Student's Journal of Health Research Africa
Vol. 4 No. 6 (2023): June 2023 Issue
https://doi.org/10.51168/sjhrafrica.v4i6.435
Original article

ASSESSMENT OF FACTORS AFFECTING ADHERENCE TO ANTIRETROVIRAL THERAPY AMONG HIV INFECTED ADOLESCENTS ATTENDING ART CLINIC AT KAJJANSI HEALTH CENTRE IV, WAKISO DISTRICT. A CROSS-SECTIONAL STUDY.

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Abstract

Introduction:

HIV/AIDS pandemic remains a serious public health challenge globally therefore for ART to work efficiently, adherence is very essential. The study assesses factors affecting adherence to ART among HIV-infected adolescents attending the ART clinic at Kajjansi Health Centre.

Methodology:

The study was cross-sectional and qualitative methods of data collection were used.

Results:

The sample size of the respondents was 120 HIV-positive adolescents aged between 10 to 19 years attending the ART clinic at Kajjansi Health Center IV, the majority being males 69 (57.5%) and had attained secondary education 52 (43.3%). The biggest proportion 98 (81.7%) had ever missed taking drugs for reasons like having side effects, feeling better, and forgetfulness. The majority 86 (71.7%) had disclosed to relatives about their HIV and 64 (53.3%) were in boarding school. The biggest percentage 61.7% (74) did not know about their caregivers' HIV status and the majority 60 (50%) reported a good relationship with the health workers.

Conclusion:

Low level of adherence to ART among HIV-infected adolescents at Kajjansi Health Center IV was attributed to patient-related factors like forgetfulness, side effects of the drugs, discrimination of adolescents, and being in boarding school.

Caregiver-related factors like staying with biological parents, forgetfulness, poverty, and the HIV status of the caregiver also were positively associated with ART adherence, and health worker-related factors like relationship with the clients, maintaining confidentiality, and inadequate staffing.

Recommendations:

Increasing sensitization on ART adherence, increasing support to HIV service providers through improved budget allocations, educating adolescents on ART and how to adhere to treatment, orienting clients to other public facilities within their catchment area, and use of reminders to take drugs and seeking medical advice from health workers not only when side effects arise but also when they feel better.

Keywords: ART adherence, Antiretroviral Therapy, HIV Infected Adolescents,

Submitted: 2023-05-23 Accepted:2023-06-06

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1. Background of the study.

HIV/AIDS pandemic remains a serious public health challenge globally with its prevalence standing at approximately 38.4 million people. Adolescents and young people between the ages of 15-24 years contribute up to 50% of new infection occurrences worldwide, with about 1.75 million adolescents between the ages of 10 – 19 living with HIV accounting for about 5% of the total (UNICEF 2021).

The majority (68%) of people living with HIV are in sub–Saharan Africa (UNAIDS, 2019). According to the Uganda Ministry of Health, The HIV prevalence among adolescents was 1.8 percent (MOH, 2022).

One of the interventions according to WHO is access to antiretroviral therapy for HIV-infected people. However, a high level of adherence (>95%) is required for antiretroviral therapy to be effective (B Achappa et al, 2013). Though it was realized that ART adherence is a very big challenge among HIV-positive adolescents, the full benefit of medication can only be realized if patients follow prescribed treatment regimens and this is more important with HIV treatment where there is a risk of development of resistance with poor adherence.

Even though adherence rates for adolescents were 84% in Africa according to Jimmy BV et al, 2022, most ART programs in Sub-Saharan Africa have emphasized more on initiating people on ART in contrast to ensuring effective use of medicines hence adherence to long-term medications has remained a problem among adolescents.

Adherence to ART is thus critical for the success of ART-providing programs for healthier lives and reduced HIV mortality, therefore, citing the relevance to assess the different factors contributing to their adherence and possible solutions to help the non-adhering, therefore this study assessed the factors affecting adherence to antiretroviral therapy among HIV infected adolescents attending ART clinic at Kajjansi Health Center IV.

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2. Methodology.

2.1. Study design.

The study utilized a cross-sectional study design of HIV-positive adolescents receiving ART at the Kajjansi Health Center IV ART clinic. Here the data is collected at a single point in time. The outcome and exposures of the participants were measured at the same time.

2.2. Study area.

The study was done at Kajjansi Health Center IV located in Kajjansi town council along Entebbe Road from 17th Feb 2023 to March 2023. It is a multi-disciplinary health center that offers free comprehensive HIV packages of prevention, care, and treatment services. It has specialized clinics for NCD-hypertension/ diabetes; mental health, elderly, eye, and sexual reproductive health services, palliative care, and dental and adolescent friendly clinic.

2.3. Study population.

The study was conducted on HIV-positive adolescents attending the ART clinic at Kajjansi Health Center IV.

2.4. Sample size determination.

The Burton formula (1965) formula was used, that is $N = \frac{QR}{O}$

Where;

- Q: is the total number of days taken to collect data.
- R: Is the maximum number of respondents to be interviewed
- O: Maximum amount of time on each respondent.

Q= 10, R= 12, O = 1 hour

there fore $N = \frac{10 * 12}{1}$

N= 120 respondents

2.5. Sample size of 120 respondents was used.

2.6. Sampling technique

The participants were selected using the simple random sampling method.

2.7. Sampling procedure

The researcher selected the participants fitting the inclusion criteria randomly giving each participant an equal probability of taking part in the study. This method was used because it's easy, convenient to use, and time efficient enabling acquiring of results within the shortest time possible.

2.8. Data collection method.

In this study, the qualitative data collection method was used. Questionnaires containing questions derived from the specific objectives were issued to the adolescents with the help of assistants at the ART clinic.

2.8.1. Data collection tools.

Semi-structured and open-ended questionnaires were issued to adolescents willing to participate in the research.

2.8.2. Data collection procedure.

The researcher recruited research assistants and trained them on how to fill the data collection tools.

The researcher obtained consent from the caretaker of adolescents aged 10-14 years and consent from adolescents aged 15-19years.

Data were collected by research assistants by distributing questionnaires to the randomly selected study respondents.

Those who are illiterate were assisted by the researcher or research assistants in filling in the questionnaire.

2.9. Study variables.

2.9.1. Dependent variable.

It included adherence to ART amongst adolescents attending the ART clinic in Kajjansi Health Center IV. This variable was measured through the;

- Regular attendance to the health facility by HIV-infected adolescents
- Being regular on counselling services
- Number of pills taken
- Number of doses missed

2.9.2. Independent variables.

These included patient-related factors, knowledge of the ART regimen, caregiver factors, and health worker factors.

They were measured by manipulating the variables to measure the impact on the dependent variable.

2.10. Quality control.

Data collection tools were pre-tested before the collection of data. Corrections were done for the questions not well understood.

Research assistants were trained before the data collection on what to do during the process. Data collection was collected for 3 weeks at the ART clinic.

2.10.1. Inclusion criteria:

All HIV-positive adolescents between 10-19 years receiving ART at Kajjansi Health Center IV were included in the research. Those receiving ART at Kajjansi Health Center IV as their primary site and those who have been on ART for the past 6 months at least. Adolescents between 10 to 15 years whose caregivers had consented to participate and those between the age of 16 and 19 who had consented were included in this study.

2.10.2. Exclusion criteria:

Adolescents who did not consent were not included in the study. Those who were temporarily receiving ART from Kajjansi Health Center IV and those who are newly diagnosed with HIV were excluded from the research. Those who were critically ill and also those with mental illnesses were excluded from the study.

The study was carried out by observing the standard operating procedures.

3. Data analysis and presentation.

Data were tallied manually first according to the research objectives and finally, quantitative data was entered into the computer using Microsoft Excel for analysis. The analyzed data was presented using statistical methods like tables, frequencies, figures, and narratives of which

frequency and percentages were utilized for easy interpretation and establishment of a correlation of the variables in the study.

3.1. Ethical consideration

The proposal was first approved by the research supervisor and the Dean School of clinical officers of Mildmay Institute of health sciences. Upon approval, an introductory letter was issued and presented to the administrative office of Kajjansi Health Center IV to seek permission for conducting the research.

Once the permission was granted, informed consent was obtained from the caregivers of adolescents between the ages of 10 to 14 ages and consent from the adolescents between 15 to 19 years after the participants had understood the purpose and benefits of the study.

No names were used during data collection to keep confidentiality, rather study numbers were used to keep the identity of the study participant.

The respondents were accepted to withdraw from the study at any point and they were not penalized in any way for their withdrawal from the study.

The researcher did not pay any respondents for taking part in the research.

4. Presentation, Analysis And Interpretation Of Results.

4.1. Demographic characteristics of the respondents.

Out of 120 respondents who participated in the study, the majority, 69 (57.5%) were male, 74 (61.7) were aged between 15 and 19, and 52 (43.3) had attained secondary education level.

Patient related factors affecting adherence to ART among HIV infected adolescents attending ART clinic at Kajjansi health center IV.

A bigger proportion of the respondents 98 (81.7%) reported having ever missed taking their ARV drugs where the majority attributed it to the ARVs' side effects 64(53.3%), some reported they forgot 35(29.1%) to take the medication and others did not take because they felt better 21(17.5).

It was noted that 77 (64.2%) of the respondents' health was stable after initiation of ART, 42 (53%) felt better and 1 (0.8%) felt worse.

86 (71.7%) of the respondents reported that their relatives knew about their HIV status, and 34 (28.3%) in contrast reported that their relatives did not know about their status. In addition, 20 (16.7%) of the respondents reported that their friends knew about their status and 100 (83.3%) accounted that their friends did not know about their HIV status.

It was discovered that 64 (53.3%) of the respondents were in boarding school and 60 (55%) had no privacy in school, 56 (46.7%) were not in boarding school and 54 (45%) had privacy in school.

It was also discovered that 56 (46.7%) of the respondents felt that they were discriminated against by their friends and relatives and 64 (53.3%) felt that they were not.

Care giver related factors affecting adherence to ART among HIV infected adolescents attending ART clinic at Kajjansi Health center IV.

It was reported that 50 (41.7%) of the respondent's parents were both alive, 36 (30%) had both parents dead and 34 (28.3%) had one parent alive.

It was noted that with several 70 respondents who had lost either one or both their parents, 30 (42.9%) had lost them to HIV/AIDS, 25 (35.7%) to other conditions and 15 (21.4%) did not know the cause of death of their parents.

46 (38.3%) of the respondents lived with both parents, 38 (31.7%) with one parent, and 36 (30%) with other relatives.

Findings elicited that 102 (85%) of the respondents had employed caregivers, 28 (23.3%) could provide medications needed and other necessities on time and with ease, and 74 (61.7%) could provide medications and other necessities on time but with difficulty. 18 (15%) had unemployed caregivers and 18 (15%) were not able to provide medications and other necessities on time.

It was discovered that 94 respondents were not able to come to the hospital for medication on time, 52 (55.3%) had a lack of transport as a reason, 32 (34.0%) reasoned out that the caregivers forgot and 10 (10.6) respondents gave other rea-

Table 1: **Frequency distribution of demographic characteristics of respondents (N=120).**

Characteristic		**Frequency**	**Percentage (%)**
Sex	Male	69	57.5
	Female	51	42.5
Total		120	100.0
Age	10-14	46	38.3
	15-19	74	61.7
Total		120	100
Level of education	Tertiary/ vocational	36	30
	Secondary	52	43.3
	Primary	22	18.3
	Not school going	10	8.3
Total		120	100

Table 2: **Patient related factors affecting adherence to ART.**

Variable	Category	Frequency	Percentage (%)
Period on ARVs	Less than 1 year	10	8.3
	2-4 years	22	18.3
	5-9 years	20	16.7
	More than 10 years	68	56.7
Missed taking drugs	Yes	98	81.7
	No	22	18.3
Reasons for missing medication	Forgot	35	29.1
	Felt better	21	17.5
	Had side effects	64	53.3
Health status since initiation of ART	Better	42	35
	Stable	77	64.2
	Worse	01	0.8
Relatives know about HIV status	Yes	86	71.7
	No	34	28.3
Friends know about HIV status	Yes	20	16.7
	No	100	83.3
Feel discriminated by friends and relatives	Yes	56	46.7
	No	64	53.3
Had side effects of ARVs	Yes	97	80.8
	No	23	19.2
Are in boarding school	Yes	64	53.3
	No	56	46.7
Have privacy at school	Yes	54	45
	No	66	55

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Table 3: **Care giver related factors affecting adherence to ART.**

Variable	Category	Frequency	Percentage (%)
Parents still alive	Yes	50	41.7
	No	36	30
	One is alive	34	28.3
Who they live with	Both parents	46	38.3
	One parent	38	31.7
	Others	36	30
Care giver employed	Yes	102	85
	No	18	15
Ability to provide medications needed and other essential necessities on time	Yes and with ease	28	23.3
	Yes but with difficulty	74	61.7
Ability to come for medication from hospital on time	No	18	15
	Yes	26	21.7
	No	94	78.3
Care giver status known	Yes	46	38.3
	No	74	61.7
Reminder from caregiver to take medication	Yes	76	63.3
	No	44	36.7

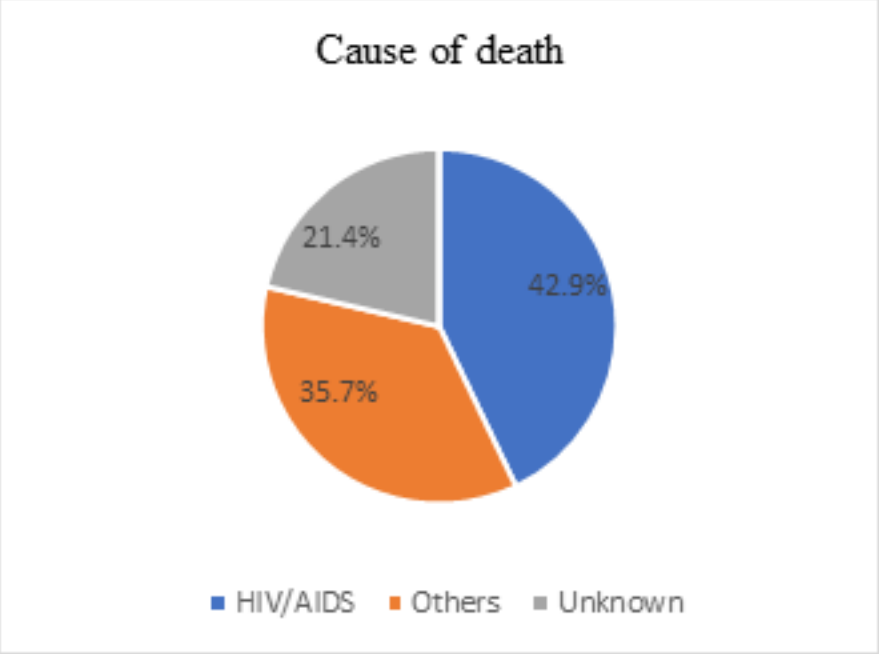

Figure 1: **Causes of death for deceased parents.**

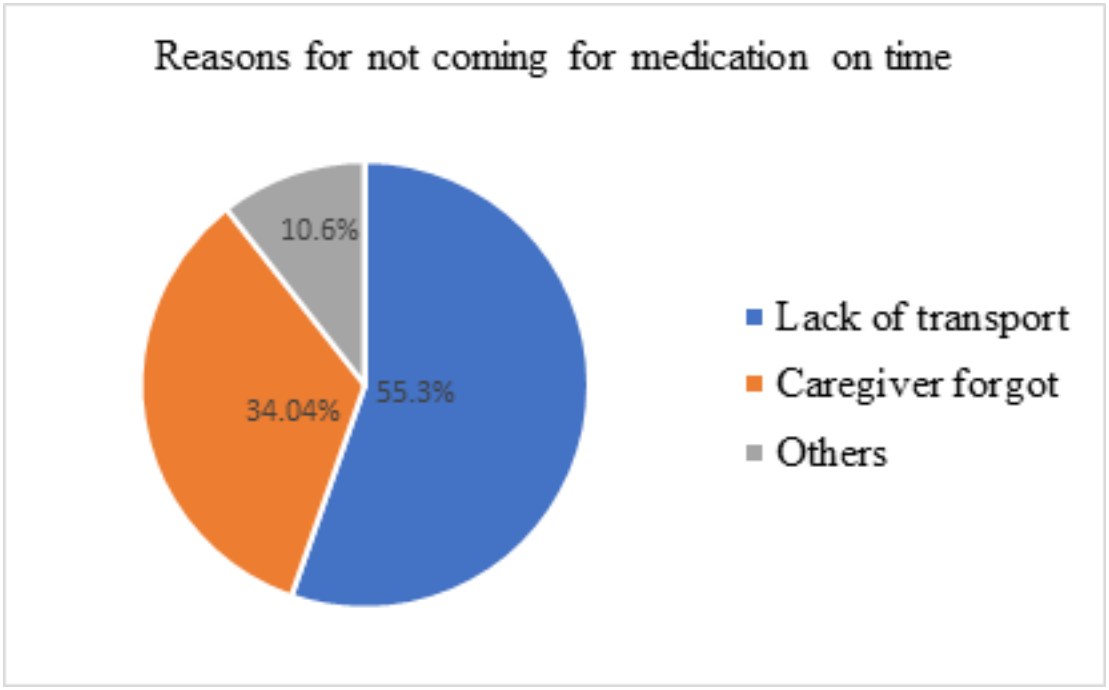

Figure 2: **Reasons for not coming for medication on time.**

sons.

46 (38.3%) of the respondents knew their caregivers' HIV status and 74 (61.7%) did not know.

Out of the 46 respondents who knew their caregivers' status, 14 (30.4%) were HIV-negative and 32 (69.6%) were positive.

Health worker related factors affecting adherence to ART among HIV infected adolescents attending ART clinic at Kajjansi health centre IV.

4.1.1. Table 4: Health worker related factors affecting adherence to ART.

60 (50%) respondents reported that the health workers' attitude towards them was excellent while 40 (33.3%) reported that their attitude towards them was good, 17 (14.2%) reported a fair attitude and 3 (2.5%) reported a bad attitude towards them.

Of the 120 respondents, 118 (98.3%) reported having received counselling from the health workers and 2 (1.7%) in contrast reported they did not receive counselling from the health workers whenever at the hospital.

It was discovered that the majority 119 (99.2%) were not shouted at by the health workers and 1 (0.8%) reported to have been shouted at by the health worker.

In response to the duration spent at the hospital, 96 (80%) reported to have spent less than an hour at the hospital while 24 (20%) reported to have spent about two hours at the hospital. There was no account for spending more than 3 hours at the hospital.

It was noted that 60 (50%) of the respondents had a good relationship with the health workers, 35 (29.2%) excellent, 22 (18.3%) fair and 3 (2.5%) reported a bad relationship with the health workers

5. Discussions

5.1. The patient-related factors affecting adherence to ART among HIV-infected adolescents attending ART clinic at Kajjansi Health Centre IV.

Study results show that the majority, 69 (57.5%) of the respondents were males, however, no direct relationship between sex and adherence to ART was observed in this study implying that being male or female did not have any influence on ART adherence. This is inconsistent with the study findings of Prah J, et al, 2018 in their study

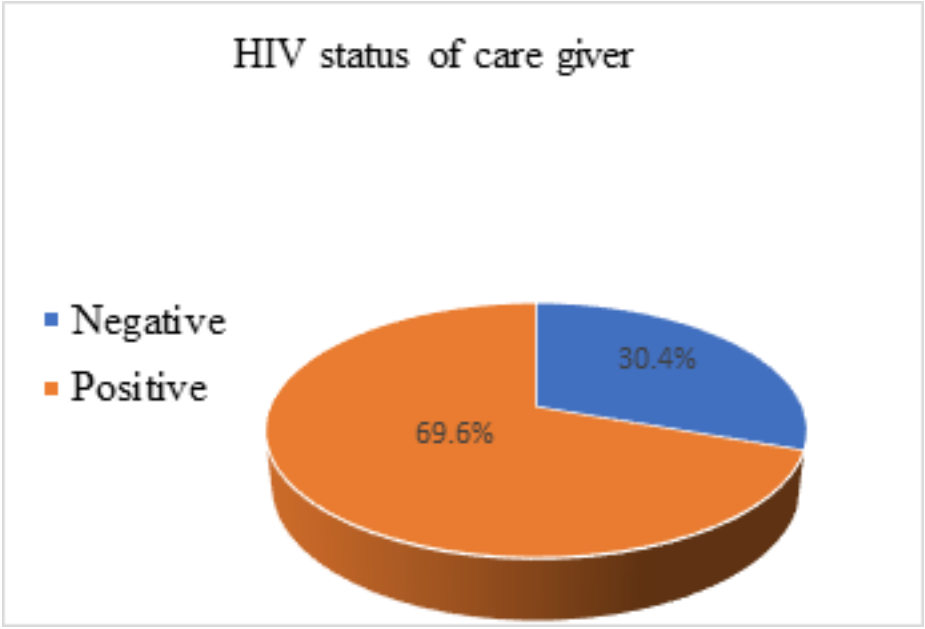

Figure 3: **Presentation of HIV status of care giver.**

Table 4: **Health worker related factors affecting adherence to ART**

Variable	Category	Frequency	Percentage (%)
Attitude of the health worker when at the hospital	Excellent	60	50
	Good	40	33.3
	Fair	17	14.2
	Bad	3	2.5
Counseled by the health worker when at hospital	Yes	118	98.3
	No	2	1.7
Ever been shouted at by the health worker at the hospital	Yes	1	0.8
	No	119	99.2
Time spent when getting medication at hospital	Less than 1 hour	96	80
	2 hours	24	20
	More than 3 hours	0	0
Ever been addressed as HIV positive patient by the health worker in the presence of other people	Yes	0	0
	No	120	100

Factors affecting adherence to ART among HIV/ AIDS patients in Cape Coast Metropolis, Ghana in which females could adhere to ART more than males.

In this study, it was found that adherence to ART was high in respondents between the ages of 10-14 and low in respondents between the ages of 15-19. It was observed that 74 (75.5%) of the 98 respondents who had ever forgotten to take their medication were between the ages of 15 and 19 compared to the 24(24.5%) who were aged between 10-14. This signified that an increase in age was associated with reduced adherence which was most likely attributed to parents entrusting older adolescents to be more responsible for their medications leading to an overall drop in adher-

ence among the older adolescents. In comparison to the study findings of Firdu et al, 2017 in their cross-sectional study HIV infected adolescents have low adherence to ART, adherence to ART was expected to be high among adolescents given that this age group is constantly under the supervision of caretakers who remind them to take their pills and perhaps the adult patients are expected to understand better the importance of adherence to ART, as well as consequences of non-adherence like treatment failure due to development of ART resistance.

As of the study majority, 52 (43.3%) of the respondents had attained secondary education level implying that the majority of the adolescents were still at school. It was noted that those attending secondary education were knowledgable about ART such as knowing that their health would be poor if they did not take their drugs as prescribed because they had similar teachings in school and at the ART clinic during health education sessions. This, therefore, showed that those with higher levels of education had higher levels of adherence which was most likely attributed to the high levels of knowledge attained compared to those of lower education levels. The majority,68 (56.7%) of the respondents had been on ART for more than 10 years and the period on ART was significantly associated with adherence, in that those who had been on ART for more than 10 years were most likely to adhere compared to those who had spent 1 year or less on ART. This may be due to consequent teachings and counselling observed during the study these clients receive at the clinic over time that enlightens their knowlegde on HIV/AIDs.

It was further discovered that more than half, 98 (81.7%) of the respondents had ever missed taking their pills. Therefore an overall deficit in adherence was observed as 95% drug consumption can not be attained which may eventually affect the effectiveness of the drug. In comparison to the findings of the study carried out by Firdu et al, 2017 in their cross-sectional study HIV infected adolescents have low adherence to ART in Addis Ababa, Ethiopia, showed that missing even one pill on a regimen of two pills per day in a week signals poor adherence and could lead to the development of ART resistance.

In the current study, non-adherence to ART was majorly attributed to factors like having side effects of ART 64 (53.3%). Having ever had side effects of ART had a negative association with adherence. The side effects reported included nausea, vomiting, skin rashes, and hallucinations. This points to the need for thorough counseling among these adolescents on the importance of adherence to ART, what to do when side effects occur, and when to seek medical advice, especially on ART. These findings correlate with those from a cross-sectional study carried out in Kalungu and Wakiso districts by Bukenya et al in their study about What causes non-adherence among some individuals on long-term antiretroviral therapy? where the participants reported that the severity of side effects compelled them to discontinue ART to get relief. Among the side effects reported included severe headaches, nausea, numbness, diarrhoea, and skin rashes.

It was also discovered that forgetting to take drugs or going for a refill from the clinic accounted for 35 (29.1%) and affected adherence among some adolescents. This was attributed to being occupied by some activities for example school work, not having someone to remind them to take the drugs, or even possessing reminders to remind them to take drugs. This affects adherence in such a way that the desired adherence of at least 95% is not obtained which could lead to resistance to the drugs hence less effectiveness of the drugs. These findings correlate with those of a cross-sectional study carried out in Ghana by Ankrah et al, 2016 in their study Facilitators and barriers to antiretriviral therapy adherence among adolescents in Ghana which reasons for non-adherence to ART included forgetfulness which was attributed to pre-occupation with other life events including attending church services, early start of school activities, socializing and helping parents with trading activities.

The majority, 86 (71.7%) of the respondents disclosed their status to their relatives. Disclosure is very important as it helps to promote support given to HIV-infected adolescents hence increas-

ing the levels of adherence. Disclosure of HIV status is also very hard due to the stigma entailed with it. However, during counseling, clients are usually told that having HIV is not being sick and that one can have HIV and live a healthy life if one adhered to treatment. In correlation to a study carried out in South Africa by Adeniyi et al 2018 in their study Factors affecting adherence to antiretroviral therapy among pregnant women in the Eastern Cape, South Africa, HIV-positive counsellors who would freely disclose their HIV status to clients they counselled, had high levels of adherence to ART. In another study carried out by Ankrah et al in their study "Facilitators and barriers to antiretroviral therapy adherence among adolescents in Ghana" people who were open and had told their friends and family about their HIV status were supported during ART treatment.

Close to half, 56 (46.7%) of the respondents reported that they had ever been mistreated or treated differently by either family members, friends, or teachers and this had a negative influence on ART adherence. This was similar to the observation by MOH (2016).

It was also discovered that 64 (53.3%) of the respondents were in boarding school and 66 (55%) also reported not having privacy at school. It was noted that privacy had a big role in adherence to ART among school-going adolescents especially those in boarding schools in such a way that adolescents who did not have privacy had a hard time taking their drugs as they did not want the other students to see them taking their drugs whereas other did not have an appropriate place to keep their drugs which could not be accessed by the other students. This greatly affected adherence as most adolescents end up not taking their drugs for fear of being seen by their fellow students at school. These findings correlate with those in a qualitative study carried out in Rwanda by Mutwa et al, 2013 in their study Living situation affects adherence to combination antiretroviral therapy in HIV-infected adolescents in Rwanda where adolescents in boarding school were not able to adhere to ART due to lack of privacy. They struggled to find a location where they could store and take their medications since they thought they had to keep their pill bottles hidden from both the teachers and other students. They discussed how it was challenging to conceal the medication when other students would occasionally search through their luggage.

5.2. Caregiver-related factors affecting adherence to ART among HIV-infected adolescents attending ART clinic at Kajjansi Health Centre IV.

36 (30%) of the respondents had both parents dead and 34 (28.3%) had one parent alive hence living with other people essentially guardians. Living with other people in a homestead especially where biological parents are absent can increase stigma, and lack of privacy and consequently result in non-adherence to ART. This is supported by a study finding in Uganda on barriers to ART adherence among adolescents and young adults living with HIV carried out by McCarthy et al, 2018 where it was revealed that many of the adolescents with HIV-positive parents who had died had an ongoing struggle with their loss, as without their biological parents, the adolescents faced a constant change in guardianship, challenging their ability to grow up in a stable household thus affecting them since not all people in the household know that they are supposed to take their medication, therefore it affects their adherence to ART.

102 (85%) of the respondents reported that their caregivers were employed while 18 (15%) were not. Caregivers are the main source of financial support for adolescents as they need money for transportation to the health facility and also other additional medical costs. Adolescents whose caregivers were employed found it easier to come to the hospital to pick drugs and also obtain other medical services as they had the money to access them unlike those whose caregivers did not have employment who had a hard time getting to the hospital due to insufficient transportation fee which greatly affected their adherence as they sometimes missed picking drugs from the hospital. These findings were correlating with those obtained in a study carried out in Uganda by Nabukeera et al, 2015 in their study "Adherence

to antiretroviral therapy and retention in care for adolescents living with HIV from 10 districts in Uganda" where it was noted that poverty resulted in lack of food and transport money to health facilities hence affecting ART adherence. Similarly, in a study carried out by Ankrah et al, 2015 in their study Facilitators and barriers to antiretriviral therapy adherence among adolescents in Ghana it was observed that despite ARVs being free, not all patients find it easy to pay for the additional costs of frequent travels for their medication due to the financial constraints of the family. Such patients sometimes run out of ARVs and default in medication routine thus leading to non-adherence and increased disease progression in the body.

It was discovered that 76 (63.3%) of the respondents were reminded by the caregivers to take medication while 44 (36.7%) were not hence the poor adherence since the adolescents' caregivers forgot to remind them to take the pills since caregivers play a major role in helping

adolescents adhere to ART as it was observed that most adolescents who were reminded to take drugs by their caregivers had a higher adherence compared to those whose caregivers did not remind to take drugs. In contrast to a cross-sectional study carried out by Wadunde et al, 2018 in their study Factors associated with adherence to antiretroviral therapy among HIV-infected children in Kabale district, Uganda, caregiver forgetfulness was identified as the major reason for missing ART doses, therefore, affecting ART adherence.

Furthermore, in this study, 46 (38.3%) of respondents' caregivers knew their HIV status, while 74 (61.7%) did not know their HIV status and it was noted that it was easier to adhere when the caregivers knew their HIV status more so when they were positive. Similarly, in a cross-sectional study, carried out in Uganda by Wadunde et al, 2018 in their study "Factors associated with adherence to antiretroviral therapy among HIV infected children in Kabale district", it was found that caregivers who knew their HIV status had their children more adherent to ART than the caregivers who did not know their status. This, according to Rajput et al, 2022 in their study Adherence, safety, and efficacy of antiretroviral therapy among children at a tertiary hospital in India is attributed to the fact that caregivers who are HIV positive understand the importance of long-term adherence.

5.3. Health worker-related factors affecting adherence to ART among HIV-infected adolescents attending ART clinic at Kajjansi health center IV.

The majority, 60 (50%) of the respondents defined their relationship with the health workers at Kajjansi health center IV as simply good and the respondents' relationship with the health workers had a positive impact on ART adherence. A good patient-health care provider relationship is an important motivating factor for adhering to complex combination drug therapies. This was not agreed with a similar study carried out in Malawi by Chirambo et al, 2019 in their study Factors influencing adherence to antiretroviral treatment among adults accessing care from private health facilities in Malawi which revealed that due to poor interaction between health workers and clients, ART clients tend to search for another facility for a refill rather than being embarrassed at the clinic. This is about a study carried out by Adeniyi et, 2018 al in their study Factors affecting adherence to antiretroviral therapy among pregnant women in the Eastern Cape, South Africa, influences adherence in that clients are forced to leave a nearby health center for another which is far and give up on treatment refill in the long run and perhaps culminates into lack of counseling a key component in adherence.

In this study, none of the respondents reported to have been addressed as HIV positive in the presence of other people which indicated that the health workers had confidentiality encouraging the clients to come back for their refill treatment and hence adherence to ART. This correlates with a study finding by Dapaah and Kodjo, 2016which showed that health workers are central in maintaining confidentiality in the provision of HIV services including routine counseling

and testing as well as initiation of patient on ART therapy.

The majority,96 (80%) of the respondents reported having spent less than an hour at the facility and therefore less waiting time which also promoted adherence to ART as patients had no trouble coming back for refills since they knew they would spend little time at the hospital. In contrast to a similar study carried out in Uganda by Nasuuna et al, 2018 in their study of Low HIV viral suppression rates following the intensive adherence counseling program for children and adolescents with viral failure in public health facilities, it was reported that patients who had to wait for more than three hours before they were served with drugs were less likely to come back for the next appointment thus poor adherence.

6. Conclusions

This study was carried out to assess factors affecting adherence to ART among HIV-infected adolescents attending the ART clinic at Kajjansi health center IV. It involved 69 males and 51 female's majority being between the ages of 15 to 19 years and had attained a secondary level of education. The majority had been on ART for 2 to 4 years and had been stable since the initiation of ART. The biggest proportion had ever missed taking drugs for reasons like having side effects of the ARVs, feeling better, and forgetfulness. The majority had disclosed to relatives about their HIV status and were also in boarding school. Almost half of the respondents had both or one of the parents dead where HIV was the cause of death for the majority. The biggest percentage did not know about their caregivers' HIV status and the majority had been reminded by the caregiver to take their pills. The largest portion of the respondents reported having a good relationship with the health workers and spending a few hours waiting for pills at the facility.

Therefore, patient-related factors like level of education, forgetfulness, side effects of drugs, disclosure about HIV status, discrimination, and being in boarding school was greatly affiliated with ART adherence among adolescents.

Caregiver-related factors like staying with biological parents, forgetfulness, poverty, and the HIV status of the caregiver also were positively associated with ART adherence.

Health worker-related factors like relationships with the clients, maintaining confidentiality, and inadequate staffing was also associated with ART adherence.

7. Study limitations

The anticipated limitation was unwillingness to participate in the study due to the participants' cooperation in revealing information required for the study, language barrier arouses as well as inadequate funds to carry out the research.

8. Recommendations

8.1. To the Ministry of Health

The Ministry of Health should increase sensitization on ART adherence through different media like radio, television, and newspapers by creating stories or skits to enlighten people on the dangers of defaulting to ART.

The Ministry of Health should increase support to HIV services providers, through improved budget allocations to make HIV services accessible and affordable to all. This can be done through outreaches which will enable clients to access the services without any costs incurred.

8.1.1. To the staff of Kajjansi Health Center IV.

The health workers should health educate all adolescents on ART on how to adhere to treatment through counselling on every visit. This would help instill hope and confidence into them to take the drugs regularly and timely.

The health workers should orient their clients to other public facilities within their catchment area so that clients have an option for alternative access to HIV care in the event of financial constraints.

8.1.2. To the HIV-positive adolescents

Reminders should be used so that adolescents always know when to take their drugs and when to refill them.

Adolescents should always seek medical advice from their health care providers not only when the side effects of ART arise but also when they feel better, and not simply stop taking their pills as poor adherence may result in treatment failure and perhaps death.

9. List Of Abbreviations.

AIDS: Acquired Immune Deficiency Syndrome
ART: Antiretroviral Therapy
ARV: Antiretroviral
CD4: Cluster Differentiation 4
HIV: Human Immune-deficiency Virus
TASO: The AIDS Support Organization
WHO: World Health Organization
MoH: Ministry of Health
UNAIDS: Joint United Nations Program on HIV/AIDS
UNICEF: United Nations Children's Fund

10. Publisher details

Publisher: Student's Journal of Health Research (SJHR)
(ISSN 2709-9997) Online
Category: Non-Governmental & Non-profit Organization
Email: studentsjournal2020@gmail.com
WhatsApp: +256775434261
Location: Wisdom Centre, P.O.BOX. 148, Uganda, East Africa.

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