people, and the development of interpersonal skills to promote good provider-client communication. Most of the health providers in these health units were not trained. For organization, the facility characteristics, clinics may establish separate space or special times for teen clients only, convenient hours, accessible location, adequate space with sufficient privacy, and comfortable surroundings. Most of the facilities accessed did not have this in place.

Adolescents want choice from a wide range of services in one place [32-35]. Choice of services refers to availability and variability of the services. In our study the SRH services were not comprehensive. ART clinics provided education but for services like family planning, pregnancy or STI screening, adolescents were sent to other units. The adolescents did not like this practice. It is important that even if the units cannot provide a service that meets all the needs of adolescents, then effective working arrangements with other clinics should be established to ensure that young people receive the services they need and to ensure that referral sites provide appropriate, youth-friendly treatment.

Information to adolescents gives the adolescents an opportunity to learn about new things in their lives but also for the providers to dispel myths, ensure comprehension of treatment instructions and follow-up, treatment tailor made to suit client needs and circumstances, and build rapport for future interactions. The study showed that the providers provided information on SRH services like family planning, STI and pregnancy, however, information on post abortion care and mental health was not provided. Lack of knowledge about what SRH services are available is a major barrier preventing adolescents from accessing SRH services [32]. Many adolescents do not have adequate information on SRH, especially with regards to contraceptives and STIs [32]. Unfortunately, many adolescents get information on SRH from their peers, and this information is often incorrect [36]. It is therefore, paramount to provide all the information related to SRH so that the adolescents make informed decisions.

Appropriate constellation of services refers to that element of quality that looks at organisation of services; Are they convenient and acceptable to clients, and do they meet the health needs of the communities they serve [37]? The study showed that the ART clinic did not have any special day or time for adolescents. The clinic saw patients from pediatrics to adults and the organization was based on adults or pediatrics. Offering specific times and convenient hours are important for adolescents [38]. Convenient hours and specific times for adolescent increases their attendance for SRH services and chances to open up and discuss their SRH issues affecting them [38]. Indeed, adolescents feel comfortable about receiving all SRH services they need

from the same place [39,40]. Referring adolescents to another unit for another service, increases the risk of missing services, failure of linkage to care, failure of retention in care and loss-to follow-up, leading to loss of continuity in care. Whenever possible, there should be an attempt to identify and provide the most needed reproductive health as "one-stop shopping" [41]. It is important that even if the units cannot provide a service that meets all the needs of adolescents, they should establish effective working arrangements with other clinics to ensure that young people receive the services they need and to ensure that referral sites provide appropriate, youth-friendly treatment in order continuity of care [42].

Health providers are the source of information, treatment, and care and are seen as central to quality-improvement efforts. Our study showed that only three health facilities had trained their providers in SRH. Training providers to work competently and sensitively with adolescents is often considered the single most important prerequisite for establishing adolescent-friendly services and uptake of SRH services [13,43]. This will increase confidentiality and offer privacy which is a sought after characteristic for adolescents to seek SRH services [32]. Therefore, it is only appropriate for those providers to receive substantial attention in any effort to improve the quality of health care.

Young people prefer talking to their peers about sensitive issues [32]. It is productive, therefore, to have peer counselors available as alternatives or to supplement some aspects of the counseling activities. Our study showed that all ART clinics had peer education programs; however, only three out of the twelve units had health workers trained to offer adolescent friendly services.

The study had several limitations. Generalisability of our findings is limited for several reasons: 1) the study was conducted in regional referral health facilities, where the services available may not be representative of all adolescent HIV care facilities; 2) We used purposeful sampling for the respondents who attended the ART clinics, which may lead to a selection bias, as adolescents with no access to HIV care or who had not visited the facilities on the particular study days were not included in the study, and could have different healthcare seeking behavior or different needs and perceptions regarding SRH; 3) we collected information on sensitive issues about sexual behaviors and family planning for adolescents, which may lead to under-reporting; 4) This was a cross sectional study so it is difficult to determine the causal effect; 5) In this study we did not get the programme managers, district leadership, health facility managers and policy maker's perspectives so we do not have information on whether there was a shared vision for provision of quality SRH care; 6) We interviewed only 2 people per site whose views may not be representatives of all adolescents. Likewise, the providers interviewed may not have representative views. Facilities with fewer clients were not selected, which may not be representative of all HIV clinics for adolescents.

The strength of the study was a mixed method. Data was collected from three regions out of four which is representative of the country. We assessed providers and adolescents' perspectives and facility assessment which ensured triangulation and corroborated the data from different sources. We used a recognized framework to assess quality of care.

Conclusion and Implication

The poor quality of care of SRH services in ART clinics is both an organisational and resource issue. The poor quality of SRH services is associated with a high unmet need for services.

For health systems to achieve universal access to high-quality sexual and reproductive health the ART clinics is dependent on rational decisions regarding investments in and allocation of human resources for health. There is need for in-service training of Health Workers in adolescent health. The Ministry of Health needs to engage partners for support to increase the numbers of health facilities which are adolescent friendly.

Competing Interests

The authors declare that they have no competing interests

Author's Contributions

SNM designed the study, collected and analyzed the data, drafted the paper, NK designed the study and reviewed the paper, LE designed the study and reviewed the paper and DK designed the study, analysed the data and reviewed the paper. All the authors approved the final draft of the paper.

Ethical Review and Approval

Ethical approval was obtained from the Higher Degrees and Research Ethics committee, College of Health Sciences, Makerere University and Uganda National Council for Science and Technology (REC REF 2012-085). Administrative clearance and permissions were obtained from the management of the health facilities. Written informed consent was obtained from adolescents above 18 years. For adolescents below 18 years assent from the adolescents and consent from parents or guardians was obtained. All the participants who were in need of services such as family planning or screening for Sexually Transmitted Infections (STI's) were offered these services by referral. Participation was voluntary and all the interviews were conducted in private settings to ensure participant's confidentiality.

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