

ART Uptake Among HIV Positive Adolescents: The Effect of Mass Media Campaigns in Southwestern Uganda

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Keywords: Mass media, HIV/AIDS campaigns, HIV/AIDS, ART Uptake

Posted Date: October 15th, 2020

DOI: <https://doi.org/10.21203/rs.3.rs-91547/v1>

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Abstract

Background: Globally about 1.7 million adolescents between the ages of 10 and 19 were living with HIV in 2019, of these, about 1.5 million were living in sub-Saharan Africa and approximately above 127,000 were living in Uganda. However uptake of ART is still low among adolescents especially in low income countries due to lack of information they need to understand HIV and its management. Therefore, we set out to explore the influence of mass media campaigns on promoting ART uptake among HIV positive adolescents in Southwestern Uganda.

Methods: A phenomenological qualitative cross-sectional study design was adopted to explore the influence of mass media campaigns on the promotion of ART Uptake among adolescents. We conducted 7 FGDs with Adolescents living with HIV aged 10-19 years and 5 key informants' interviews with the health care workers in the adolescents' HIV clinic at Mbarara Regional Referral Hospital. Data was transcribed verbatim and translated from Runyankole to English. Two researchers reviewed all the transcripts, developed a codebook identifying the emerging subthemes from which we manually generated the themes in relation to our research question.

Results: Results revealed a large breadth of awareness and knowledge possessed by adolescents about mass media campaigns. This ranged from knowing the various messages that were being aired out and the channels which carried these messages. These campaigns acted as catalysts to ART uptake and adherence since they inspired participants to accept themselves thus managing a number of limitations. Our participants preferred broadcast media channels and messages that featured successful stories of HIV positive living people.

Conclusion: HIV mass media campaigns promoted ART uptake among HIV positive adolescents. It is recommended that HIV health service providers take into account the unique needs and nature of adolescents while designing and airing out various media campaigns which would influence their positive living and thus leading to their increased health life expectancy.

Introduction

In 2019 about 1.7 million adolescents between the ages of 10 and 19 were living with HIV worldwide and of these, about 1.5 million were living in sub-Saharan Africa (1). By close of 2018, about 127,000 adolescents aged 10–19 years were living with HIV in Uganda (2). With increased access to antiretroviral therapies (ART), there has been a significant improvement in the life expectancy of people living with HIV in Uganda (3). However uptake of ART has been noted to be low among adolescents especially in low income countries (4–6). Maintaining adherence to ART is one of the most significant challenges for optimizing health outcomes in adolescents living with HIV (7). While the importance of ART uptake is understood, it can be more challenging among adolescents due to their emotional and lifestyle characteristics, as well as cultural and social factors and health service issues. In addition, adolescents often lack the information they need to understand HIV and effective treatment (8). Therefore HIV health service providers are pivotal in ensuring ART uptake among adolescents.

Mass media campaigns are commonly used as interventions for creating awareness and dispatching information about various topical issues that affect the community. These campaigns normally take on communication media channels like such as televisions, radio and newspapers (9). Owing to the low uptake of ART among our study population, governments and HIV activists have taken on mass media campaigns to spur behavioral change in the population. For instance in South Africa LoveLife multi-media campaigns have achieved high coverage and measurable effects on attitudes, condom use and uptake of HIV testing services among young people (10). In Uganda HIV media campaigns such as the SMS campaign, Obulamunews Reporter campaigns, Ministry of Health HIV Campaigns, TASO campaigns, and many more others have been aired out both in the print and broadcast media country wide with the aim of facilitating behavioral change in the population.

Mass media campaigns on HIV/AIDS are intended to help to promote awareness of HIV/AIDS information which would in turn lead to a shift in the behaviour of the general population (11). To this end, several studies have been done on the influence of mass media campaigns on uptake of HIV voluntary counselling and testing services however there are scanty

mass media campaigns and ART uptake among adolescents in

Uganda although such linkages have been established elsewhere (10). Therefore, we set out to explore the influence of mass media campaigns on promoting ART uptake among HIV positive adolescents in Southwestern Uganda with specificity to Mbarara Regional Referral Hospital (MRRH).

Methods

Study design

This study employed a phenomenological qualitative cross-sectional study design to explore the influence of mass media campaigns on the promotion of ART Uptake among HIV positive adolescents aged 10–19 years and receiving care at MRRH in Southwestern Uganda. Approximately 70 adolescent participants took part in the 7 Focus Group Discussions (FGDs) that we conducted from the month July 2020 to August 2020.

Study setting

The study was conducted at Adolescent HIV Clinic of Mbarara Regional Referral Hospital (MRRH). MRRH is the government of Uganda's referral hospital for the Southwestern region, serving the 13 districts including Bushenyi, Ntungamo, Kiruhura, Ibanda, Isingiro, and Mbarara city among others. MRRH also receives patients from the neighboring districts of Tanzania and Rwanda. It also serves as the teaching hospital for Mbarara University of Science and Technology (MUST). Approximately 400 adolescents receive care at the adolescent's HIV clinic of the said hospital. The study FGD participants were adolescents living with HIV aged 10–19 years and receiving care at Mbarara Regional Referral Hospital Adolescents' clinic. On the other hand the study key informants were health workers who had served in the same clinic for at least 6 months before the study who included 2 doctors, 2 and 1 counselor.

Data collection

Data was collected until saturation point was achieved. We conducted 7 FGDs with Adolescents living with HIV aged 10–19 years and receiving care at MRRH. Each FGD was composed of 10 participants, we considered this size of the FGDs to be small enough to moderate, listen to and capture all the opinions of the participants yet the size of the size was large enough to take into consideration the diversity of opinions and views of participants as suggested by (12). We also conducted 5 key informants' (KIs) interviews with the health care workers in the adolescent's clinic at MRRH. Therefore in total 75 participants took part in this study.

Clients who attended the adolescent clinic and met the inclusion criteria were requested to participate in our study. Purposive sampling technique was used to select the key informants basing on their expertise knowledge in the management of HIV/AIDS among adolescents. Written consent was obtained from all selected participants of age 18–19 years explaining the purpose of the study and clarifying that participation would be entirely voluntary. Adolescents who met the selection criteria but independently brought themselves at the clinic and were below consent age were considered emancipated minors and thus they too consented to take part in the study. Similarly, informed assent was obtained from the participants aged 10–17 years who had come to the clinic with their guardians or parents and their parents / guardians were asked to consent on their behalf. Written informed consent was also obtained from all the key informants before they took part in the study.

Data was collected using FGD and KII guides. The guides composed of open-ended questions about the influence of mass media campaigns on ART uptake among adolescents living with HIV and receiving care at MRRH. They were subjected to the scrutiny of the research team, mentors and other experts. The FGD guide was translated into Runyankole Rukiga a language that is spoken by most people in Southwestern Uganda. These interview guides were used to collect information/data from FGDs and KIs. The data collected included the awareness of the mass media HIV campaigns, the influence of the mass media

HIV campaigns on ART uptake among adolescents living with HIV and the type of media most preferred by the adolescents living with HIV. On average each FGD took about 45 minutes and each KII took about 20 minutes.

Data Management and analysis

Focus group discussions were conducted in Runyankole while key informants interviews were conducted in English as preferred by the participants. All interviews were audio recorded for transcription and translation after participant agreement and then transcribed verbatim in Runyankore and translated to English. A thematic analysis was adopted for this study, because it allows the researchers to fully reveal the meanings emerging from the data while conceptualizing narrative reports as per significant units (13). Two researchers AS and BR reviewed and read the transcripts where they developed a codebook identifying the emerging from which they generated themes in relation to our research question.

Results

The participants' responses were coded and three broad themes were generated from the data namely; Awareness of mass media HIV campaigns, influence Mass media campaigns on ART uptake, and Adolescents' media preference.

Awareness of Mass Media Campaigns Promoting ART Uptake among Adolescents

Many respondents stated that they are aware of the mass media HIV campaigns like Obulamu which was being aired on different media mainly Televisions, radios, magazines, and posters as well as phone SMS. One participant expressed awareness of these messages and was quoted saying,

"I have heard about Obulamu health campaigns on TV and radios telling people on ARVS to stop drinking alcohol and that HIV kills."

We found that majority of the participants were aware of Obulamu news reporter campaigns for example one participant reported that,

"I have also heard about Isaac and Sarah advert where Sarah was reminding the husband Isaac to take his drugs".

Other than Obulamu messages respondents were aware of messages by Rock point 256, HIV awareness drama played on Radio. To this regard one respondent said,

"I recently heard a message on the radio saying that now that corona has come dontth ∈ ktĤIVhasendedits still there and kills so keep taking the medication, because the disease kills and we should stop spreading it".

Conversely we found that some respondents reported that they were not aware of any HIV media campaigns in their settings. Interestingly almost a third of the respondents reported that they had gotten information about these campaigns from health workers but they hadn't seen or heard the campaigns by themselves. Results from the Key informants confirmed that most of adolescents receiving care at MRRH had been exposed to HIV media campaigns and they (adolescents) were indeed aware of them as expressed in this verbatim:

"There is a TV set at the triage and usually displays some of the recorded videos so as to air out the messages about ART up take. The message is in both English and Runyankole".

We also found that most of the respondents had seen/heard mass media HIV campaigns about adherence to ART, Stigma, family planning, condom use, circumcision, abstinence, counseling and testing, positive living as well as Antenatal care. Such messages were aired out in the print, broadcast and folk media. Majority of the participants pointed out that they found these HIV mass media campaigns at the health facilities they attended. For example a participant reported that,

"In hospitals like at our clinic they be saying that we should keep taking our drugs well because if we don't then the virus will make us powerless (destroy our immunity). They usually put for us such messages on the TV here at the hospital" and " in hospital like here, sometimes you go to the clinic you find posters or you hear someone saying that I saw an advert".

Indeed data from key informants was in agreement with these results where they (KIs) expressed use of media campaigns in their adolescent HIV clinic,

"We also run messages on TV at the hospital and these messages are often telling us about HIV and other diseases that can come up if one does not take their medications very well. We also have clip videos of Rock Point 256 and Obulamu that we put for our adolescents like we usually call them when it's not their clinic day and are not busy then we put for them these videos to watch and we evaluate what they have learnt from the videos at the end".

Influence of Mass Media Campaigns on ART Uptake among HIV Positive Adolescents

Under this section participants identified countless ways through which the HIV mass media campaigns influenced their uptake of ART. Among others, participants underscored these messages for offering them with inspiration. In other words participants became encouraged, motivated, hopeful, educated, and determined to take their medications. For instance one of the participants in the FGD appreciated the messages in this verbatim:

". . . They encourage me to take my dugs so as to have a healthy life and look like other healthy people and I prevent myself from getting the severe signs and symptoms of HIV and even getting infected with other illnesses because if you don't take drugs then you become wasted and look bad".

Indeed data showed that these campaigns inspired participants to adherence to treatment, fight off enacted stigma and rejection as well as increased their awareness of the likely consequences of non-uptake of ART. These results were alluded to still by almost all the Key Informants, for instance one of them commented that,

"They have helped the adolescents to avoid early pregnancy and infecting others as well as avoiding reinfection".

In fact some Key Informants confessed to have used these HIV media campaigns in their daily work as they attended to these adolescents as expressed in this verbatim:

"Whenever I see something on TV through these campaigns and it catches my attention then am like okay I can do this for my adolescents at work or I will implement and improve this or that in my care for my children at work as I call them. When I see these campaigns I pick some few words which can help me to at least talk to my adolescents and at times it impacts on their lives".

Though the study focused on mass media HIV campaigns, some participants pointed out that teachers were a major source of encouragement to their uptake of ART. For example one participant was quoted,

". . . You see teachers in class tell us that most people long ago used to die of HIV because of not taking their drugs and that if you keep taking your drugs then you can live long. They have made me aware and encouraged to take my drugs".

Participants revealed that due to these campaigns, their immunity had improved, had suppressed viral load. On the contrary, some participants expressed being irritated by these HIV media campaigns. For instance a participant commented that,

". . .like on TV you find they show these drugs that we take and everyone is seeing them so when we are at school and maybe you misplace your tablet and the other students see it, you hear them saying that we have HIV positive students here, I always feel so bad and peaceless" Such sentiments were also expressed in other FGDs for instance another participant reechoed such feelings in a verbatim:

"I hate it when the message is directed to me even in front of my enemies .I love it when the messages is given to me in secret. You find the person delivering the message says it when there is an enemy seated next to you or they even send those messages on your phone when your enemy is seeing and that person always pinpoints you making you uncomfortable".

It would appear that these HIV media campaigns elicited both externalized and internalized stigmatization tendencies among some of our study participants. A case of internalized stigma due to these campaigns can be observed in the one of the FGD submissions where a participant said *"Me it disturbs me a lot because you might be seated watching TV or listening to radio as a family and they put the messages/campaigns yet you know that you are the only victim so you feel bad that's what I don't like about them. There is no way the family members harass me but myself I feel touched".*

On the whole approximately over three quotas of the FGD participants appreciated the influence of these campaigns on their ART uptake. Although most of the participants appreciated, trusted, liked these HIV media campaigns and would even recommend them to their friends, it's imperative to note that some participants reported that they were not comfortable with the languages in which these campaigns were communicated out. The use of English Kiswahili and Luganda campaigns was considered not appropriate for instance a participant observed that,

". . . they are languages they use we don't understand because they usually use English or Luganda and me I don't understand them".

Instead participants preferred Runyakole-Rukiga messages since this is the commonly spoken and understood language by the people of southwestern Uganda. Indeed even Key informants pointed out language barrier as one of the limitations of these campaigns,

"A number of our adolescents are illiterate, yet most of these media messages are in English thus leaving them out".

The study found that some of the participants wouldn't recommend these messages to their friends for fear of being stigmatized. In fact one participant said,

"I keep the message to myself because I don't know who is sick and I hate it when someone suspects me to be positive" another participant in another FGD said *"I can't share the information. I'm the only one who is infected in the family so there is no one I can share with. I also I assume that where I get the information the friend can also get that information there".*

However most of the participants were free with these messages and were also ready to recommend them to their friends as one them said,

"I would like to share with the colleagues but it is not possible because most people hide their status and sometimes end up missing the information and sometimes dying" another participant commented that *"Me at school there is a child and he also gets his drugs from here so when I saw him I tried to advise him to always listen to those messages. I always advise my friends to listen to them. Me I be wanting that even if I meet a person and I know that he or she is HIV positive, I always want to tell that person so that even if I die at least I know that he has remained with good health".*

Participants gave their opinion about what they thought would make these HIV media campaigns to be more effective to them and the wide community of the adolescents living with HIV in southwestern Uganda. Their recommendations hinged around privacy and confidentiality since these would deal with stigmatization. In this regard one of the participants commented that,

"I like that these messages be put in hospitals because it's the health workers that keep our medical records and we trust them a lot more than people in the village who will know our status and start discriminating us from others".

Another area of improvement suggested by the participants was about the frequency of messages on Radio and TVs. Participants noted that the HIV media campaigns had reduced and more adverts were concentrating on COVID-19 yet HIV was

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"Like when am watching like some TV station e.g. UBC, sometimes they spend long like a week without putting those campaigns and someone can forget if he/she sees a week go by without any message/advert so there they don't help. Therefore they should always pass those messages during program breaks so that we keep alert and informed". Respondents also observed that the posters were scattered and they needed to be spread throughout their locations. This is evidenced by a verbatim from one of the participants who commented that, "they should increase on the number of posters now they should start putting posters everywhere and even on radio they should put other messages more than what they have been putting".

The study found that although these messages were highly recommendable to others and good, some participants noted that they were not age specific which in turn would embarrass viewers as expressed by one the Key Informants,

"They are good to a certain extent but they don't have age specifications like they put them on TV not knowing there are some young children watching like messages about sex and yet children have a high cognitive so whatever they see or hear tends to sink deep inside their brains so that is the problem with these campaigns. They would be good if they were targeted to a certain age like if they specified that like people of 15 and above should be the ones to watch the messages".

Most Mass Media channels preferred by HIV Positive Adolescents

Under this section respondents identified the different media channels that they preferred in the transmission of HIV campaigns. Majority of the respondents preferred broadcast media which involved use of Televisions, radios and public address drives because of their easy accessibility. For example a respondent in one of the FGDs stated,

"...On radios (e.g. radio west, Maria) because most people have radios and TVs like TV west. But radios work better." And another respondent stated "..... Public address vehicles because I want many people to know."

Print media was the other type of media that was identified print media but especially posters. Magazines and newspapers were also mentioned but with little emphasis. This is evidenced by one of the assertions of a participant who commented that,

"Putting posters just like people put posters on houses for sale or commercial adverts, they can do the same for HIV messages so that when someone comes and reads on that poster they can get the message".

Some of the respondents in the FGDs showed preference of the social media. Social media was also mentioned by a few participants in the FGDs though even one of the key informants underscored its applicability as a channel through which HIV campaigns would be communicated out as expressed in this verbatim,

"At least a certain percentage of adolescent have phones and they are usually in access of social media and they have shown much interest in message on social media than these posters we have in hospital".

Also a few other participants identified their preference as being mobile phone SMS. Their argument was premised on the assumption that they are always with their phones and they can receive messages anytime yet this is not always the same with print or broadcast media channels. One of the participants gave a view about that Mobile phone SMS that,

"SMS on phone like for people who are always on trips and they have no time for radios so an SMS can also act as a reminder to take Tabs because the person can easily see that message and be helped better than having to wait till they listen to radio or watch TV."

In addition to their preferred media, respondents also expressed their interests in different kinds of messages they desired to be delivered through the HIV campaigns. Almost all FGD respondents preferred messages about HIV information. These messages included; messages about ART adherence, side effects of ART, prevention of HIV spread, stigma and discrimination. A respondent in an FGD stated,

“...Messages about taking medication and messages teaching those who are HIV positive and those that are negative to stop discriminating us and seeing us as if we are useless because we also didn't want to be positive but that's how we were born”.

Respondents also pointed out testimonies and lived experiences of successful HIV positive people in society as one of messages they wanted to be carried out in the campaigns. For example one respondent stated that,

“Messages concerning the experiences and journey of life of those people who have lived with HIV for a long time. I prefer those messages because they encourage us to also live positively like those people who have lived with the disease for long time and they are doing very well”.

Lastly we found that nutrition messages were also other type of messages that our participants wanted to be part of the HIV media campaigns and these messages would involve things like balanced diet, what to eat and what not to eat while taking ART. For emphasis one of the FGD participants For example one stated,

“Messages on feeding while taking medication (the diet to follow) because if you take the drugs without eating the drugs can make you weak. They should talk about what people are supposed to eat and what they should not eat.”

Discussion

Our results revealed a large breadth of awareness and knowledge possessed by adolescents about mass media campaigns. This ranged from knowing the various messages that were being aired out and the channels which carried these messages. Our results agree with a study that was done about HIV and/or AIDS awareness among adolescents in a South African at-risk rural community which found that awareness and knowledge of HIV/AIDS influenced behaviour change among their study participants (14). We argue that due to the knowledge and awareness of our participants about HIV media campaigns, many of them enrolled for ART and adhered to the prescriptions for the therapies. In other words these campaigns helped our participants to remember to clinically take their drugs. Note that forgetfulness was one of the factors cited by a study that explored barriers to ART adherence among adolescents and young adults living with HIV in Uganda (3). We also found that due to adolescents' exposure and relationship with media campaigns, the hospital adolescent clinic was furnished with a TV set which would broadcast different campaigns that ranged from HIV spread, prevention, testing, ART adherence and places where HIV services would be sought from. Our results further revealed that most of the participants didn't remember when they first interacted with media campaigns thus confirming their strong knowledge and awareness of the said messages. We also argue that HIV positive adolescents who are in constant knowledge of HIV media campaigns are more likely to uptake ART as compared to their counterparts with no such knowledge and awareness. This is in agreement with a UN report which observed that “Knowledge is power – adolescents who regularly test for HIV are aware of their HIV status, which is critical for making informed decisions about their healthy future (1).

Similarly the study results exposed a strong influence of mass media campaigns on art uptake among HIV positive adolescents. These campaigns acted as catalysts to ART uptake and adherence since they inspired participants to accept themselves thus managing a number of limitations for example rejection, self-hatred, and stigma as well as spurring positive living. Our results are in agreement with a study done in Uganda about how exposure to mass Media affect HIV Testing and HIV-related knowledge among adolescents which found that Mass media awareness campaigns play a key role in promoting sexual and reproductive health among adolescents (15). Whereas these campaigns positively influenced ART uptake among adolescents, our study participants expressed concerns about the languages these messages were frequently aired out. We found that most of the campaigns were done in languages that some participants loosely understood. We argue that language challenges in the mass media campaigns could have a negative uptake of ART among adolescents. It is not surprising that our participants suggested to have campaigns in their local language. These results are in consonance with a study done in Zambia about the barriers to HIV care and adherence for young people living with HIV where language challenges were cited to be one of the reasons for adolescents failure to enroll or dropping from ART Clinic (16).

Due to availability of a number of communication channels, our study results showed that participants preferred broadcast channels as compared to other media. This kind of preference is not peculiar to this particular study, for example in a study done about sexual and reproductive health information sources preferred by out-of-school adolescents in rural southwest Uganda, where it was observed that Many participants say their most valued source of reliable information about sexual and reproductive health issues comes from radio (17). We also argue that this preference was mainly because our participants were mainly comprised of school going adolescents who didn't have smart phones and could therefore not have preferred social or print media which are normally out of their range of reach and expensive. Even then, the available literature indicates that ART uptake and adherence using phone interventions is mainly among the adult population. For instance a systematic review revealed that 12 out of the 13 studies that involved phones as a platform for adherence were done among adults while just 1 was done in both adults and adolescent (18). This further confirms our results that broadcast media was the most suitable platform to carry HIV campaigns among adolescents. Moreover social media targets especially phones are prohibited in most schools in Southwestern Uganda, thus justifying their preference for radio and TV channels which could be readily available to them in their homes and sometimes at school. Similarly a study about internet use among Ugandan secondary school going adolescents in Mbarara city, found that over half (55%, 277) of the participants had never used the internet and their reasons were related to cost and cost, access and technical knowhow (19).

Contrary to common HIV media messages that hinge around prevention, spread, testing, stigma and ART adherence, our participants preferred messages that featured successful stories of HIV positive living people sometimes referred to as peer treatment supporters. They argued that such stories would reduce stigma, build their self-esteem, spur hope, and would lead to their self-actualization as well as communicating to them that they were not the only ones in the situation. Such views are in agreement with the results reported in a systematic review on the interventions to improve antiretroviral therapy adherence among adolescents in low and middle-income countries. In this review it is reported that an RCT in Uganda found a significantly higher proportion of participants receiving adherence reminders from peer treatment supporters compared to those who didn't have such treatment supporters (18). It is also in agreement with the Young-people, Adolescents Peer Supporter (YAPS) Model which uses peers to reach out to fellow young people living with HIV aged 10–24 years (20). Its goal is to contribute to improved health outcomes and survival of adolescents and young people living with HIV. The YAPS model objectives are: To increase identification and linkage of HIV positive adolescents and young people to care, to improve retention in care and adherence to treatment, and to strengthen psychosocial care and support services for all young People living with HIV to cope better with their HIV status (20). Other messages that participants preferred concerned about eating habits since they argued that uptake and adherence to ART was also dependent on type of diet they had. Note that Four studies done in Zambia, Niger, Honduras and Haiti evaluated nutrition-support interventions and three found statistically significant effects on adherence (18). Such results therefore justify our participants' preference of nutritional messages on top of successful stories of HIV positive people's lived experiences.

This study has a few limitations to be noted. We conducted the study in one adolescent's clinic however this clinic was at a regional referral hospital which has a large catchment area of the population. Secondly this study adopted a cross-sectional design which limited our continuous interaction with the sample population. However the results thereof pointed to adolescents, concerns that require further research. The study was conducted at the time when Uganda was under lockdown due to COVID – 19 pandemic and this limited our closer and in-depth interaction with our participants because of the stringent standard operating procedures in the management of COVID – 19.

Conclusion

Our study shows that most of our participants were aware of HIV media campaigns mass and that these campaigns promoted ART uptake among HIV positive adolescents. This is because these campaigns reminded them about the need for ART uptake, inspired participants to accept their predicament and fostered positive living. Indeed participants suggested that more messages about successful stories of HIV positive living people to be fearing so often in the media campaigns since these inculcated esteem, hope and acceptance among our participants. It is therefore recommended that HIV health service

providers should take into consideration the unique needs and nature of adolescents while designing and airing out the various HIV media campaigns which would lead to their fulfilling and increased life expectancy.

Abbreviations

AIDS- Acquired Immune Deficiency Syndrome, ART- Antiretroviral Therapy, FGD- Focus Group Discussion, HIV- Human Immunodeficiency Virus, MRRH- Mbarara Regional Referral Hospital, SMS- Short Messaging System, TV- Television

Declarations

Acknowledgements

We appreciate the director of MRRH for allowing us to conduct the study at the hospital. We appreciate the head of the adolescent's clinic for allowing us to interact with the adolescents and the health workers at the adolescent's clinic for working with us and helping in the coordination of participants. We acknowledge the study participants for giving in their time to participate in our study.

Funding

This study was done with the financial support of the Fogarty International Center (U.S. Department of State's Office of the U.S. Global AIDS Coordinator and Health Diplomacy [S/GAC] and the President's Emergency Plan for AIDS Relief [PEPFAR]) of the National Institutes of Health under Award Number R25TW011210. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health"

Availability of data and materials

The datasets generated and /or analyzed during the current study are not publicly available due to research ethics board restrictions but are available from the corresponding author on reasonable request.

Authors' contribution

AS, provided leadership to the research, team, involved in all processes of research from concept development to manuscript. TS, BB, AS, these were involved in proposal writing, data collection, AS and BR did data analysis. NJ, BR, these provided mentorship to the study from concept development, proposal writing, data collection and analysis as well as reviewing the manuscript back and forth. All authors consented to manuscript submission for publication.

Ethics approval and consent to participate

Approval to conduct the study was obtained from the MUST Research and Ethics committee (MUST REC 10/01-20). Further permission was obtained from Uganda National Council of Science and Technology to conduct the study in Uganda (UNCST RESCLEAR/01) and permission from the Hospital Director to conduct the study at the hospital. All participants gave written consent/ assent before enrolling in the study.

Consent for publication

Not applicable

Competing interests

Authors declare that they have no any conflict of competing interests

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