

ORIGINAL ARTICLE

Psychosocial Support Systems for Adolescents on Antiretroviral Therapy in Rural Western Kenya

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Abstract

Initiation of antiretroviral therapy (ART) was a major milestone in the care and management of HIV; however, adolescents who are living with HIV (ALHIV), and who are on ART still show a 50% increase in deaths due to sub-optimal adherence. Despite reduced therapeutic options and higher risk of repeated treatment failure, there was a dearth of information which was focusing on adherence support. This paper was conducted to explore how existing psychosocial support systems promoted adherence among 15-19 years old ALHIV on 2nd-line ART. Using focused ethnographic design, data was collected from 37 ALHIV enrolled in the sampled patient support centers. Data was collected by using semi-structured interviews, direct observation, 10 in-depth and 13 key informant interviews and 3 focus group discussions. Social ecological theory was used to explore the interplay between available resources, health habits and life-styles of the respondents. Data from semi-structured interviews were cross-tabulated to identify appropriate relationships. Qualitative data were exposed to thematic analysis, and they were presented using descriptions and verbatim quotations. According to the findings of the study, psychosocial support systems were essential in promoting adherence among ALHIV. The researchers recommended that treatment guidelines and intervention strategies should recognize the central role of psychosocial support from families, and from the healthcare setting, and it promotes their participation in care and management of HIV among ALHIV.

Keywords: Adolescents; Antiretroviral therapy; Support; Reminder tools; Adherence

Introduction

Adolescents (10-19 years) old continue to be disproportionately affected by HIV and AIDS as they transit into their adulthood (WHO, 2016). It is estimated that there are 133,455 adolescents who are living with HIV in Kenya. There are also 18,004 new infections and 2,797 deaths among adolescents who are 10-19 years old annually (NASCOP, 2022). Adherence support for adolescents is necessary to sustain treatment, reduce instances of HIV drug resistance (HIVDR), and to promote the achievement of global targets of 90-90-90 for treatment by 2020 and eliminating AIDS as a public health threat by 2030

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(UNAIDS,2017). In addition, ALHIV on second-line regimen have already resisted the first line regimen, and it, therefore, has reduced therapeutic options since third line is not locally available in this resource-limited context where victims live. Psychosocial support addresses the ongoing emotional, social and spiritual concerns of both ALHIV and their caregivers. Psychosocial interventions have been shown to promote ART adherence among people who are living with HIV in various contexts. According to Rajesh, et al., (2014) there was a strong association between the use of reminder tools and ART adherence. Therefore, there is a need for further research into the contribution of these factors to adherence as poor ART adherence among ALHIV has been persistent over the years, and it is still a major concern. Studies which were conducted on interventions such as Nyoni, et al 2020 and Kasimonje, et al 2021 have focused on adult populations excluding adolescents. Improvement in adherence have been reported with the use of support groups, positive-living workshops and buddy services among other community-based support strategies (Kabore, Bloem and Etheredge, 2010; Kunutsor, et al., 2012). However, there is a dearth of information on whether similar interventions if applied on ALHIV would yield similar results. In addition, other behavioral interventions such as the use of reminder mobile phone text messages (Pop-Eleches, et al., 2011; Mehra, et al 2021) and direct observed treatment (DOTs) (Campbell, et al 2020; Ahonkhai, et al 2021) have also shown positive results with regard to adherence to ART among adults who were living with HIV. However, given the fact that barriers to adherence vary among societies and among age categories; hence, the success of adherence improvement interventions may depend on how well they are adapted to the unique challenges in each society or among specific age categories. A greater percentage of ALHIV in rural contexts may not have access to mobile phones, or they may be in school settings which disallow mobile phones, and it is not known whether they may successfully use mobile phone reminders to increase adherence to ART. On the other hand, Elington et al., (2015) noted that interventions to improve adherence among ALHIV should be targeted both at them, and at their caregivers. However, the efficacy of community-based support strategies may be influenced by disclosure status, and by levels of HIV stigma within the community. High levels of stigma and discrimination for PLHIV has continually been reported in rural communities in western Kenya. It is, thus, not known whether the high levels of stigma may have suppressed emergence and use of community-based initiatives for ALHIV. Furthermore, the context within which most ALHIV find themselves such as school set-ups with resultant time constraints, inadequate knowledge and limited resources may not promote engagement of ALHIV with support groups in instances where the groups exist. In addition, interventions which are health-provider initiated may suffer from the challenges facing the health care system such as lack of adolescent-friendly health centers, limited personnel, long distances to the health facility and transport costs among others (Owuondo, 2015). The study used the Social Ecological Perspective (SEP) which recognizes that whereas individuals are responsible for instituting and maintaining lifestyle changes which are necessary to reduce risk, and to improve health, individual behavior is influenced by factors at different levels and thus gives greater attention to the social, institutional and cultural contexts of

people-environment relations (Campbell, et al 2020). This study sought to explore the various psychosocial support systems which ALHIV had, and how these systems promote medication adherence in a rural context.

Materials and Methods

This study was part of a larger doctoral research work that used focused ethnographic research design coupled with a mixed methods approach to conduct fieldwork for a period of one year. The study was carried out in Gem sub-County which has been categorized as a highly endemic zone. It is part of KEMRI/CDC Health and Demographic Surveillance Area (HDSA) which provides comprehensive population based data on a variety of health indicators, population knowledge and population beliefs both at the individual and household levels (Odhiambo, et al., 2012). The researcher used an inclusion-exclusion criterion which included: age (15-19) on 2nd line ART for at least 6 months in an area where there are resident of the study that is willing to participate. A sample of 6 patient support centers (PSC) were selected and all those who enrolled ALHIV (37) both male and female who met the criteria to participate in the study. The researcher visited the PSCs on the clinical dates to meet and possibly to incorporate ALHIV to the study. Most of the ALHIV were accompanied by their caregivers for clinical visits. Informed consent from both older ALHIV and their caregivers were sought at this point. In the same way, younger ALHIV also assented to participate. The study also included caregivers of ALHIV as well as key informants. The unit of analysis was ALHIV on second-line ART. Semi-structured interviews were conducted to 37 ALHIV. This data gathering tool was translated into the local language (Dholuo) to ensure that respondents could understand the questions. Thirteen key informants were purposively selected based on their knowledge of ART adherence related issues, and based on their regular interactions at the PSC with respondents. These included six adherence counselors and six peer educators. Key informant interviews were conducted using a key informant interview guide. The interviews lasted for about 30-40 minutes, and they were prepared in both English and Dholuo and they were audio recorded.

The study used an in-depth interview guide to ten (7 male and 3 female) ALHIV who were purposively selected to obtain detailed information on the topic of study. Similarly, the study also used in-depth interview guide to conduct interviews to caregivers. It also included ten (8 female and 2male) caregivers who were selected purposively to understand the intricacies of caregiving. All the in-depth interviews were conducted in the homes of the respondents as had been requested by the respondents in the initiation phase. Homes promoted confidentiality and privacy as HIV positive status in most cases was a family secret. The researcher assigned a community health promoter (CHP) as a research assistant. CHPs work together with the PSCs promote privacy since they deal with several health-related issues in the community not just with HIV.

Furthermore, focus group discussions (FGDs) were used to get more insight into the themes which were arose during the administration of the other instruments of data collection. The study conducted an FGD with 8 male and 8 female respondents. The FGDs were conducted within the PSC to ensure privacy and to ensure that discussants did not feel exposed to other members of the community most of whom were not aware of the discussants' ART status. The dates for conducting the FGDs also were the same with clinical visits for most of the respondents to avoid unnecessary inconveniences. Both FGDs were conducted in the morning times between 10:30 a.m. and 12:30 p.m. immediately after they had finished the process of pill refill or other clinical engagements. The third FGD was conducted to 8 caregivers. This FGD was conducted in the afternoon from 2:00 p.m. to 4:00 p.m. since during its preparation, the caregivers intimated that they were engaged in other activities in the morning hours and would be mostly available in the afternoon. It was also conducted within the PSC to ensure privacy. The researcher moderated the discussions while a research assistant took fair notes. The discussions were also recorded in audio recorder. The study used two FGD guides one with respondents and another with caregivers.

Data Analysis and Presentation

Data interpretation began while the field work was in progress. The researcher reflected on the information that had been gathered in every research phase, and he noted emerging themes and how these shaped the course of research. Once the fieldwork was completed, data which were collected from semi-structured interviews were cross-tabulated to identify appropriate relationships. Transcription, translation and coding of audio voice recorded data which were obtained from in-depth interviews and FGDs followed. The process led to emerging themes and patterns that the researcher used to establish explanations and deductions. Quantitative data were presented using tables that offered frequencies and percentages as well as relationships between different variables and adherence to ART. On the other hand, qualitative data were presented using descriptive reports and verbatim quotations.

Ethical Considerations

The study was approved by Maseno University Ethics and Review Committee, and permission was taken from Centre for Health Solutions (CHS) as it has a supervisory role over all the public PSCs in Gem Sub-County. The researcher also sought permission from the PSC in-charge of the 6 sampled PSCs for the study. Similarly, he got written informed consent from caregivers who accompanied the ALHIV to the PSC and assent from ALHIV. This was done after explaining the objective of the study to both the caregivers and the ALHIV in details. The study inflicted no physically harm on the respondents, and it was handled by counseling experts about the little psychological distress that was experienced by a few of the respondents. The study however, ensured comfort, confidentiality and

privacy of the data collection methods as well as providing logistical support to study participants to and from the PSC in the process of conducting the research. Study participants were assured that their responses would not be shared with anyone in a way that would breach their privacy though they were informed that the data would be stored in the clouds for a period of ten years before being discarded.

RESULTS

Theme 1: Family and Community-based Psychosocial Support Systems which Promote Adherence to ART

Sub-theme 1: Reminder tools

Adolescents who are living with HIV, just like their age-mates depend on familial and community networks for emotional support in times of need. When asked how their families helped them with their adherence to ART, most respondents mentioned that they are being reminded that it was time to take drugs. All ALHIV who were respondents of in-depth interviews, reported that they were being reminded to take their drugs.

Table 1: Family-based Psychosocial Support Promoting Adherence to ART

	Frequency	Percent
Am not given a lot of work	3	8.1
I eat well	7	19.0
My family reminds me time to take drugs	22	59.4
No one is concerned	5	13.5
Total	37	100.0

One of the ALHIV said:

Once we have just eaten, my mother says that ‘now that you have eaten and you are full, it is time for drugs.’ She makes sure that I take the drugs while she is watching to be sure that I have actually taken them (IDI with a female ALHIV).

It was also unanimously reported during the FGDs that both for ALHIV and their caregivers that family members especially those who are within the same household ensured that they reminded ALHIV to take their drugs. This was achieved by using different types of reminder tools which included: alarms set on either phones of ALHIV or caregivers, alarms on wrist watches and specific times for radio news were used to signify time for taking drugs. In addition, verbal reminders which were from siblings and caregivers were used. There were, however, 6 ALHIV who did not report that they have neither any form of a reminder tool nor did they have any one who reminds them to take their drugs within the households with whom they lived.

Table 2: Reminder Tools for Adherence to ART

Reminder Tools	Frequency	Percent
Alarm on ALHIV phone	6	16.2
Alarm on caregiver phone	13	35.2
None	6	16.2
Radio news	6	16.2
Sibling	3	8.1
Verbally by caregiver	2	5.4
Wrist watch	1	2.7
Total	37	100.0

Sub-theme 2: Sufficient quality food

Caregivers were also keen to avoid food staffs which would counter the effectiveness of the ARVs. While conducting in-depth interviews with caregivers, only 1(male caregiver) out of 10 reported that he/she has problems providing with the nutritional needs of the ALHIV who was under his care. For example, one female caregiver of a male ALHIV narrated that:

I stopped cooking food with *saumu* since I was told while we were still staying in Nairobi that it reduces the strength of ARVs. I also ensure that there is good food and tea is always available in the thermos flask because he gets hungry most of the time. You know, even when we go to the farm, I allow him to go back home early. I also do not give him strenuous work; we were told that they have little energy. Like when they go to the river to fetch water, my son who is his age mate does four trips while he only two (IDI with a caregiver).

Similarly, another female caregiver of a male ALHIV reported that:

I have to ensure that he eats well, and I give him much as compared to my other grandchildren like when I cook eggs, we have been told *ni ok gichiem size wa, gichiemo mang'eny* (they do not eat our size, they eat a lot). *Kata gima imadho go chaye amiye maber* (I give him very good 'escort' for his tea) to ensure he is healthy to avoid him being weak (FGD: female caregiver)

In addition, one male ALHIV said that even when he goes to school, he still eats well. He continued to narrate it like this:

In school, those of us who are on different types of medications do not queue for meals; we have special plates that when the cook sees, he gives us more food. In class, we are also not assigned strenuous duties, for example when the class has been punished to slash the compound, we are exempted (IDI with a male ALHIV).

Sub-theme 3: Emotional Support

With regards to emotional concerns, the study sought to find out who among their family members the ALHIV confided in whenever they had emotional issues and why they chose that particular family member(s). The data analysis results indicated that among ALHIV whose both parents were alive; mother was the one they confided in as opposed to father. This finding was true even for male ALHIV. The reasons given by ALHIV were that mothers were freer than fathers, they were close, and they were more intimate to understand as compared to fathers. ALHIV were also most likely to confide in whoever disclosed their HIV status to them whether it was directly done or indirectly assisted by the healthcare provider. After HIV disclosure, the caregivers turned into treatment supporters (TS) for the ALHIV as they initiated ART.

In addition, there were instances where ALHIV reported that they did not have a choice but to confide in whomever they lived with because these are the people who took care of their needs. However, ALHIV reiterated that in such instances, they did not feel free to discuss some of their concerns with such family members because of the age difference and as a result they opted to confide in their friends. One male ALHIV said:

I have a friend, who is in grade seven whom I considered as myself, and he is also my neighbor, but he is in a different school. In most of the cases, he is the one I share with my issues; I am planning to convince my grandmother to transfer me to his school so that we can have more time together (IDI male ALHIV).

On the contrary, there were five ALHIV who reported that no one was concerned with their ART adherence-related activities. The data analysis revealed that these five ALHIV were among the six who reported that they have no reminder tool, and they were also among those who exhibited poor adherence. This indicated that inadequate caregiver support was a contributing factor in poor adherence among ALHIV. The researcher met one male ALHIV who was out of school, and who had a different experience with regards to family support. He reported during the in-depth interview that he just kept his privacies to himself since no one liked him to give a concern since he was born out of wedlock, and later his mother got married and took him along. When asked why he did not confide in his mother, he said:

My mother took an inheritor after her husband died, and now they are too busy to give attention. They do not even see that I am around. In fact, I want to leave may be looking for work in someone's homestead even as a herds boy to get out of her way (IDI male ALHIV).

Sub-theme 4: Community-based Support Groups

The study sought to find out whether there were any support groups for ALHIV within their community. All ALHIV reported that there were none. The major reason given for lack of support groups within the communities was fear of stigma and discrimination. It

was reported that older PLHIV were not free to disclose their own status. As a result, it was difficult for ALHIV to do the same. This sentiment was also eluded during an FGD with caregivers of ALHIV. One female caregiver reported that having a support group would expose the status of the ALHIV to the community, and she did not see the reason why that should be so because even adults had hidden their status to the public. Similarly, one female ALHIV reiterated during the FGD that:

Once people know you take drugs, you become the topic of gossip whenever you pass especially if you go to the market in the evening and once those market women see you, they will just talk about you. Even sometimes they laugh as you pass, and this is very frustrating (Female ALHIV: FGD discussant).

Yet another male ALHIV during the FGD reported that *people see them as unclean, and they reject them.*

Theme 2: Health Care Provider-based Psychosocial Support Systems which Promote Adherence to ART

Sub-theme 1: Pill Refill

Every ALHIV who is on ART is required to be enrolled in a PSC to facilitate HIV care and management. According to one key informant, all ALHIV are advised to consider reporting to their respective PSCs first whenever they had any ailments before seeking treatment elsewhere. Apart from pill (ARVs) refill, the study sought to establish psychosocial support to ALHIV who have accessed to the PSC.

Apart from pill refill, most ALHIV reported a series of teachings on how they should take care of themselves especially in relation to ensuring that they took their drugs as prescribed. Similarly, some ALHIV also reported that they should be given nutritional support in the form of milk, bread and flour for porridge. Caregivers of ALHIV also reported that attending teaching sessions at the PSC where they discussed how to support those under their care was very important. During a key informant interview, it was confirmed that the PSC organized sensitization sessions for caregivers of ALHIV although the key informant was quick to reiterate that there were difficult caregivers who never attended such sessions always claiming that they were held-up in one place or another. During key informant interviews, it was reported that:

Most issues are fear and self-stigmatization. It is more helpful when caregiver is free with her status as it promotes acceptance, and it helps the ALHIV to fight stigma which comes from peers. Some caregivers are very difficult, and this also affects the ALHIV (KII adherence counselor).

Sub-theme 2: The Operation Triple Zero (OTZ) support group

When asked whether there were support groups at the PSC, all ALHIV reported in the affirmative. However, there was no support group which was initiated by ALHIV themselves. At the time of conducting this research, the only form of psychosocial support evident in all the sampled PSCs was provided through the OTZ campaign which is held once every month. This is what ALHIV referred to as a support group. It had three main objectives that embodied the PSCs goals in relation to optimal adherence among ALHIV. OTZ stands for zero new infections, zero missed appointments and zero deaths. It has also been customized to mean zero missed drugs, and zero viral load in order to motivate ALHIV to adhere to their ART. It is through the funding of OTZ campaigns that ALHIV received milk (500 ml) and bread/biscuits/*mandazi* whenever they meet at the PSC. ALHIV had also been given T-shirts that had CHS logo on it, and it is labeled as 'I am a Hero', 'My ZEROs my LIFE' as part of the efforts which was intended to motivate ALHIV not to miss OTZ campaign sessions. It is also under OTZ campaigns that some ALHIV had been taken to workshops, and to the World AIDS Day celebrations. In its guidelines, however, after age 19, ALHIV has to exit.

The study was also interested in finding out what happened whenever ALHIV met for the OTZ campaign sessions as this was the main forum which was used by the PSC to offer psychosocial support that would help to promote adherence among ALHIV. After the researcher attended several of such sessions in the sampled PSCs, it was evident that there was some sort of a script that was being followed by the health care providers whenever there was an OTZ session. The OTZ sessions began with gospel songs that reiterated the situation ALHIV had found themselves, and they were geared towards giving/restoring hope in life. For example, songs such as:

Ka an gi Yesu ok ayiengini (×2) [If I have Jesus, I am strong (×2)]

Achalo gi yath motwi e aora [Am like a tree planted by the riverside]

Ok ayiengini [I am strong]

These lines of songs were sung while clapping hands and dancing which indicated and promote happiness among ALHIV. The songs were meant to instill hope that there is God in heaven who did not just empathize with their situations, but who is indeed doing something good about those situations. After singing, prayers followed with each ALHIV being encouraged to pray for themselves, and to tell God their desires. The sessions then followed with discussions that exposed viral load (VL) test results of ALHIV that had good adherence that is those who were with least VL. They were clapped for, and they were used as examples to encourage others who were with high VL to improve their adherence. It is during these sessions that the researcher witnessed how emotionally affected ALHIV became when the key informant took stock of the progress of the year. He mentioned that three among ALHIV had passed-by in the course of the year, and the main cause of their

deaths was that not taking their drugs as was instructed. Among the three ALHIV who died, one was died since he stopped taking drugs because he was being denied food by his step-mother with whom he was living with; another was suspected to have committed suicide though he had persistent high VL despite much counseling while the third ALHIV was died since she had stopped taking drugs after her mother passed by and there was no one who was willing to engaged by the PSC to do DOT. Such sessions gave ALHIV moments to reflect on their own lives especially when they bowed for a moment of silence in respect for their fallen age mates, and make necessary adjustments in relation to their ART adherence.

During key informant interviews, one key informant was worried that those ALHIV who had to exit may become lonely, and they may lack social support hence rescind back the gains made while in the group. During an in-depth interview, one male ALHIV who was 19 years old when the study began, and who has to exit because he had turned 20 years by the time the study was winding up shared his fears which were resulting from having to exit OTZ. He narrated: *I have been used to going to the PSC every first Saturday of the month when we meet at OTZ, but now I can no longer go.* He was proposing to become an OTZ champion in order to continue attending the sessions arguing that this would help him to maintain the social networks he had created and continue to enjoy the psychosocial support these sessions offered.

The study sought to establish whether belonging to a support group influenced adherence among ALHIV. Accordingly, the majority of ALHIV reported that being part of the OTZ campaign encouraged them to take their drugs, and it made them feel happy when they saw their fellow ALHIVs doing well too. Other ALHIV reiterated that the OTZ sessions helped them to realize the need to keep time, and to avoid time delaying to take their drugs, and it also gave them an opportunity to visualize the consequences of not taking drugs.

It encourages and motivates me to soldier on despite my status especially when I see my fellow ALHIV who have similar problems like mine and even others who have worse ones

was also a response given by a female ALHIV during an in-depth interview. Another male ALHIV during an FGD reported that such sessions gave them an opportunity to get relevant information concerning their drugs.

There was, however, one particular male ALHIV who was aged 17 years old whom the researcher encountered during one of the OTZ sessions who reported that OTZ sessions had not helped him much, but on probing, he said:

I rarely go because I come from far place, and most of the time, I have no transport fare. At times I just don't have the time. Since I live with my grandmother who is blind, and it is me who has to look for money, and

who has to buy food for us, and also who has to pay for school fee (IDI male ALHIV).

When the researcher inquired why he did not consider going to a PSC near him, he replied that people will know that he takes drugs, and they gossip to him. Even the OTZ T-shirt he was given at the PSC was worn secretly especially while he was away from the PSC to avoid questions on what the writings ('I am a Hero') on the T-shirt meant.

In addition to the OTZ forums as forms of psychosocial support for ALHIV, the researcher also observed charts which were hanged on the walls of the PSC that had information that is related to ART. For example, there was one particular chart that had pictures on how to take drugs well, and at its end, it also said: - 'If not, you become sick.'

Sub-theme 3: Other desired forms of support to promote adherence to ART

The study inquired whether there were any other support mechanisms that the ALHIV would suggest to the PSC in order to promote adherence to ART. The main suggestion ALHIV gave was that *there should be other forms of support, and it should not just advice and information*. For instance, male ALHIV during the FGD said that they needed economic support especially those who were in school and were orphaned. Some were in need of clothes, transport fare whenever they were to go to the PSC either for pill refill, VL tests and OTZ sessions, and that more milk and food also should be incorporated in the support from the health care provider. Similarly, during the FGD with female ALHIV, there was one discussant who had permissive, and who was 'quite reckless' sexual undertones. For instance, when discussing if they had boyfriends or lovers, she said, "I have many lovers, I have no business with boyfriends who have no money to give me, but who just wants my body." The researcher noted, and afterwards he inquired from the key informant the reasons behind such an attitude. Unfortunately, the key informant reported that this female ALHIV had become sexually reckless in a bid to provide for her ailing mother and younger siblings.

She has become a village prostitute, and I am worried that she may not be using condoms because I have never seen her come for some from the hospital, and I am sure that she has no money to buy condoms *was* narrated by one of the key informants. This is a clear indication that other forms of support were necessary for ALHIV to help them in situations where caregivers were not able to continue providing for their needs.

Other suggestions which were proposed by ALHIV included trips to other PSCs to see how their counterparts were doing, and access to relevant books to read concerning their health. Those ALHIV who came from far areas also suggested that the doctors should try to come early so as to finish early which gives them ample time to trek back home. Finally, some ALHIV felt that the PSC should increase seats because whenever there were

many patients at the center, they had to stand for long hours. When asked how these suggestions would promote adherence to ART, a male ALHIV during the FGD reiterated that apart from making them sharp for appointments and avoid delay in taking their drugs, it would encourage those who had stopped taking drugs to start again and thus reduce deaths of ALHIV.

DISCUSSION

It is evident from the presented excerpts that family members especially with whom full disclosure had been done, played a key role in supporting ALHIV with adherence. Caregivers were interested in both the quality of food as well as its quantity in order to ensure maximum growth among ALHIV. Caregivers were cognizant of the fact that ALHIV needed not just to be healthy, but also to 'look healthy' so as not to attract attention of the villagers. This concern accrues from the initial scenarios of people who were ailing from HIV and AIDS as they looked thin and 'sickly' when ART had not been initiated. This study finding is in line with a study conducted in Zambia by FHI 360 (2014) which reported that over half of ALHIV surveyed mentioned that family members reminded them to take their ARVs. The concern of the study, however, revolves around persistent poor adherence, and deaths that have been reported among ALHIV even after initiating ART. Despite narratives which show that ALHIV were reminded to take drugs, and their caregivers ensured that they eat well, Campbell, et al (2020) reiterates that evidence which were drawn from SEP emphasizes the influence that one's social environment has on health-related behavioral outcomes which in turn influence adherence to medication including ART.

This implies, therefore, that there could be a lack of consciousness on the part of caregivers on the interplay between adequate food of good quality and other socio-cultural and demographic factors such as gender, sexual debut and ART knowledge, and how these influence adherences. It could be argued thus that ALHIV and their caregivers have concentrated on other factors at the expense of an understanding of the relationship these factors have with one another and their subsequent influence on adherence.

ALHIVs, like their age mates, experienced emotional issues as exemplified by the study findings, and in almost all instances had someone whom they trusted and could confide in. Emotional issues such as onset of sexuality (wet dreams) and sexual relationships were major concerns that caregivers were not sensitive to, and this created a vacuum that friends filled. Friends and peers have previously been reported to form a bigger proportion of confidants among ALHIV. For instance, among a sample of South African adolescents, those with extensive supportive networks among relatives and peers appeared to cope better with psychosocial challenges with caregivers who were playing an important role in facilitating ART adherence (Adejumo, et al., 2015). Kabuji, et al., (2014) has shown that family environments are crucial when it comes to care of ALHIV. In addition, SEP espouses that the interrelatedness of the microsystem and the mesosystem influenced whether one achieved desired health outcomes (Gombachika, et al., 2012)

Research evidences has shown that the fear of stigma and discrimination (also rejection) among ALHIV together with their caregivers hindered emergence of support groups within the communities where they lived. Furthermore, the study confirms reports of high levels of stigma and discrimination for PLWH reported by Siaya County Development Plan (2016) (County government of Siaya 2016). This is despite several campaigns both on ground and in the media against stigma and discrimination meted on PLWH. This, as evidence has shown, has hindered the emergence of support groups for ALHIV within the study area denying them the benefits that accrue from engagements with support groups as reported by studies such as Campbell et al., (2020); Ajuna et al., (2021) which have reported the efficacy of support groups in promoting adherence. This may, therefore, be a contributing factor for the persistent poor adherence among ALHIV which was reported by key informants. Efforts on reducing stigma and discrimination should consider initiating support groups within communities, and they should work with these groups to promote acceptance, and to enhance psychosocial support for ALHIV.

In addition, individual behaviour is influenced by different factors at different levels. The macro system, according to SEP, is the domain where the societal, cultural and economic structures reside. Thus, analyses of health promotion mechanisms such as the sensitization sessions at the PSCs should be sensitive to the lived experiences of both ALHIV and their caregivers in order to accrue maximum benefits. Therefore, as much as this finding is in line with evidences which were presented previously by Elington, et al., (2015) noted that interventions to improve adherence among ALHIV should be targeted both at them, and at their caregivers since it is important for interventions to address the multidimensional and complex nature of human environments. In addition, it was evident that the social and economic forces that have shaped the AIDS epidemic over the years are in every sense in the same forces shaping ART adherence. Social forces such as poverty, stigma and discrimination despite massive campaigns and intervention strategies, still influence ART adherence among different age groups including ALHIV.

Psychosocial support embodies a myriad of initiatives, and in this case, it entailed providing a favourable environment for ALHIV to share matters which are concerning them, and to learn from one another within the healthcare setting. Individual behaviour, as Ajuna et al (2021) espouses, is influenced by social networks. Due to the fact that there were no support groups in the communities where ALHIV lived and the high levels of stigma and discrimination, having an opportunity at the OTZ campaigns thus proved to be essential in promoting ART adherence-related activities. From these study findings and as FHI 360 (2014) reported, a majority of ALHIV enjoyed being part of support groups which were organized by health care providers for various reasons such as: liking and feeling comfortable around the clinic staff; enjoying having social interactions with other ALHIVs; hearing others' stories and encouraging one another and also engaging in group activities such as sports and outings. In addition, considering the absence of support

groups for ALHIV in the communities, having an opportunity to experience oneness at the PSC was highly cherished. Improvement in adherence have been reported with the use of support groups, positive-living workshops among adult populations who were living with HIV (Kabore, Bloem and Etheredge, 2010; Kunutsor, et al., 2012). However, 43% of ALHIV who were engaged in study still exhibited poor ART adherence despite attending OTZ campaigns. Consequently, there was a need for the health care providers particularly the PSCs implementing of OTZ to establish the missing link, and to modify this psychosocial support in order to achieve its intended objectives.

The study also espoused other barriers to adherence that was not necessarily related to adolescence as a developmental stage such as transport costs to access the PSC. This was structural within the mesosystem and as SEP espouses, social structures such as work, informal and formal social networks as well as communication systems influence how individuals make choices in their everyday life (Berben, et al., 2012). Furthermore, the study also noted that due to the fear of stigma, there were cases of ALHIV enrolling in PSC very far away from their villages to avoid being seen by those who could recognize them. This is what brought about constrains such as lack of transport fare. In addition, lack of support groups for ALHIV within the communities has worked against any efforts to reduce stigma and discrimination. However, a myriad of studies that have been reported structural barriers such as cost of transportation to health facilities have been conducted among adults who were living with HIV neglecting ALHIV who may also face such barriers as the study found out (Ssewaya, 2011; Odhiambo, 2016).

Concluding Remarks

Firstly, medication adherence is a complex phenomenon which is influenced by the interplay between the context in which the patient is expected to adhere, and the relationships with family, friends and the community. When the context of adherence is unfavorable, then speaking about adherence becomes untenable. Efforts which are done on promoting adherence among ALHIV must thus ensure that other facets of the contexts within which ALHIV live are addressed most especially situations that have arisen from orphanhood statuses, and from inability of primary caregivers to adequately provide for ALHIV. Secondly, in view of the HIV drug resistance in highly endemic zones, the test and treatment strategy and the guideline to shift patients to second-line ART at the slightest sign showed failure of first-line ART, psychosocial support systems both from family and health care providers proved to be vital in promoting adherence among ALHIV. Caregivers despite many challenges were aware that they needed to encourage ALHIV to take their drugs as prescribed. Thirdly, the PSC staff also ensured that apart from medication, they instilled hope for the future among ALHIV to motivate them to continue with their life long treatment regimen.

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