Socio-cultural Factors affecting People living with HIV/AIDS attendance at Hawassa and Yirgalem Hospital ART Clinics, South Ethiopia. Quantitative and Qualitative Mixed Approach.

Alemante A. Ayalew, Zeytu G. Asfaw and Solomon A. Lemma

Abstract

Background: HIV/AIDS pandemic seriously ravaged the world for the past three decades. It left the world with full of complicated social, economic and political problems. The problem has continued as major health problems for most developing countries, including Ethiopia. Socio-cultural practices which are predominantly determining the life of most of these peoples have structured the spread of HIV/AIDS. The aim of this study was to investigate how socio-cultural factors are affecting patients’ adherence at ART clinics in Hawassa and Yirgalem Referral Hospitals.

Methods: Qualitative and quantitative designs were used to collect the data.

Results: The findings have shown that for fear of stigma and discrimination at family and community levels forced patients’ affected adherence at ART clinics. People living with HIV were forced to travel long distance to get rid of social exclusion and isolation that resulting in drug interruptions and drop outs. The findings have also shown that most of the followers of protestant religion make believe that HIV could be cured and boycotted them form taking ART drugs. Moreover, confidentiality of information about HIV positive children living with care givers and newly tested patients found to be resistant to start or continue their drugs. Sense of wellbeing elicited form long term ART drugs effects made patients to imagine complete healing thereby dropping their treatment.

Conclusions: The findings made clear that multidimensional socio-cultural factors structure and restructure adherence problems at the ART clinics in the study hospitals. Interventions targeting to change socio-cultural factors play crucial roles to prevent and control new infections, occurrence of drug resistant strains, and social and economic repercussions in the society.

Keywords: Socio-cultural factors; adherence problems; Yiralem and Hawassa ART Clinics; Stigma and discrimination; Confidentiality of information

Background

Since HIV/AIDS occurred in Ethiopia in the early 1980s, the disease has remained main health problem. The cultural system of a society has influenced health systems at different levels. Different cultural practices of a society either speared, or prevent or promote the health of individuals. When we say cultural practise, we are referring to the food habit, sexual practices, religion, economic life and any other aspects learned behaviour acquired by an individual as member of the soci-
ety. Society’s degree of vulnerability for certain disease depends on the social and cultural settings on which it founded. The customs and traditions we have affected the spread of the HIV/AIDS.

Hellandendu[1] states that traditional sex ethos, political and economic crises in Sub-Saharan countries and the emergent youth sex sub-subculture in a culture of poverty have been serving as contributor factors for the spread of HIV/AIDS in Africa. HIV/AIDS in Africa has disturbed the social, economic and political life of the people. This disease brought about big social, economic and political problems. Socio-cultural factors aggravated the spread of the disease. Diversity of harmful traditional practices like female genital cutting, religions, gender based violence, customs and tradition related to ethnicity let the disease to put unprecedented impacts on African peoples. Since January 2005, Ethiopia has initiated a free ART program throughout the country [1]. Extending full access to ART for all who need it and ensuring proper adherence to treatment have been recognized as some of the key issues in the ART program. Three key programmatic gaps: insufficient identification of new HIV-positive persons; inadequate systems to assure linkage, retention, and virologic suppression of identified People living with HIV; and inadequate domestic spending to support sustained HIV care and treatment were instrumental to achieve the 90:90:90 goals and sustain epidemic control in Ethiopia[3].

Ethiopia has come a long way in closing the gaps, but in Fiscal Year 15 the rate of growth of people living with HIV (PLHIV) on anti-retroviral therapy (ART) declined dramatically as a result of achieving only 50% of its target for PLHIV newly enrolled on ART despite exceeding by 50% the target for number of people tested for HIV[3]. Socio-cultural diversity becomes the hallmark of alternative development. However, there are conditions socio-cultural factors that threaten the very survival of human societies. Attitude of stigmatizing and discriminating people living with HIV/AIDS (PLWHA) especially by the uninformed rural dwellers also seems to the a major problem plaguing the health status of PLWHA[4]. This is not only people to have negative attitudes towards to participate in the community teachings to prevent the transmission of HIV/AIDS, but also serve as a great obstacle to ART failure. Socio-demographic characteristics of HIV/AIDS (PLWHA) and the development of multi-drug resistant virus were characterized with adherence problems [5]. Similarly, in Nigeria addressed the emergence of multidrug resistance and transmission of drug-resistant HIV strains limit the clinical efficacy of current therapy that needed to improve patient adherence [6].

Several health studies considered the critical roles of socio-cultural factors as predisposing elements for the spread of HIV/AIDS. Furthermore, since the beginning of ART, most studies which gave focused on the clinical issues associated with patient adherence to the treatment. However, limited or no study has been carried out as to how socio-cultural background of people living with HIV/AIDS (PLWHA) affects the ART. In SNNPR, where socio-cultural diversity is predominantly found and the rate of HIV/AIDS remains major health problems, prevention and control of HIV/AIDS and other sexually transmitted infections (STIs) become crucial.
ART, as one of the mechanisms to halt the spread of the disease, has been started in different health institutions. Exploring the socio-cultural factors associated with patients who have been attending ART clinics found to be cost effective and sustainable intervention strategy. This also helps to divine better strategies to overcome treatment failures by educating the public about discriminatory norms that inhabit people living with HIV/AIDS (PLWHA) to make use of ART services.

The main objective of the current study is to explore how socio-cultural factors are affecting people living with HIV/AIDS in seeking ART services at Hawassa and Yirgalem Referral Hospitals. Specifically, the current paper would like to focus on:

- explore the socio-cultural factors that shape the current ART services in Hawassa and Yirgalem referral hospital ART clinics.

- Identify relevant cultural issues in HIV/AIDS prevention and care in the ART clinics.

- Design culturally relevant interventions to influence the public in combating against HIV/AIDS.

**Materials and Methods**

The study areas (sites) are Hawassa and Yirgalem Referral Hospitals ART clinics. Selection of the study areas also take account of logistic feasibility in undertaking the field data, long history of the beginning of ART services in the Region and high level of culturally diverse groups getting health services. The study population was the people living with HIV/AIDS (PLWHA) who have been referred to the ART clinics in the Hawassa and Yirgalem Referral Hospitals. Qualitative study was the major research method. Thus, in-depth interviews and focus group (FGD) were employed in study sites. The group compositions were consisted of patients who are in different ART regimes. Individuals patients who are in the age group more than 15 years old and for those whose age less than 15 years, parents or fosters who came with children for receiving the treatments. Patients whose educational background, sex and age were taken into conduct while segmenting groups for conducting FGDs. For in-depth interviews, people from the associations, health institutions, community elders, patients were interviewed.

Mixed research approach found to be the best way to address the inquiry under investigation. Data collection started at Hawassa Referral Hospital in November, 2018 and subsequently followed at Yirgalem Referral Hospital. Among the proposed qualitative data instruments, focus group discussions were carried out. We conducted three focus group discussions (3) at Hawassa and another three (3) at Yirgalem Referral Hospitals. A total of six(6) focus group discussions were carried out in two research sites. The number of participants in each segment ranges from 6-8 persons. As far as the gender composition of participants is concerned, 6 men and 33 women joined the focus group discussions. Participates were HIV/AIDS positive persons who happened to take their drug at the ART clinics, and people living with HIV who have been working on adherence in aforementioned hospitals.
Moreover, four key informant interviews from Hawassa and Yiralem Referral Hospitals were conducted to triangulate the focus group discussions. Information was taken using field note books and sound recorder. Data transcription and thematic analysis from the sound record has been done.

While doing qualitative data collection, archival sources were taken to look at trends occurred to adherence problem at ART service delivery clinics. In this regard, 10 years data has been accessed from the Hawassa Referral Hospital ART clinic Database. The entire database lacked the socio-demographic characteristics of the patients, though such characteristics are written on each patient card. Hence, depending on the budget, we decided to get 3(three) year data from September 2017-August 2019 to understand the situations at ART clinics. Hence, 201 patient files were withdrawn from the archives and tried to compile socio-demographic data from Yirgalem hospital. Thus, quantitative analysis has been made only at Yitgalem hospital but the qualitative analysis considered both Hawassa and Yorgalem hospitals.

Results
Quantitative Results
Though the study was mainly focused on qualitative research design, efforts were made to triangulate with the quantitative data. Hence, three years retrospective data were taken from Yirgalem Hospital to explain the socio-cultural factors affecting the adherence problems at ART Clinics, Table 1. More than half of the respondents were under the age category 21 – 30 (50.75%), married status (50.25%) and protestant by religion (50.75%). With regard to adherence status, 56.28% of them were in good status during baseline adherence but, right now optimized to 63.68%. Moreover, 46.27% of the respondents were attended not beyond primary education and also, 46.27% of the respondents were not from the hospital that they are taking ART service. This means that they are travelling from reasonably distant places though they can access on the place they are living. This might be due to stigma and discriminations. Of course, 54.73% of the respondents were under Stage I/WHO clinical stage at the start of ART but 37.31% have baseline CD4 cell count <200 which mean they are under death state.

The bivariate analysis, based on the Pearson’s chi-square statistic, provides a preliminary insight into the association/relationship between all selected independent variables and adherence. This indicates the existence of significant associations between the selected independent variables under study with both baseline and current adherence. Besides to this, we have made bi-variate analysis between selected independent variables and the current HIV/AIDS patients status. For all independent variables taking one-at-a-time, a test of association was carried out using the Pearson chi-square. High values of Pearson chi-square for a given independent variables indicates that there is strong association between each of the given independent variables and the dependent variable keeping the effect of the other factors constant. That is, testing the hypothesis:

\[ H_0 \]  There is no association between the dependent variables.
\( H_1 = \) There is association between the dependent and the particular independent variable.

The decision was based on the Chi-square value, \( P \)-value and at 0.05 level of significance, Table 2.

The above binary findings show that baseline adherence is strongly associated with place of residence, WHO clinical stages at the start of ART and baseline CD4 cell count. Surprisingly, the latter two factors were weakly associated with current adherence but religion, place of residence and phone ownership were strongly associated. This indicates that place of residence is significantly associated with both the baseline and current adherence which mean it may relate to stigma and social discrimination and need to pay attention to optimize public awareness. PLWHIV usually prefers to travel long distance for having ART service such fact is supported with qualitative data and they do not want to visit nearby ART service.

Furthermore, the present paper has investigated the association between some selected variables and the current HIV/AIDS patients status, Table 3. The findings clearly shown that the current HIV/AIDS patients status were strongly associated with religion, marital status and CD4 baseline status. The former two were supported by qualitative findings which mean religion/beliefs and marital status can determine the current status.

Qualitative results

**Socio-demographic characteristics of Focus Group Participants**

The gender characteristics of focus group participants 33 were females and 6 were males. In terms of age category, (36) participants were belonging to at age group 30-40. One was 16 year old and three of them were above 40 years. Marital status of the participants shows that most (25) of them were married, (10) were widowed, (3) of them were divorced and; the remaining (2) were single. In line with religious characteristics: (31) of participants were Orthodox Christians and 8 were Protestants. Educational level is concerned (32) of them were literate and the remaining (7) were illiterate. Relatively, occupational distribution of participants shows (30) of them were working on adherence in Hawassa and Yirgalem Referral Hospitals and the remaining 9 were those people living with HIV who came to ART clinics to get different service in the aforementioned hospitals.

**Socio-cultural factors that shape the current ART services in Hawassa and Yirgalem referral hospital ART clinics**

Several socio-cultural factors have been affecting adherence at ART service delivery at the two referral hospitals. Since the occurrence of HIV/AIDS, the big challenge has been the reduction of stigma and discrimination. Stigma and discrimination speed up the transmission of the disease through two ways. The first one is that for fear of disclosing oneself pushes people to refrain from using protective measures during sexual intercourse and social relations so that they transmit the disease. The second one is that social exclusion and marginalization forced the people to drop their treatments results in occurrence of multi-drug resistant virus.
Stigma and discrimination

Under normal circumstances stigma is followed by discriminatory practices in due course of social interaction. Most focus group participants identified several forms of stigma and discrimination at family and community levels. Participants have mentioned stigma and discriminatory practices in family and community are still big challenges for adherence problems at Hawassa and Yirgalem Referral Hospitals ART clinics. According to the focus group participants, stigma and discrimination have been affecting the people living with HIV/AIDS though it is practiced in hidden ways. Two ways of that reinforced them taking the drug are direct and indirect one. The first one is direct effect on stigma and discriminatory practices that make patients to lose their confidence in take drugs in a day to day ways of life. For fear of stigma of the family members or any members in the community, patients usually delay and there by drop taking their drugs. A woman participated in Hawassa Focus group III states her experience as follows "There are one male and three women in my village who have been using the ART drug. They used to take the drugs at Adarie Hospital, Hawassa. However, for fear of stigma, they changed their site to Hawassa Referral hospital. They took their drugs some time in this hospital. Then, they dropped to take it when they felt that they have been known by someone. Leave alone taking their drugs again from the hospital, they are afraid of taking them from my house. Currently, I am taking their drugs from the hospital and distributing to them in the village”.

The second type is the indirect one. Under this scenario, stigma and discrimination entail economic burden on PLWHIV to follow up and adherence at health institutions. Most of the participants explained that for fear of stigma and discrimination make people to travel long to get their drugs from health institutions. Several patients are at risk of delay or drop their drugs. More than half of PLWHIV come from very distance places that often delay and drop their drugs. 58 year old male participant at Yirgalem Referral Hospital in FGD III describes how intensity and magnitude of stigma and discrimination push people to different socio-economic condition as follows ”For fear of stigma and discrimination, several people living with HIV travelled long distance to reach Yirgamlem hospital to take their drugs. They came from Hawassa (35 km), Shesheme(60 km), Dilla (60 km), Negele Borea (200km), Moyale(300) and other places”. For instance, out of about 1400 patients who are taking drugs at Yiralem Referral Hospital, only about 400 individuals are coming from nearby places.

Long distance travels influence in attending to take their drug at the right time from health institutions. Patients incur additional money, time and energy that forced them to withdraw from the drug regime. A woman adherent supporter FGD I participant at Yirgalem Referral Hospital states her observation as, ”there are several people who come from Borena and Negele for fear of stigma. They do not get transport and delay for five days. Sometime, they would forget it to take their drugs. It would be dangerous for their health. They become ill and eventually died”. The pressure coming from the stigma and discrimination make people in great mental stress and created economic pressures on the existing low level of socio-economic situations.
Belief system

Religion is one of the most important aspects of socio-cultural systems of a society that crucially affect human life. Verities of modern and traditional religions promote good health through different mechanisms. While peoples are adhering to their religious value systems, there are conditions to prevent and protect themselves from different types of diseases. On the contrary, belief systems expose their followers for transmission of diseases. Since the occurrence of HIV/AIDS in the world, leaders of different religions have provided immense contribution in the prevention and control of the disease. Religious leaders motivate PLWHIV to adhere to take their drugs by explaining nothing that contradicts with their religious philosophies and values.

However, there are conditions that religious teaching affect health service provisions. Almost all participants in the focus group discussions mentioned that followers of protestant religion have often dropped their drugs. One of the participants in Hawassa Referral Hospital in FGD II states "My husband relative used to take the drug. He had been told by a prophet that he was healed from the disease. He regularly went to collect ART drugs, but he did not swallow them. Rather he threw the drugs into the latrine. Hence he did not have any absent on the registration book. Then, he became seriously ill. I took him to the hospital. Laboratory investigation showed that his viral load was very high. Finally, he passed away in April 2019".

FGD Participants working on the adherence section of the hospitals have encountered several health complication associated drug drop outs and death reports related to protestant religious followers. One of a male adherence supporter at Yirgalem Referral Hospital expresses the magnitude of the problem as "I know 13 patients who were supposed to be cured by the religious prophet. I begged them to confirm through laboratory testing whether they have completely been cured from the disease just before stop taking their drugs. I took them to the hospital. I convinced the nurse to conduct the investigation. However, all of them found to be positive. No change at all. Once they dropped they would die. It is not only life threatening impacts, but also contributes for the transmission of diseases". Similarly, a woman participated in FGD III at Yirgalem Referral Hospital points out, "three patients were told that they are healed, but they are seriously ill at home. Once they dropped, they become ashamed of restarting their drugs. Moreover, one woman at Abosto, 5 km from Yirgalem Hospital, lost her life due to such interruption related to religious healing issues. They believe that they are healed from the diseases".

The blessings elicited from the healing conformation mislead people to engage in dangerous behaviours. One of the participants in at Yirgalem hospital states that "if a person would get a conformation words from the "Prophet, he is encouraged to marry virgin girls and do what he believes". The influence does not limited to the individual persons living with HIV it goes to impact community in the fight against the prevention and control of the disease. A woman participant in FGD II at Yirgalem Referral Hospital states "There are several defaulters due to religious belief. They believe that the prophet told them they have been healed from disease."
However, they lost their good physical conditions. One day in our village, a woman prepared 'thanks giving ceremony for being healed from the disease. Feast was prepared well. Her brother supported her in the feast preparation. Several people were invited to attend the ceremony. On the contrary, her previous physical has been declining. She came to hospital to confirm whether she is free of the virus or not. She got test, but no change at all”. Similarly, FGD participant at Yirgalem hospital mention "Orthodox christian of PLWHIV used to refuse ART while they started taking holy water as means of healing from the disease. Besides to this, they didn’t take drugs timely at fasting days”. Currently, these people regularly take their drugs after a long and consecutive consultation among religion leaders, government officials and PLWHIV associations.

A religious teaching which mystifies the very existence of the disease would set big obstacles for the prevention and control measures.

**Health service delivery problems**

Similar to other service delivery systems, health service provisions are under the traditional but bad reputation. Even though professional are thought the ethic condition in treating the patients, the delivery system that is given in separate section may affect the professional attitudes towards their patients. Stigma and discrimination is also integral parts of the health services delivery at the ART clinic. Participant in FGD at Yirgalem Referral Hospital seriously commented health service problem as the causes for transfer to other health institutions. One of the participants, in Yirgalem Referral Hospital in FGD I, expresses the degrees of health service delivery problems as follow "There are problems around ART clinic. We do not have physician. There is a problem of handling patients. They seek their own benefits. One day, HIV positive mother left her child in the ward. Then the hospital administration ordered us to provide breast feeding and take care of the child instead of transferring into child care institutes. The administration presented the case as the duty of people living with HIV working on adherence”.

A lot of transfer cases at the hospital due to poor handling of patients. It has lost its service delivery status. In the process, patients either interrupt or drop their drugs. By the same token, a women participant at Hawassa Referral Hospital in FGD II describes the delivery service as follows "I came from Shashemene. We do encountered laboratory problems. There is no proper laboratory service. CD4 machine is not working. There is a problem to check viral load. When you give blood sample, it would lose. You do not get the test in right time. There is also problem at the card room and delivery ward. They mistreat people. They have limited human resource to provide the service. However, we do not have problem with the drug supply”. Another woman explains the problems of service delivery at Yirgalem Referral Hospital in FGD II as follow "In previous times, people living with HIV came to the clinic after they received telephone calls. There were good support and care. Currently, it is possible to say that there are no doctor services. Sometime they insult us. There is high doctor turn over. For opportunistic infections, they prescribe to buy drugs out of the hospital. Except those who need treatment on bed at the hospital, others services are got out of the hospital. CD4 is not done. The viral load
is done every year. There is no problem with nurse service”. Proper patient handling through counselling and laboratory investigation play crucial roles in patients’ adherence status. Different forms of stigma, discrimination and economic problems coupled with poor health service at ART make patients liable to withdraw from the treatment regime.

Declining in Associations of People living with HIV
Organized life is the hallmark of quality of life. Associations are important to organize people basic rights and able to obligated towards the common goal. Service provision and mobilizing people through association has become a feature of modern society. Associations established around people living with HIV/AIDS used to play important role in the prevention of the disease. Most FGD participants explain that being the member of an association made them helped each other and provided clear understanding about the disease. Associations helped them to overcome stigma and discrimination emerged from the people. Having tea and coffee program used to be the most strategy to teach community members about the grim feature of the HIV. The decline and/or dissolution of association organized around people living with HIV/AIDS affects adherence at health institutions. One of the founders of associations and adherent supporter at Hawassa Referral Hospital in FGD II explains the situation as ”The associations which used to provide different kinds of support for people living with HIV have stopped”.

Associations provided economic and psychosocial supports for positive patients to adhere on treatment and restrict from unprotected sexes. Currently, however, the situation has changed. For instance, we know carrier women who used to get assistance for being members of associations. However, they have continued to engage to commercial sex work on street. If a carrier woman who does not have source of incomes, she could not have any option to refuse sex without condom. So, the carriers are now transmitting the disease. Males and females started to do sex on the street. Awareness creations given by associations are not carried out on the media. NGOs which used to provide financial assistance for associations to teach the community have declined.

Networking through organizations has paramount role in the prevention and control of HIV infection in the society. Their influences to keep on people taking ART become substantial. Thus, it prevents patients to withdraw from any treatment region. Most participants mentioned in the FGDs that membership enforces patients to take drugs on regular bases and used to overcome the impacts of stigma and discrimination in the community.

Controversy over confidentially of information
Voluntary counselling services were given for those whose age are 18 and above. Children were given the service through their care givers or parents. Most focus group discussions have mentioned that the great challenge comes from children living with HIV. Children were given the reason for their taking there drugs with false reasons. Care givers and parents were giving false reasons for the children’s
question for the reasons they are taking a drug. When they become grown they are constantly asking questions and refrain from taking the drug. Adolescents are not willing to take the drug. A woman in FGD II at Yirgalem states the gravity of problems referring to children as” When children grow, they refuse to take drugs. They frequently ask questions such as for what reasons they take the drugs. For instance, those children who joined the university are creating problems. They are refusing to take the drugs. They would have their own boy or girl friends. Then, they drop their drugs. There are several children who dropped their drugs when they are small in this town. Now, it has become a big challenge to convince them to take their drugs”.

Most of Participants also raised the problem that parents or care givers used to provide false reasons to convince them to take their drugs. Indeed, children are curious to know their health status. A woman mentions the kind of questions raised by children presented as follow: ”They raise questions: how it could be? What kind of misdeeds do I do? Where does it come? and the likes”. In addition, these children have not any symptoms of illness. Once a person starts to take the drugs, he/she does not have any headache and fever. Since they also behave what other healthy friends behave, they felt that they are healthy. There is an inclination of ask question why you said to take drug so? Supplying appropriate information at the right time for children make them to understand their health situation. Unless they get plausible reasons, they refuse to take drugs.

Peoples’ displacement
People could be displaced either due to the cause of natural catastrophes and/or anthropogenic induced factors. The frequencies of human related conditions such as economic, political, social and culture reasons force people to displace temporary or permanently. Most focus group participants have mentioned that people for different parts of the area for some reasons such as imprisonment, holy water, training, and labourer come to the hospital when they are ill. Once they have been found to be HIV positive, they started their treatments. However, with unknown reasons, they quite their treatment and disappear from the area. The telephone address they gave us to remind them to take their medicine did not work. It becomes difficult to trace them to continue their drugs.

Positive outcomes of ART Drugs
Regardless of some side effects of the ART drugs that most commonly know, the drugs have played paramount roles to save the life of millions of patients in the world and make them to participate fully in their social, economic and political life. Most focus group participants mentioned the indispensable contributions that make patients to hope better future. When patients are on treatment, they have not shown any kind of symptoms or illness. Patients start to think as if they have been cured from the disease. Accordingly, they are tempted to drop their drugs. This phenomenon is most commonly among people living with HIV in rural areas.

Discussion
The socio-demographic characteristics of participants of people living with HIV in the study have shown that most of them are females. When we look at the education levels, substantial numbers of participants are found at primary education.
Similarly, the majority of participants are housewife whose means of earning a living highly depend on other husbands. The findings clearly imply that there are several conditions that adherence on ART would be under the influence of socio-cultural factors. Women who often found at lower economic conditions and education level would be exposed to stigma and discrimination, and dominated any kind of belief systems which work against ART service seeking behaviour at health institutions. Adherence was considered as the independent predicting factor for treatment failure and the patients with poor drug adherence were found to be 70.5 times at higher risk of developing treatment failure compared to the patients with good adherence to treatment at the University of Gondar Teaching Hospital[5]. However, this study made clear that adherence is rather dependant variable influenced by many socio-cultural, organisational and health delivery services variables.

However, for fear of stigma and discrimination, patients travel long distance to get their drugs for health institutions. This mobility, in turn, incurs substantial costs on their meagre incomes, energy and time resulting in great stresses to fulfil social obligations at household and community. Fear of stigma and discriminations impose on some HIV positive people to refrain from seeking services [2]. Similarly, it was identified that persistent stigma was one of interventions in program gaps the required to control of HIV epidemics in the country [2]. Social exclusion not only affects people living with HIV, but also influences voluntary testing in the fight against the disease. Stigma did not have a relation with non-adherence problem in Aksum Health Centre and Aksum Hospital [7]. However, unlike aforementioned study, stigma and discriminations among PLWHIV at Hawassa and Yirgalem Hospitals have been frequently reported at family and community levels that affect patients’ adherence. This study is in agreement with findings of in Nigeria[8] and in Nepal [9]. Stigma and discrimination continued to be not only affecting the HIV testing, but also major stumbling blocks in antiretroviral treatment.

The role of religion in setting human destiny for each follower becomes critical. Some religious values or expressions may facilitate the spread diseases. Almost all focus group participants and key informant interviews noticed high drop outs among followers of protestant religion who have attended treatments at Hawassa and Yirgalem Referral Hospitals ART clinics. This problem remains be the causes of health complication and deaths of several people living with HIV in the study areas. This study is in agreement with [9] findings that especially religious activities and festivals such as “Teej” for Hindu women and “Ramadan” for Muslims served as adherence barriers for ART. While, unlike this study, our study indicated that followers of the protestant religion totally abandon taking drugs rather than temporal restriction with the belief that their religion cures them from the disease. Similarly, Orthodox Christians who seeking holy water used to throw drugs before starting their rituals at holy places. However, according the discussants, this problem has not been affecting patients’ attendance at clinic. It is rather mentioned that people temporarily or permanently involve in pilgrimage, labour migration, court cases and training purposes disturb patients follow up at the ART clinics. Registered addresses used to trace their status become out of use.
Poor health service deliveries at laboratory, examination and card rooms increased patients transfer out to other health institutions. Inability to check CD4 and Viral loads due to repeated problems encounter on laboratory machines at Hawassa Referral Hospital, and physician who mistreated patients at medical examination and accessing patients’ cards at Yirgalem Referral Hospital were frequently mentioned reasons for large number of transfer out cases. Dissatisfaction and discontent on service delivery coupled with existing low socio-economic life of the patients could affect adherence. Keeping patients’ confidential information is at heart of medical ethics. There are practices that HIV positive children living with caregivers are not allowed to know their health status until age 18 year. When children grow up, they question about the reasons for taking ART drugs for which unknown to them. Indeed, they resist in so doing. At Ayder and Mekelle Hospitals, 24.4% of the caregivers reported that child depression was the most important preseason for adherence problem to antiretroviral therapy [10]. Though the source of this depression was not stated in the study, it could be associated with the psycho-social problems elicited from hidden information for which they destined to take the drugs.

Moreover, new case who found to be HIV positive has been asked his/ her consent to express the health status to one of the close relatives to begin the treatment. If he/she refuses to disclose the information and accept the treatment proposal, no rules that compel him/ her to start drugs. Under these scenarios, there are several newly investigated patients reject being on ART and continue to infect other peoples. These rose ethical dilemmas as to how to keep confidentiality or disclosure the information for individual or public interest to control the spread of the epidemic. Since the occurrence of the HIV/AIDS in the world, plethora of prevention and control measures have been taken. However, HIV/AIDS has been remaining as major health, social, economic and political problems in most of developing countries. Social and behavioural change approaches were first instrument to reduce the spread of the disease. Bio-medical aspect of HIV prevention through microbicides, pre-exposure prophylaxis and vaccines were stressed to curb the transmission and control of the disease [6]. It is true that such developments improved the well being of HIV patients. This study, however, indicates that regardless of introduction new development of prophylaxes, the available ART drug users are influenced by social and cultural characteristics. Instead of making behaviour changes as subsidiary to the biomedical ones, it would be beneficial to integrate the social and behavioural changes with the bio-medical ones to bring meaningful prevention and control of diseases. According to FGD and key informant interview participants, though as a matter of comparison, the state of stigma and discrimination have become multi-dimensional sources of ART adherence barriers. Intervention targeted to reduce stigma and discrimination at all levels halt the spread of HIV/AIDS.

Conclusions
HIV/AIDS devastated the social, economic and political conditions of most developing countries. A number of factors have been responsible for the transmission and control of the diseases. Poor economy, lack of political will and complex socio-cultural systems challenged the efforts to combat the diseases. In this processes,
most African countries experienced worst scenarios. Till now, HIV/AIDS has remained major development obstacle. Among several factors, socio-cultural ones are setting conducive climate for the resurgence of the disease.

The data were thematically analysed. The findings indicate that socio-cultural factors: stigma and discrimination at family and community levels, belief system, traditional health delivery system, declined associations affect attendance in taking Anti-Retroviral Therapy at delivery units in the study hospitals. Results point out that ever presence of stigma and discriminations, in all walks of life of people living with HIV/AIDS, potentially set for the resurgence of the disease through decline in public awareness and development mutant multi-drug resistance strain. Culturally adaptive structures that respond to customers’ satisfaction at health delivery units, integrate social and behavioural approaches with bio-medical models, network to improve socio-economic conditions of people living with HIV and rise community initiative awareness creation have become plausible intervention directions to prevent and control the disease in sustainable way.

**Suggested Interventions/Recommendations**

Several interventions have been forwarded in the prevention and control of the resurgence of the disease. People awareness creation about the disease has been declined. So, awareness creation on among sections of the population such as high school and university students, investors, community members, and PLWHIV becomes essential to reduce stigma and discrimination to adhere on their treatment. International and local NGO’s were the major financial sources for people living with HIV associations to carry out their activities. However, due to the lack of funds, different types of support have been reduced to assist their members. Capacitating and reintegrating the declining associations found to be central to prevent HIV/AIDS through supportive provision in adherence to their treatment at the health institutions. These protect members from sexual risky behaviour to cope with unnecessary economic pressures. Besides, engaging people living with HIV on income generation activities help them to improve their socio-economic status to overcome adherence barriers. Another intervention suggested is the improvement of law that restricts the disclosure of information on people living with HIV. Amendment of the law would help other people know people current conditions and keep themselves from the possible transmission of the disease. Compensation mechanisms for those who have been intentionally affected by people living with HIV should be indicated in the law.

**Abbreviations**

AIDS: Acquired Immune Deficiency Syndrome  
ART: Antiretroviral Therapy  
CD4: Cluster Differentiation 4  
FGD: Focus Group Discussion  
HIV: Human Immunodeficiency Virus  
NGO: Non-governmental Organization  
PLWHIV: People Living with Human Immunodeficiency Virus
SNNPRS: South Nations Nationalities Peoples Region
WHO: World Health Organization.

Declarations
Ethics approval and consent to participate
Ethical clearance was obtained from the Ethical Review Committee of College of Medicine and Health Sciences, Hawassa University. The names of the subjects were not extracted to insure privacy of HIV/AIDS patients and confidentiality was maintained throughout data collection process and analysis. To collect the data, permission was obtained from administrative officers of both Hawassa and Yirgalem hospitals. Moreover, Consent formats were prepared and informed consents were got from the FGD participants and key informant interviewees before conducting the discussion.

Consent for publication
Not Applicable.

Availability of data and material
Authors have Considered quantitative socio-demographic HIV/AIDS patients from Yirgalem Hospital patient history card and now, attached as supplementary materials of the submission system.

Competing interests
The authors declare that they have no competing interests.

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Authors' contributions
All the three authors have made contributions on conceptualized the research problem, acquisition of data, designed the study, performed statistical analysis, interpretation of data and revised and drafting the manuscript. AA and ZGA have made a great role in re-vision of the research design, data analysis, manuscript write-up, editing the entire manuscript and ready for publication. Finally, all authors have read and approved the final manuscript before submission.

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Author details
1 Department of Anthropology, Hawassa University, Hawassa, Ethiopia. 2 Department of Statistics, Hawassa University, Hawassa, Ethiopia. 3 School of Medical Laboratory Sciences, Hawassa University, Hawassa, Ethiopia.

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Tables
Table 1 Socio-demographic characteristics of the study participants in Yirgalem Referral Hospital

| Variables                  | Category          | Frequency | %     |
|----------------------------|-------------------|-----------|-------|
| Sex                        | Male              | 61        | 30.35 |
|                            | Female            | 140       | 69.65 |
| Age                        | 0 - 20            | 16        | 7.96  |
|                            | 21 - 30           | 102       | 50.75 |
|                            | 31 - 40           | 51        | 25.37 |
|                            | 41 - 50           | 27        | 13.43 |
|                            | 51 - 60           | 3         | 1.49  |
|                            | 61 - 70           | 2         | 0.99  |
| Marital Status             | Divorced          | 36        | 17.91 |
|                            | Married           | 101       | 50.25 |
|                            | Single            | 49        | 24.38 |
|                            | Widowed           | 15        | 7.46  |
| Level of Education         | No Education      | 30        | 14.93 |
|                            | Primary Education | 93        | 46.27 |
|                            | Secondary Education| 53       | 26.27 |
|                            | Tertiary Education| 25        | 12.44 |
| Religion                   | Catholic          | 2         | 0.9   |
|                            | Muslim            | 10        | 4.98  |
|                            | Orthodox          | 87        | 43.28 |
|                            | Protestant        | 102       | 50.75 |
| Occupation                 | House Wife        | 53        | 26.37 |
|                            | Merchant          | 40        | 19.90 |
|                            | Farmer            | 26        | 12.94 |
|                            | Student           | 19        | 9.45  |
|                            | No work           | 21        | 10.45 |
|                            | Others            | 42        | 20.89 |
| Place of Residence         | Yirgalem          | 43        | 21.39 |
|                            | Aleta Wondo       | 21        | 10.45 |
|                            | Chuko             | 18        | 8.95  |
|                            | Dilla             | 15        | 7.46  |
|                            | Hawassa           | 11        | 5.47  |
|                            | Others            | 93        | 46.27 |
| Phone Ownership            | No                | 20        | 9.95  |
|                            | Yes               | 181       | 90.05 |
| Baseline Adherence         | Poor              | 87        | 43.28 |
|                            | Good              | 114       | 56.28 |
| Current Adherence          | Poor              | 73        | 36.32 |
|                            | Good              | 128       | 63.68 |
| WHO Clinical Stages        | Stage I           | 110       | 54.73 |
|                            | Stage II          | 15        | 7.46  |
|                            | Stage III         | 55        | 27.36 |
|                            | Stage IV          | 21        | 10.45 |
| Baseline CD4 cell count    | < 200             | 75        | 37.31 |
|                            | 200 - 350         | 60        | 29.85 |
|                            | 350 - 500         | 20        | 9.95  |
|                            | > 500             | 46        | 22.89 |
| Current status             | Alive             | 101       | 90.25 |
|                            | Dead              | 15        | 7.46  |
|                            | Drop              | 36        | 17.91 |
|                            | Lost              | 9         | 4.48  |
|                            | Transfer          | 40        | 19.9  |
Table 2  Bivariate association between Testing of Adherence and selected independent variables

| Variables         | Categories | Baseline Adherence | Current Adherence | P-value | P-value |
|-------------------|------------|--------------------|-------------------|---------|---------|
|                   |            | Poor   | Good   | Chi    | P-value | Poor   | Good   | Chi    | P-value |
| Religion          | Catholic   | 2      | 0      | 6.1064 | 0.1065  | 0      | 2      | 8.2718 | 0.0407  |
|                   | Muslim     | 4      | 6      |        |         | 4      | 6      |        |         |
|                   | Orthodox   | 31     | 56     |        |         | 23     | 64     |        |         |
|                   | Protestant | 50     | 52     |        |         | 46     | 56     |        |         |
| Place of Residence| Yirgalem   | 18     | 25     | 18.738 | 0.0046  | 16     | 27     | 12.657 | 0.0488  |
|                   | Aleta wondo| 11     | 10     |        |         | 10     | 11     |        |         |
|                   | Chuko      | 7      | 11     |        |         | 7      | 11     |        |         |
|                   | Dilla      | 0      | 15     |        |         | 0      | 15     |        |         |
|                   | Hawassa    | 3      | 8      |        |         | 3      | 8      |        |         |
|                   | Woinsho    | 5      | 1      |        |         | 4      | 2      |        |         |
|                   | Others     | 43     | 44     |        |         | 33     | 54     |        |         |
| Phone Ownership   | No         | 12     | 8      | 1.8285 | 0.1763  | 12     | 8      | 4.3085 | 0.03792 |
|                   | Yes        | 75     | 106    |        |         | 61     | 120    |        |         |
| WHO Clinical Stage| Stage I    | 47     | 63     | 9.0111 | 0.02914 | 40     | 70     | 1.8685 | 0.6001  |
|                   | Stage II   | 3      | 12     |        |         | 4      | 11     |        |         |
|                   | Stage III  | 31     | 34     |        |         | 23     | 32     |        |         |
|                   | Stage IV   | 6      | 15     |        |         | 6      | 15     |        |         |
| Baseline CD4 Cell count | <200 | 36 | 39 | 8.4603 | 0.0374 | 30 | 45 | 1.024 | 0.7954 |
|                   | 200 - 350  | 31     | 34     |        |         | 4      | 22     | 6      | 16      |
|                   | 350 - 500  | 11     | 15     |        |         | 6      | 14     |        |         |
|                   | >500       | 25     | 21     |        |         | 17     | 29     |        |         |

Table 3  Association between some selected variables and current status of HIV/Patients who were under ART follow-up at Yirgalem Referral hospital, Southern Ethiopia

| Variables         | Category | Current Status | Alive | Dead | Drop | Lost | Transfer | Chi    | P-value |
|-------------------|----------|----------------|-------|------|------|------|----------|--------|---------|
| Religion          | Catholic |                | 0     | 2    | 0    | 0    | 0        | 28.979 | 0.0039  |
|                   | Muslim   |                | 6     | 1    | 1    | 0    | 2        |        |         |
|                   | Orthodox |                | 46    | 4    | 13   | 4    | 20       |        |         |
|                   | Protestant|               | 49    | 8    | 22   | 5    | 18       |        |         |
| Marital status    | Divorced |                | 19    | 3    | 3    | 2    | 9        | 22.675 | 0.0306  |
|                   | Married  |                | 39    | 9    | 27   | 6    | 20       |        |         |
|                   | Single   |                | 34    | 2    | 6    | 1    | 6        |        |         |
|                   | Widowed  |                | 9     | 1    | 0    | 0    | 5        |        |         |
| CD4 Baseline status | <200  | 34 | 10 | 2 | 19 | | 25.587 | 0.0231 |
|                   | 200 - 350| 31 | 5 | 6 | 10 | | | |
|                   | 350 - 500| 11 | 0 | 4 | 5 | | | |