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Factors influencing adherence to antiretroviral therapy among youth aged 15-35yrs accessing health care from Ober health center IV, lira city

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Abstract: The global Adherence rates ranges from 28.3 to 69.8% which indicated poor Adherence to ART among youth. In Uganda, a recent systematic review and met analysis about Adherence to ART among Youths 12 to 35 years reported only 62.3% to have good Adherence, which is far below the global targets. Low adherence has been recorded in Kenya among youth's disclosure and stigmatization, pill burden, medication fatigue, lack of planning when travelling, and using Adherence as leverage in conflicts. The purpose of this study was to investigate factors influencing adherence to anti-retroviral therapy among youth age (15-35 years) accessing health care from Ober health center IV in Lira city west division. The study employed a descriptive cross-sectional design using the quantitative data collection tools. The data was analyzed using SPSS version 20 at univarite and bi-variate using chi-square test at 95% confident interval. The study found out that the level of Adherence to ART among youth aged (15-35 years) accessing health care from Ober health center IV was low. This was evidenced by only 23% of the participants achieved 95% adherence and 77% of the study participants were found making below 95% adherence records. On the issues of factors influencing adherence to ART, both qualitative and quantitative findings revealed that factors such as fear, lack of adolescent friendly services, stigma and discrimination, distance to the health facility, cultural believes, peer pressure and negligence among youth were influencing adherence to ART. In conclusion, the level of Adherence to anti-retroviral therapy was very low and numerous factors both at the community and health facility were found to be influencing adherence to ART among youths. Therefore, provision of youth-friendly services at the facility and community based approaches is the priority in promoting adherence to ART among youth.

Keywords: Adherence, Antiretroviral therapy, Adolescents.

1. Introduction

Since HIV emergence in the 1980s, Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome (AIDS) has become a major health problem in many Countries in the world [2]. According to the UNIADS report in 2014, the biggest burden of HIV/AIDS lies in Low- and

middle-income Countries where there are limited resources to manage the pandemic coupled with small physician to patient ratios [10] According to the World Health Organization (WHO) report in 2018, 25.7 million people were living with HIV Worldwide [22]. According to the UNAIDS report in 2015, 250000 new infections occurred among Adolescents globally, out of which 65% occurred among girls (UNAIDS, 2015).The statistics show that the global Adherence rates ranging from 28.3 to 69.8% which indicated poor Adherence to ART.

In Uganda, 3.4 million of Youths aged 15-35 years were living with HIV and 64000 new infections occurred in 2014. In 2016, 55,000 Adolescents between the ages of 10-19 had died through AIDS-related causes [2]. The introduction of Anti-retroviral Therapy to people living with HIV (PLHIV) brought dramatic changes in terms of reducing new infections and deaths related to HIV [10] The World Health Organization (WHO) introduced the test and treat policy that saw a significance increase in the number of people on ART from 17.2 million in 2015 to 21.7 million in 2019 [10]. As of 2018, 84% of low- and middle-income Countries, and all of the UNAIDS Fast-Track Countries, had adopted a test and treat policy [10]. With all this progress registered, Adherence to ART has increasingly become a big problem and likely to deter efforts in achieving global targets like 95-95-95[4]. Treatment Adherence is one of the strongest predictors of virology failure, development of drug resistance, disease progression and death [17]. Adherence is defined as a patient's ability to follow restrictions regarding food and other medications [12]. Poor Adherence to combination Antiretroviral Therapy (CART) is common in both developing and developed nations.

A rent report by WHO in 2018 reported alarming levels of poor Adherence to ART among the Youths in the Sub-Saharan region [22]. A recent systematic review and met analysis about Adherence to ART among Youths 12 to 35 years reported only 62.3% to have good Adherence, which is far below the global targets [8]. A related qualitative Study conducted in Kenya reported the low level of Adherence to the need for secrecy to avoid inadvertent disclosure and stigmatization, pill burden, medication fatigue, lack of planning when travelling, and using Adherence as leverage in conflicts [1][2] The Ministry of Health Uganda together with implementing partners through programs like PEPFAR have put several interventions to address the non-Adherence challenge and achieve optimal treatment outcomes of PLWHIV. These interventions have been in improving data utilization, surveillance, barriers to Adherence among this population [8]. There is health education conducted by some non-governmental organization, training of peers educators on Adherence to HAART in order to increase access and utilization of Antiretroviral drugs but the statistic show that 40% to 60% of Adolescents (USAID, 2017).

Despite the availability of effective treatment, Adolescent-specific services are rarely available and often healthcare providers have little experience of providing services for young people. They have judgmental attitude on those who are sexually active. A failure to follow good practice and provide age-appropriate care in this area has resulted in poor rates of retention among adolescents compared to other age groups. The prevalence of HIV among a

Adolescents aged is still high (15 -19 years is 3.2% in female and 1.9% in male. Still, the level of Adherence to ART among Youths has remained low. Opio in his study in Lira district in 2017 reported distance to health facility, drug stock out, forgetfulness, lack of food and lack of partner support as the predictors to non-Adherence to ART, however, this study was conducted among the adult population [11]. Another study in Southern western Uganda about the role of family in ART Adherence reported low levels of Adherence to ART among Adolescents at on 66% and highlighted care-giver communication and family cohesion as the predictors [6][5]. The

recommended optimal Adherence level for ART to be effective is above 95 percent [13]. However, there is limited information documented on the levels of ART Adherence among the Youths in resource-poor settings especially in Lira City.

2. Methodology

Study design

The study design was a cross-sectional study employing both quantitative and qualitative methods of data collection and analysis.

Study area

The study was conducted in Ober Health Center IV, located in Lira city west division, Northern Uganda.

Study population and sample size

The study was conducted among 95 youths (15-35 years). The sample size was calculated using Keish and Leslie formula of 1965.

Sampling technique

The researcher employed a simple random sampling while selecting youths and purposive for key informants .

Data collection methods and instruments: Data was collected using closed ended questionnaires and interview guide for Key-informants interview.

Quality control (Validity and reliability)

Piloting was done to enable the researcher to re-design the research instruments to improve the reliability and the validity of data.

The questionnaire was designed and pretested to reduce on ambiguity of some of its questions before it was used in actual data collection.

*Source of data***:** Data was collected directly from the study participants.

Ethical consideration: The researcher ensure ethics through confidentiality, seeking for consent from participants and other authorities. Privacy was also assured during the study.

*Data analysis***:** For Quantitative data, after checking the data for completeness, it was coded and fed into Statistical Package for Social Sciences (SPSS) version 23 for analysis. Simple frequencies and proportions was used to describe the socio-demographic, home based and facility related characteristics of the respondents and Chi-square test was used to test the relationship between place of delivery and the explanatory variables. Thematic content analysis was conducted for qualitative data first by familiarization, coding, theme generation, review of themes, defining themes and finally writing up.

3. Results

3.1. Socio-demographic characteristics of the respondents

As manifested in the study, majority were female 67(73.6%) and respondents of age group 26-30 years dominated the study 42(46.2%). Most of the study participants were married 47(51.6%),

respondents who attained primary level of education dominated the study and 78(85.7%) of them reported that they reside in Urban area. Finally, the highest percentage of the respondents were Catholics as 43 (47.3%) as presented in the table 1 below.

Table 1. Demographic characteristics of the respondents.

Variable	Freq (91)	Percent (100%)
Gender		
Male	24	26.4
Female	67	73.6
What is your age		
15-20	07	7.7
21-25	27	29.7
26-30	42	46.2
31-35	15	16.5
Marital status		
Singled	19	20.9
Married	47	51.6
Separated	23	25.3
Widowed	02	2.2
Level of Education		
No formal education	08	8.8
Primary	53	58.2
Secondary	24	26.4
Tertiary	06	6.6
Occupation		
Civil servant	4	4.4
Business	17	18.7
Subsistence farming	35	37.4
Others	36	39.6
Place of residence		
Urban	78	85.7
Rural	13	14.3
Number of family members		
Less than 3 people	31	34.1
4-5 people	44	48.4
6-8 people	14	15.4
More than 8 people	2	2.2
Religion		

Catholic	43	47.3
Protestant	39	42.9
Born again Christian	09	9.9

Data source: primary data (2022).

3.2. Level of Adherence to ART among Youth aged (15-24 years) in Ober Health Center IV

General assessment of Adherence to ART among youth (15-24 years):

This was objective one of the study. It was to determine the level of adherence to ART among youth aged 15–35 years. Both qualitative and quantitative methods were used to gather information from youths. The qualitative findings revealed that youth adherence to anti-retroviral therapy was low because most of them missed appointments, they feared stigma and discrimination, they even missed drugs from home, they were not taking drugs as prescribed, and they were not open to adults about their status. It was revealed by key informants that the level of adhesion among youths in Ober Health Center IV was poor, as reported below.

> *Most young people are afraid of taking ARV because they are constantly ashamed, and the most difficult situation is when they are in love but do not tell their loved one. I always encourage them to take their medicine well and avoid fear "(KII, Clinical Officer, Ober Health Center IV, Lira City, and June 2022 in his office).*

> *Another respondent reported, " In this health facility, non-suppression is from youths because they don't follow recommendations from clinicians, they are in a high-risk age group, they are not open to other people, they are handled by adults, not youths, and this makes it difficult for them to make a 95% adherence record" (KII, Counsellor Ober Health Center IV in Lira City, June 2022 in the facility).*

> *Another respondent also reported that "In our health facility, we always provide ART services four times a month, but poor adherence record is very common among youths. Most of the youths are not open to the elderly and they miss drugs at their own will "(KII, Nurse in Ober Health Center IV, Lira City, and June 2022 at the health facility).*

The quantitative findings of this study revealed that the level of adherence among youth aged 15-35 years was poor, with only 23% of study participants achieving an adherence level above 95% and 77% falling below 95%, as recommended by the World Health Organization. The majority of the study participants reported that they started taking ARV immediately upon being confirmed HIV positive. 68(74.7%), 41(45.1%) accounted for those who have taken more than two years on ART, and lastly, most of the study participants reported missing ART in the past month, as shown in the table below.

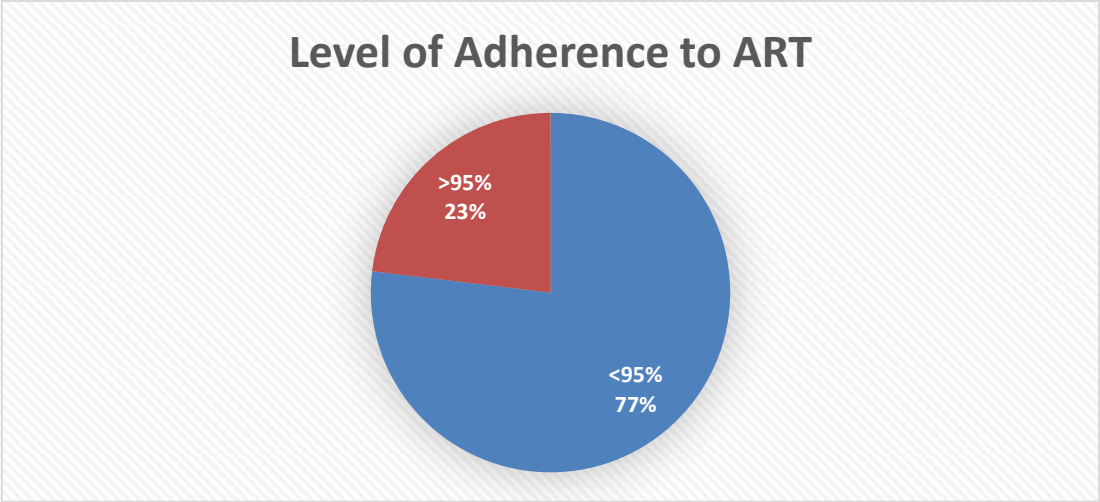
Table 2. Descriptive statistics on Adherence among youth aged (15-35 years).

Variable	Frequent (91)	Percent (100%)
Did you start taking ARV moment you knew your status		
Yes	68	74.7
No	23	25.3
If yes, how long have you been on drugs		

Less than 6 months	5	5.5
6 months – 1year	16	17.6
1-2 years	29	31.9
Over 2 years	41	45.1
In the last one month, have you ever missed ARV		
Yes	51	56.0
No	40	44.0
In the last one month, have you ever missed taking ARV		
Yes	59	64.8
No	31	34.1

Level of Adherence to ART among Youth aged (15-24 years) in Ober HC IV:

Figure 1. level of Adherence to ART at a scale of 95%.



3.3. Health System Factors Influencing Adherence to ART among youth aged 15-24 years

On the health system factors, the qualitative findings reveal that lack of youth-friendly services, stigma and discrimination at the health facility, lack of follow up, lack of adherence counselling, shortages of drugs at the facility, and lack of privacy were factors influencing adherence to ART among youth aged 15–35 years accessing health care from Ober health center IV. As reported by one of the study participants during the key-informant interview.

> *"We are having a lot of challenges in providing HIV services to the youth since they are supposed to be handled by fellow youths "This could be one of the strong reasons for non-adherence among youths since they may fear disclosing their status to adults." (KII, Clinical Officer, Ober Health Center IV in June 2022)*

In regard to quantitative data on the health system factors, a number of questions were asked and it was found out that 72(79.1%) of the study participants reported that they always get routine health education and adherence counselling, while 56(61.5%) of them reported that they were not near a health facility. In addition to that, 89(97.8%) cited that they always find ARV available in the

health facility and the highest number of participants reported waiting hours during drug refill at the health facility to be ranging from 1-3 hours, as in Table 3 below.

Table 3. Health system factors influencing Adherence to ART

Variable	Frequent (91)	Percent (100%)
Do you get routine health education and counselling about ART adherence		
Yes	72	79.1
No	19	20.9
Is there any nearby health facility from which you pick ARV		
Yes	25	38.5
No	56	61.5
How far is the health facility from home		
Less than 5km	57	62.6
5-10 Km	31	34.1
More than 10 Km	3	3.3
Do you always find ARV at the facility		
Yes	89	97.8
No	2	2.2
Are there health care workers always available		
Yes	90	98.9
No	1	1.1
What is the waiting time on the appointment day		
Up to one hour	3	3.3
1-3 hours	47	51.6
4-5 hours	35	38.5
More than 5 hours	6	6.6

Relationship between the Adherence and Health System Factors.

As manifested in the table 5 below, the chi-square test conducted revealed that nearby health facility providing ARV (p-value 0.013, CI 0.013-0.00303) and distance to the health facility (p-value 0.039, CI 0.00-0.052) were found to be significantly associated with Adherence to ART among youth aged 15-35 years as in Table 4 below.

Table 4. Relationship between Health system factors and Adherence.

Variable	Adherence to ART		X^2	P-value	95% CI (Lowe-upper)
	<95%	>95%			
Do you get routine health education					

Yes	16(22.2%)	56(77.8%)	0.14	0.706	0.670-0.847
No	5(26.3%)	14(73.7%)			
Is there any nearby health facility from which you pick ARV					
Yes	11(31.4%)	24(68.6%)	12.2	0.013*	0.013-0.0305
No	10(17.9%)	46(82.1%)			
How far is the health facility from home					
Less than 5km	15(26.3%)	42(73.7%)	5.35	0.039*	0.00-0.052
5-10 Km	4(12.9%)	27(87.1%)			
More than 10 Km	2(66.7%)	1(33.3%)			
Do you always find ARV at the facility					
Yes	21(23.6%)	68(76.4%)	0.61	0.433	0.31-1.00
No	0	2(100%)			

Note: CI Confident interval; * Significance at 0.05 p-value .

3.4. Socio-cultural factors influencing Adherence to ART among Youth aged (15-24 years)

To determine socio-cultural factors influencing adherence to ART, both qualitative and qualitative data was collection. Qualitatively, the study findings revealed some of the socio-cultural factors such as family supports, stigma and discrimination, cultural believes and religious believe as factors influencing adherence to ART among adolescents. As reported by one of the study participant.

> *"Youths always forget about taking of medication because of fear of being stigmatized and discriminated by their fellow community members and their families" (KII, Nurse reported during Key-informant interview on June 2022 at Ober health Center IV).*

> *Another respondent reported "Youths are not open about their HIV positive status and what making them abandoning ARV. They don't follow recommendations given by clinicians on how they should take medication and avoid sexual intercourse" (KII, certified Village Health team in Ober Health center, on June 2022).*

As manifested in the quantitative study, 60(65.9%) of the study participants reported that they families always offer for them support in regard to ART, 88(97.8%) accounted for those who cited that their culture valued ART. Most of them does not believe that their health can be better while on ART and finally 57.1% of the respondents reported that they friends or relative influence positive on ART adherence as in the table below.

Table 5. Socio-cultural factors influencing ART adherence.

Variable	Frequent (91)	Percent (100%)
Does your family offer to you adequate support to access		

ART		
Yes	60	65.9
No	31	34.1
Does your cultural value acknowledge ART		
Yes	88	97.8
No	2	2.2
Do you believed that your health can be better while on ART		
Yes	6	6.6
No	85	93.4
Do your family or friend influence when to take medication		
Yes	52	57.1
No	39	42.9

Relationship between socio-cultural factors as Level of Adherence to ART.

In regard to the socio-cultural factors, it was revealed that believe about HIV and ART (p-value 0.012, CI 0.002-0.038) was significantly associated with Adherence to ART among youth age (15-35 years) getting services from Ober Health center as in the table 6 below.

Table 6. Relationship between socio-cultural factors and Adherence to ART.

Variable	Adherence to ART		X^2	P-value	95% CI (Lowe-upper)
	<95%	>95%			
Does your family give you adequate support					
Yes	13(21.7%)	47(78.3%)	0.19	0.657	0.84-0.962
No	08(25.8%)	23(74.2)			
Does your culture acknowledge ART					
Yes	21(23.9%)	67(76.1%)	0.62	0.430	0.968-1.000
No	0.0	2(100%)			
Do you believe that you can be healthy on ART					
Yes	2(3.33%)	4(66.7%)	13.7	0.012	0.002-0.038
No	19(22.4%)	66(77.6%)			

Note: CI Confident interval; * Significance at 0.05 p-value.

4. Discussion of results

4.1. Level of Adherence to ART among Youth aged (15-24 years) in Ober HC IV, Lira city

Based on this study objective, both qualitative and quantitative findings revealed that the level of adherence to antiretroviral therapy among youth aged (15–35 years) accessing services from Ober Health center IV in Lira city west division was poor. This was indicated by only 23% of the study participants archiving a 95% adherence level, and 77% were below 95%, as recommended by the World Health Organization. This finding shows that youths are not following guidelines given to them by medical workers on how to take medication appropriately so that they remain healthy and free from other opportunistic infections. In addition to that, the rate of missing drugs was highly reported by 64.8% of the study participants, and 56.0% cited missing medicine in the month before data collection. This gives clear evidence of the adherence level since it is always calculated based on the number of pills missed by an individual.

This finding is in line with a study conducted on adherence to ART which shows that few people always achieve 95% adherence records as based on the prescribed doses of ARV [8]. Another similar study conducted in China on self-adherence pointed out that the level of adherence to anti-retroviral therapy among youths is poor historically, based on the fact that most of them are reluctant and ignore recommendations which are always given to them by health professionals [7].

4.2. Factors influencing Adherence to Anti-retroviral therapy among youth age (15-35 years) in Ober health center IV, Lira city west division

Both qualitative and quantitative findings revealed that factors such as it was concluded that factors such as distance to the health facility, cost of transport, cultural belief, fear and stigma, lack of youth confidence, peer pressure, and lack of family support. As in the quantitative data analyzed on health system factors, 72(79.1%) of the study participants reported that they always get routine health education and adherence counseling, 56(61.5%) of them reported that they were not near a health facility, and 89(97.8%) cited that they always find ARV available in the health facility, and the highest number of participants reported waiting hours during drug refill at the health facility to be ranging from 1-3 hours. The bi-variate analysis conducted revealed that the location of the health facility (p-value 0.013, CI 0.013-0.00303) and distance to the health facility (p-value 0.039, CI 0.00-0.052) were positively and significantly associated with adhesion to ART among youths.

This finding is in line with a study conducted among people living with HIV which shows that distance to the health facility, medicine prescription, adolescent-friendly services, medicinal prescription, lack of youth-friendly services and inadequate health facility [22].

On socio-cultural factors, the statistics showed that 60(65.9%) of the study participants reported that their families always offered them support with regard to ART. 88(97.8%) accounted for those who cited that their culture valued ART. Most of them do not believe that their health can be better while on ART. And finally, 57.1% of the respondents reported that their friends or relatives influence their ART adherence positively. The bi-variate data analysis performed confirmed that belief about HIV and ART (p-value 0.012, CI 0.002-0.038) was positively and significantly correlated with adhesion to ART. This was in line with a study conducted by Biadgilign, Deribew, Amberbir, Deribe & SAHARA (2012) which revealed that lack of family support, negative attitude, traditional beliefs, lack of community support, fear of stigma and discrimination, and the attitude of people influenced the level of adherence to ART among youths. In addition to that, the

combination of difficulty of accessing a hospital and an unhelpful family can negatively affect adherence, whereas family support enhances adherence [3].

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