ASSESSMENT OF HIV/AIDS SERVICES QUALITY IN HEALTH CENTERS OF EAST SHOA ZONE, OROMIA, ETHIOPIA

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Assessment of HIV/AIDS services quality in health centers of East Shoa Zone, Oromia, Ethiopia

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This is to certify that the thesis prepared by Temesgen Aferu, entitled: *Assessment of HIV/AIDS services quality in health centers of East Shoa Zone* and submitted in partial fulfillment of the requirements for the Degree of Master of Science in Pharmacoepidemiology and Social Pharmacy complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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LIST OF ABBREVIATIONS

ACORD-Agency for Co-operation and Research in Development

AIDS- Acquired Immune Deficiency Syndrome

ARV-Anti Retro Viral

EPHA-Ethiopian Public Health Association

EPHI-Ethiopian Public Health Institute

FHAPCO-Federal HIV/AIDS Prevention and Control Office

FMOH-Federal Ministry Of Health

FP-Family Planning

GHTAP-Global Health Technical Assistant Project

HAART- Highly Active Anti-Retroviral Therapy

HCMIS: Health commodities Management Information System

HIV- Human Immune deficiency Virus

HCT- HIV/AIDS Counseling and Testing

ILO-International Labor Organization

LIAT-Logistics Indicators Assessment Tool

MCH- Maternal and Child Health

MDR TB-Multi Drug Resistant Tuber Culosis

MSDS-Material Safety Data Sheet

MSH-Management Science for Health

OI- Opportunistic infection

OSSA-Organization of Social Service Agents

PMTCT- Prevention of Mother To Child Transmission

TB- Tuberculosis

WFP-World Food Program

WHO – World Health Organization

UNICEF-United Nations International Children's Emmergency Fund

USAID- United States Agency for International Development

ABSTRACT

Introduction: HIV/AIDS is the most serious worldwide public health problem of the current generation. As part of the multi sectoral response to mitigate the impact of this pandemic, the government of Ethiopia is providing different care services to people living with HIV/AIDS free of charge. The country has made substantial gains in the ART programme by expanding access to peoples living with HIV/AIDS. Nevertheless, retention of enrolled clients in treatment services, capacity for laboratory screening and point-of-care monitoring at health facilities require further improvement. The treatment coverage, particularly for pediatrics groups is very low. There are also additional reported problems with patient satisfaction on different service dimensions. So, the findings from this study may help to better understand the above and other problems associated with HIV/AIDS services in the study area and device a mechanism on how to overcome them.

Objective: To assess the quality of HIV/AIDS services in health centers of East Shoa Zone, Oromia region, Ethiopia.

Method: A mixed method using both cross sectional survey design and qualitative interview was conducted in selected health centers of East Shoa Zone between February and May, 2017. Quantitative data was collected using researcher administered structured questionnaire, logistics indicators assessment tool and observation check list. Patient satisfaction assessment was made through exit interview using five point likert scale based questions. Qualitative data was collected using key informants' interview at each health centers.

Results: The study was conducted in 8 selected health centers and all of them were providing different services including TB diagnosis and treatment, family planning services, disease and drug adherence counseling and opportunistic infection prophylaxis and treatment. They were also offering ART and anti pain medicines prescription and dispensing, different PMTCT services and ART laboratory serices. All (100%) and 6 (75%) facilities respectively had shortage of trained human power required to give ART and TB services. Five health centers (62.5%) had no CD_4 count machine at the time of the survey and facilities having CD4 machine also had scarcity of reagent.

Regarding ARV medicines availability, majority of the study facilities, 5 (62.50%) reported that thay had the stockout of AZT300/3TC150/NVP200 in six months prior to study while 4 (66.7%) of the facilities had the stockout of NVP 240ml (50mg/5ml) syrup on day of visit. Among anti

TB medicines, E100 was out of stock in three facililities (37.5%) on day of vist and INH100 had been out of stock in 4 (50%) of the facilities in six months prior to the study. From OIs medicines, Cotrimoxazole 960mg tablet stockedout in 4 (66.70%) on day of visit and in 5 (83.30%) health centers in six months prior to the study. Considerable number of study facilities, 4 (66.70%) had the stockout of tramadol 50mg tablet on day of visit and ibuprofen 400mg tablet in six months prior to the study, 5 (71.40%). The overall mean patient satisfaction score was 3.16 (SD=0.87) on a 1-5 scale. Availability of anti TB drugs in pharmacy was an item with the highest mean satisfaction score (4.18± 0.61) while waiting time to get pharmacy service was ranked least by the patients (mean score of 1.92, SD= 0.81).

Conclussion and Recommendation: This study indicated that patients were generally slightly satisfied with the services they obtained and that the study facilities were challenged by different factors including, scarcity of trained human power, stockout of various HIV/AIDS related medicines and inability to make patients adhere to the services given by the facilities. The consequenses of these factors can be dangerous to the patients as well as to the wider public and hence making available the appropriate human resource and HIV/AIDS related commodities including medicines should be the priority for the health facilities and the region to improve the quality of HIV/AIDS services in the study area.

Key terms:- HIV/AIDS, Service quality, Patient satisfaction, Health center, East Shoa Zone

1. INTRODUCTION

1.1 Background

HIV/AIDS is the most serious worldwide public health problem of the current generation. Virtually, there are no areas that have not reported cases of the infection. Since first reported in 1981, the disease has claimed the lives of nearly 27 million people worldwide (WHO, 2006). Although the infection rate is increasing in other regions, such as part of Asia and the Caribbean, the worst affected region is Sub-Saharan Africa (UNAIDS, 2006). Approximately two-thirds of people living with HIV reside in this area and nearly 75% of all the global HIV/AIDS related deaths totaling 1.6 million in 2012 occurred in this region (UNAIDS, 2013). The United Nations Development Program named HIV responsible for "the single greatest reversal in human development" in modern history (UNAIDS, 2010). In response, the international community has committed to reversing the toll of this pandemic through financial support, political advocacy, and civic engagement. With these efforts, 6.7 million people living with HIV in low-and middle income countries have access to life saving treatment, representing a 16-fold increase in 7 years. The introduction of antiretroviral therapy (ART) has been estimated to have averted 2.5 million deaths in those settings. This progress has been inconsistent across communities and countries (UNAIDS, 2011). HIV remains under diagnosed, many patients present late to care or not at all, some do not receive therapy despite clinical eligibility, and others do not remain in care over time. Addressing these challenges will require provision of new services in addition to improvement of the quality of existing services. The latter suggests an opportunity to apply the tools of quality improvement (QI) championed in well-resourced nations (Ahonkhai et al., 2012)

Like in other Sub Saharan African Countries, HIV/AIDS is a major public health, social and economic problem in Ethiopia (FHAPCO and FMOH, 2014). In 2013 there were an estimated 793,700 (716,300-893,200) people living with HIV including 200,300 (172,400 – 232,400) children according to the latest EPP/Spectrum modelling. As per the same modelling, the paediatric HIV population in Ethiopia are mostly older children who were vertically infected in earlier years when the coverage and effectiveness of PMTCT in the country was low (FMOH, 2014). There were approximately 45,200 (36,500-55,200) AIDS related deaths in 2013 and about 898,400 (770,700 – 1,048,500) AIDS orphans in the same year. HIV prevalence in the country was 1.14% in 2014 (FHAPCO, 2014; WHO, 2014). As part of the multi sectoral

response to mitigate the impact of the pandemic and through the support of PEPFAR and Global Fund, the government is providing medical care services to people living with HIV/AIDS free of charge (FMOH, FHAPCO and WHO, 2006). The country has made substantial gains in the ART programme by expanding access to PLHIV. Nevertheless, retention of enrolled clients in treatment services, capacity for laboratory screening and point-of-care monitoring require further improvement. There is a disparity between the patient expectation of the services and the actual services obtained (Bezabhe et al., 2014; FHAPCO, 2014). In view of the newly adopted WHO 2013 guidelines, it is necessary to scale-up institutional capacity including procurement and distribution of ARVs. Moreover addressing challenges in treatment adherence and retention is crucial as strengthening referral linkages between ART services and TB, STI and PMTCT services (FHAPCO, 2014).

1.2 Statement of the problem

Providing community health services in general and ART care services in particular are fundamental in alleviating morbidity, mortality and transmission of HIV/AIDS (WHO, 2014). Despite this, the health sector in many of the places in the world most affected by the disease is weak, and health services are faced with the shortages of human and financial resources. The scarcely available health professionals are also constrained by inadequate knowledge about HIV/AIDS patient care and lack of counseling skills especially for pediatrics groups. This is clearly demonstrated in sub-Saharan Africa, where people with HIV/AIDS-related illness occupy more than 50% of hospital beds, and where organizations and facilities providing care are overwhelmed by the demand (Rujumba , 2010 ; WHO, 2009).

Although the previous HIV/AIDS surveillance estimates in Ethiopia indicated encouraging signs that the epidemic was stabilizing, the recent reports indicated that the infection is becoming a major public health concern these days (FHAPCO, 2017). It has been shown that the observed changes are not sufficient enough compared to the desired goals of the response against this epidemic because of questionable quality of the services given to patients as one and major reason (FHAPCO and FMOH, 2017). Studies conducted in different places in the country showed that there were various problems associated with the services given to HIV/AIDS patients. For example, study from Welaita Zone indicated that HIV care was provided without proper training of the staffs on HIV treatment. There was disappointment of patients due to poor management of the side-effects of HIV medicines and because of lack of free treatment for opportunistic infections. In addition, shortage of resources such as laboratories and examination tools and medicines challenged the provision of standard services. The study indicated that some health facilities had space problems and poor room arrangements which failed to maintain privacy and confidentiality. The study also stated that disrespect and unhearing, especially from the new service providers made the patients disappointed with the services received (Yakob et al., 2016).

A study conducted in Bahir Dar revealed that there was occasional shortage in Opportunistic infection medicines like cotrimoxazole & fluconazole and absence of CD4 count machine in the facility. Shortage of human power and patient overload has led to patient dissatisfaction with

waiting time and drug and disease counseling (Kifle et al., 2009). Clients from Addis Ababa reported that they were dissatisfied with the availability of medicines & supplies and waiting time to get services from ART clinic (EPHA, 2009). A study from Jimma University Specialized Hospital also stated that the time clients wait to get laboratory service was longer than 60 minutes and their involvement in medical decision making was low and this was stated to be highly associated with scarcity of human resources needed to deliver these services (Getnet et al., 2008). Even though the government is working to scale up ART services and the number of patients enrolled in chronic care is increasing (reached 728,874 by June 2013), patient loss to follow-up and ensuring adherence to ART regimens remain major challenges of the ART program in the country and little has been done to evaluate the quality of the service delivered and patient satisfaction (EPHA, 2009 ; FHAPCO, 2014). The same is true in East Shoa Zone, which is one of the zones with high HIV/AIDS prevalence in the region (Mela Research, 2014). No studies has been done so far regarding the quality of the services given at the health center level in this zone and therefore it was found important to assess this issue so as to contribute to better understanding of this problem in the study facilities and to provide information on how to bring changes and improvements in the quality of the services given to the clients.

2. LITERATURE REVIEW

2.1 Global HIV/AIDS services situation

Achieving accessible, quality healthcare for persons with HIV and AIDS is a critical need for patients living worldwide. Universal access to comprehensive health services in these patients substantially reduce HIV related morbidity and mortality. These services must effectively address issues related to counseling on HIV infection and its treatment, Prevention of HIV transmission, including sexual, parental, and mother to child transmission, laboratory service, prophylaxis against opportunistic infections, diagnosis and treatment of HIV related conditions including opportunistic infections, Palliative care and integrating nutritional services throughout the continuum of HIV/AIDS care (UNAIDS, 2010). Over the past decade, the rapid expansion of these services in Africa and Asia has dramatically reduced HIV-related morbidity and mortality, and transformed the life of millions of HIV/AIDS patients (UNAIDS, 2013 ; WHO, 2011). Inspite of reported service expansion how ever, different studies indicated that there are various problems associated with the coverage and sustainability of the services given to HIV/AIDS patients. For example, a study from six Asia and Pacific countries (Cambodia, Myanmar, Nepal, Papua New Guinea, Thailand and Vietnam) found that all of these countries had problems with coverage of ART services for pregnant women to prevent mother-to-child transmission, and ART and TB treatment for HIV positive TB cases. Eventhough ART coverage for PMTCT was more than 50% in Thailand, Cambodia and Myanmar, the coverage was as low as 12% in Nepal and Papua New Guinea. TB treatment and ART coverage among HIV positive TB patients were also only around 30% in Cambodia, Vietnam, Thailand and Papua New Guinea (Fujita et al., 2015).

The constrained economic resources of countries within developing world have been identified as one of the major obstacles to the scaling-up of ART and other HIV/AIDS related services and in reorienting services delivery toward universal access. Many developing countries are unable to supply enough of the commodities necessary for the proper management of HIV/AIDS and other associated problems in their health facilities due to limited economic resource. They are also unable to properly train their health professionals because of limited finance (Maponga et al., 2007; Ilioudi et al., 2013). Studies done in Tanzania, Mozambique, Burkinafaso and Uganda in this regard has revealed that there were shortage of trained personnel, laboratory equipments and antiretroviral medicines required for providing HIV/AIDS service at health facilities in these

countries and the shortage of these commodities and human power was shown to be the result of limited economic resource (ACORD, 2007; Lubogo et al., 2015). Another study from Tanzania also indicated that financial problem has hindered the country from providing standardized services to HIV/AIDS patients. The availability of first line antiretroviral medicines in some health facilities in this country was shown to be only 33.3%. More than half of the studied facilities did not have FACS Count /FACSC libur machine for CD4 cell count and all health facilities did not have rocking platform instrument for Western Blot test and equipment for viral load test. Also only (33.3%) of the facilities had equipment for ELISA test. There were inadequate confidential places (rooms) for counseling about the disease and its treatment. Not all the eligible patients were able to start ART and comprehensive HIV care and treatment was not provided in all the designated facilities (Mapunjo et al., 2007).

Although HIV/AIDS treatment access has shown more improvement in relatively developed countries compared to the poorer countries, the realtively developed countries still could never become free from the challenges that the economically burdened countries are suffering. The relatively developed countries are suffering from the shortage of HIV/AIDS related commodities and trained human power eventhough not as that of least developed countries (Bezuidenhout et al., 2014; Wouters et al., 2008). For instance, a national survey conducted in South Africa, a relatively developed country, indicated that more than 25% of the total 2454 public facilities surveyed faced ART or TB medicine scarcity. Fourteen percent (14%) of the facilities reported a stock out of medicine used for adult HIV treatment including first line(mainly) and second line, 3% for PMTCT treatment (Nevirapine solution), 6% for paediatric HIV treatment and 6% for TB treatment, mainly isoniazid tablets. The survey indicated that eighteen (0.7%)of the facilities sent patients home with a smaller supply and 9 (0.3%) facilities sent patients home with no supply. Of all stock outs reported, 32% of stock outs lasted more than one month, 43% lasted between one and four weeks and 25% were resolved in one week (Treatment Action Campaign, 2015).

2.2 HIV/AIDS services in Ethiopia

Despite issuing national HIV/AIDS policy, establishing National AIDS Council, National AIDS Secretariat, and other relevant bodies to tackle multi sectorial effects of HIV/AIDS, Ethiopia

continued facing a mixed epidemic of this infection amongst the sub-populations and geographic areas. The disease caused a significant decrease in life expectancy and a greatly reduced workforce. A number of children became orphaned and many aged population left with no care due to this infection (Pankhurst, 2017).

Evidences indicated that there is a need for robust HIV/AIDS care and support services, including treatment of opportunistic infections, nutritional support, palliative care and pain management to HIV/AIDS patients in Ethiopia. TB, the leading cause of mortality among people living with HIV/AIDS requires special attention. Inadequate nutrition can increase the risk of rapid progression of HIV to AIDS and the possibility of opportunistic infections. The Strategic Plan II for intensifying multisectoral HIV and AIDS Response in Ethiopia 2010/11 – 2014/15 specify the need to expand access to palliative care and pain management for the chronically ill as well as psychosocial support for patients, their family and caregivers (EPHI, 2017). Despite the importance of these services, Ethiopian health system is facing different challenges as the other developing countries do. Most, if not all, health facilities are overcrowded with patients suffering from a variety of infectious diseases. All health facilities built prior to 2005 never considered the structures that HIV & AIDS programs require. Private sections for counseling and testing are needed. Internal facilities, like simple furniture, are close to non-existent, or are in short supply almost everywhere. The training of health workers at all levels was in adequate to address the HIV & AIDS issues. Changing the training curricula in the institutions was not easy and still is taking time. As a result, massive retraining programs have to be carried out every year. There are still too few health providers in Ethiopia and these providers are crowded with a high load of patients and hence were unable to provide quality services to their patients. The scarcity of human resource along with insufficient laboratory supplies made laboratory service and medical record handling poor and resulted in poor patient retention in health facilities. To implement HIV & AIDS programs properly, recording and reporting are essential elements. In most cases, registration books and accredited Health Management Information System materials are inadequate. This is a major roadblock in providing HV/AIDS services (Bezabh et al., 2014; MSH, 2011).

2.3 Patient satisfaction with HIV/AIDS services

Quality of services has an important bearing on client satisfaction, a key component of health care delivery and a predictor of service utilization and adherence. Client satisfaction often determines whether a client seeks advice and care and adheres to a prescribed treatment schedule. Satisfied patients are more likely to comply with prescribed treatment and advice from the service providers; they are also more likely to return for additional care especially for those on long term treatment like HIV/AIDS. Dissatisfied patients on the other hand may behave differently and are likely to experience serious consequences including failure to follow treatment regimens, failing to go for follow-up care and spreading negative information to discourage others from using a health service (Andaleeb, 2007; Oche et al., 2013).

A number of factors can positively or negatively influence patients' satisfaction with health care services received. Patients' socio-demographic characteristics, physical health status, facility nature,commodity availability, waiting time, patients' personal understanding, and expectations from various health care services providers including,doctors, nurses, laboratory and pharmacy personel impact how an individual views their visit to health care facilities (kagashe and Rwebangila, 2011). Studies conducted in different places taking into account the above and other determinants of patient satisfaction have shown different results. A study conducted in Nigeria involving 250 HIV/AIDS patients indicated that more than 99% of the patients were generally satisfied with most of the services rendered by the ART clinic including clinic triage, courtesy of care providers, waiting time to get ART services, explanation given by care providers about the services, consultation time, pharmacy services and waiting time in the laboratory. A small number of patients reported that they were dissatisfied with the components of clinic services like home visits (13.5%), the adherence unit (0.8%) and availability of drugs (0.4%) (Oche, 2013). It was also shown Kenya that from the total 165 patients getting HIV/AIDS services at ART clinic more than two third (76.4%) perceived the services to be poor (dissatisfying) and only 23.6% perceived them to be satisfactory. Sixty three percent (63%) of patients reported that they have been hurried in the counseling process and that some of the staffs talked about their health status outside the confines of the health facility. The clients were not happy with the support services especially about integration where they cited groupings being based on tribal and friendship basis. Significant number of clients (78.2%) reported that they spent a long time

to get the service they expect from the clinic. Seventy four percent (74%) of the clients stated that attitude of the staffs toward the patients was also not inviting (Ndinda, 2012).

Different studies were conducted in Ethiopia to assess HIV/AIDS patient satisfaction with different service elements. Studies done on the availability of resources(human power and HIV/AIDS related commodities), perceived quality of care, health worker-patient interaction, accommodation and time management and affordability of care indicated that there are variations in patient satisfaction on these elements (Kiflie et al., 2009 ; Yakob et al., 2015). It was shown in a referral hospital in Northwest Ethiopia that the average level of patient satisfaction with these items was 3.9 out of 5 points. Average rate of satisfaction was relatively higher for variables related with provider–patient interaction for which the average satisfaction score was 4.4 out of 5 points. The satisfaction score was shown to be relatively lower (mean=3.2) for affordability of care which was mainly related to the non-medical cost of visiting the HIV clinic (Kifle et al., 2009).

A study conducted in south west Ethiopia indicated that HIV/AIDS patients were slightly satisfied with the services given at ART clinic with the overall mean satisfaction score of 3.34 on five point likert scale. Patient satisfaction was higher with the services of the card room and services given at ART pharmacy for which the mean satisfaction score was 4.64 and 4.53 respectively. Patient satisfaction was also good with regard to the level the service providers involve clients in their medical decision (mean=3.84) and the recognition of patients opinion (mean=3.66). The study indicated that patients were least satisfied by the services obtained at the ART laboratory (mean=1.54) and how well professional explain medical terms to them (mean=2.00). Information on tests, treatment and expectations (mean=2.16) and willingness of professionals to answer patients'questions were also given lower satisfaction score (mean=2.22) (Getnet et al., 2007).

3. OBJECTIVES

3.1 General objective

- To assess the quality of HIV/AIDS services in health centers of East Shoa Zone, Oromia region, Ethiopia.

3.2 Specific objectives

- To assess the types of services given to HIV/AIDS patients in selected health facilities.
- To determine the major challenges experienced at the selected facilities while delivering HIV/AIDS services.
- To determine the availability of HIV/AIDS services related commodities at the selected facilities.
- To assess patients' satisfaction with the services delivered at the selected facilities.

4. METHODS

4.1 Study area and period

The study was conducted in selected health centers of East Shoa Zone, Oromia Regional State. The zone is located in the middle of Oromia connecting the western region to the eastern one. East Shoa Zone undertakes its administrative duties and responsibilities in ten districts (Fantale, Boset, Adama, Lome, Bora, Dugda, Adami Tulu Jido Kombolcha, Ada'a, Liben and Gimbichu) and three urban centers namely; Matehara, Mojo and Batu (Zway) (Zonal Health Office, 2016). Although rocky hills and clefts are found in some areas, the land feature of the zone is mainly flat. Agriculture is the economic back bone of the zone's residents, even if some industries are found in different areas of the zone (Claud, 2011; Zonal Health Office, 2016). Excluding those under construction, the zone had a total of 356 public health facilities (4 hospitals, 60 health centers and 292 health posts) and 47 private clinics with a total of 1617 health professionals including doctors, pharmacists, health officers, nurses, lab technicians, druggists , environmental health science and health extension workers at the time of the survey. A total of 18 public health facilities (4 hospitals and 14 health centers) were giving HIV/AIDS services to 16154 HIV/AIDS patients in the zone. Public hospitals were serving a total of 9943 patients while the remaining 6211 patients were served at the 14 health centers. Patients receive those services free of charge both at hospitals and health centers (Oromia Health Bureau and Zonal Health Office, 2016). The study was conducted from February 20 to May 18/2017.

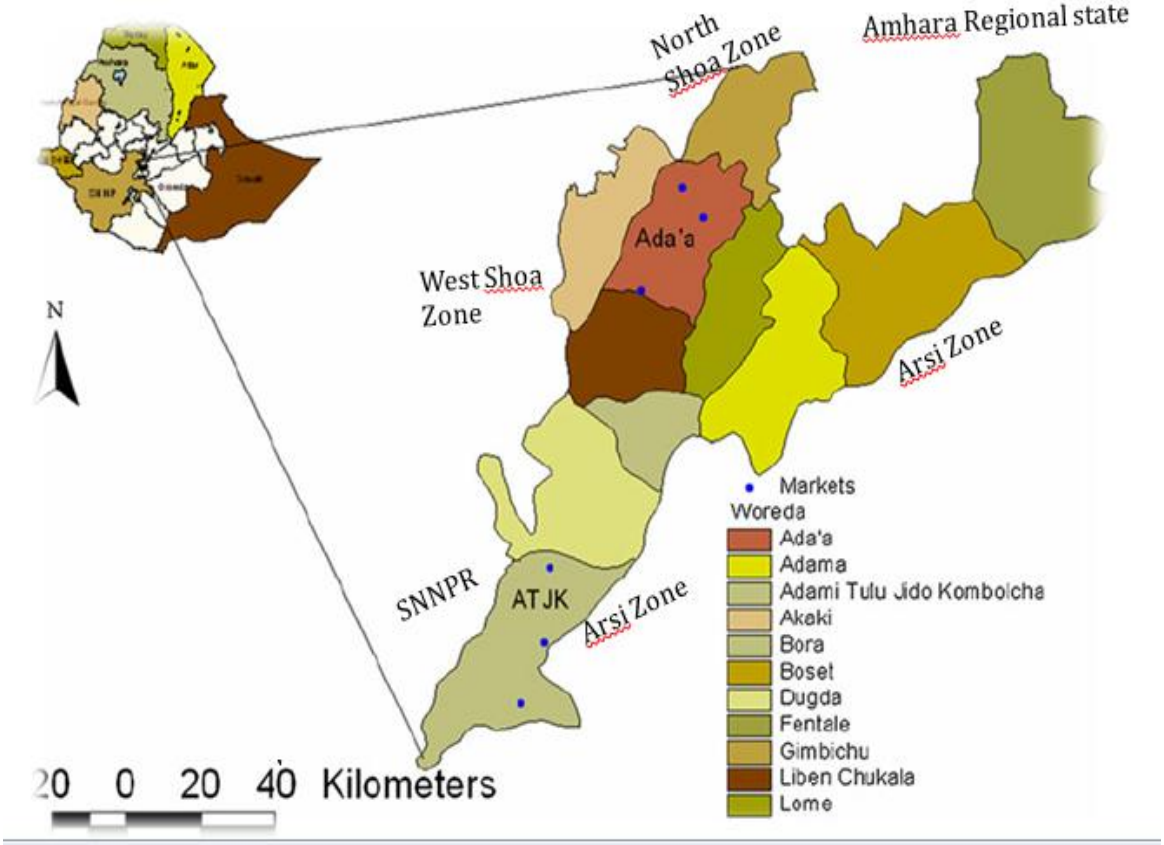

Figure 1. Map of East Shoa Zone with its administrative woredas, Oromia, Ethiopia, 2017.

4.2 Study design

A mixed method using both cross sectional survey design and qualitative interview was conducted in selected health centers of East Shoa Zone.

4.3 Population

4.3.1 Source population

All health professionals involved in HIV/AIDS service delivery and all HIV/AIDS patients attending HIV/AIDS services at health centers of East Shoa Zone were the source population.

4.3.2 Study population

The study population was all adult HIV/AIDS patients with a minimum of six months HIV/AIDS follow-up at the selected health centers and all health professionals involved in HIV/AIDS service delivery at the selected health centers.

4.4 Eligibility criteria

Inclusion criteria:-Adult Patients with follow up period of six months and more coming to the facility for HIV/AIDS services on the date of data collection and are willing to participate in the study, facilities that deliver HIV/AIDS services

Exclusion criteria:-Severely ill patients, patients with mental and hearing problems and patients under 18

4.5. Sampling technique and sample size determination

4.5.1 Health facility selection

The sample of health facilities required for this study was determined using Logistic Indicators Assessment Tool (LIAT) prepared by USAID/DELIVER PROJECT. This document suggested that atleast 15% of the target health facilities should be selected as a sample for conducting such study (USAID, 2008). Accordingly, 57% (8 of the total 14 health centers) were selected as a study sample. The selection of the sample facilities was conducted considering the patient load of the health centers. Extreme /deviant sampling technique was utilized to include the 8 health centers (4 with high patient load and 4 with low patient load) in the study.

4.5.2 Sample size calculation

The total number of adult patients included in the exit interview for the assessment of satisfaction with the services given was determined using a single proportion formula (Lwanga and Lemeshow, 1991);

$$n = \frac{(Z\alpha)^2 \times P(1-P)}{d^2}$$

where,

n = the required sample size

P = the proportion of the population getting quality service (assumed to be 50% since no previous study found)

Zα = Z score at 95% confidence interval=1.96

d = Margin of error = 0.05

Accordingly, the sample size was: $n = \frac{(1.96)^2 \times 0.5(1-0.5)}{(0.05)^2} = 384$

But, since the source population is <10,000 (i.e 6211) the required minimum sample size was obtained from the above figure using the following adjusted formula:

$n_f = n/[1+(n/N)]$ where, nf = the minimum sample size required

N = the size of the source population

So, the minimum sample size, nf = 384/[1+(384/6211)] = 362

Assuming 10% allowance the total sample size was calculated to be 398. Then the total number of participants to be selected from each health facility was determined based on proportionate to patient load.

4.5.3 Selection of health professionals

ART coordinator, Maternal and Child Health (MCH) coordinator, Laboratory representative, TB focal person and store managers from each of the selected health centers participated in the quantitative survey. For the qualitatitive part, four individuals (i.e ART coordinator, Maternal and Child Health (MCH) coordinator, Laboratory representative and TB focal person) were purposively selected from each of the selected health centers to participate in key informant interview.

4.5.4 Selection of Medicines

A total of 11 ARV medicines, 10 anti-TB medicines, 5 anti-pain medicines and 4 opportunistic infection medicines were selected and assessed. The selection of ARV medicines was made based on the national guideline of comprehensive HIV/AIDS prevention, care and treatment (FMOH, 2014) and the selection of anti-TB medicines was made based on national TB management guideline (FMOH, 2012). Antipain medicines and other opportunistic medicines were selected based on Standard Treatment Guideline for health centers (FMHACA, 2010) and most commonly used medicines at the health centers.

4.6 Data collection methods and instruments

For the quantitative study, the selected health professionals (ART coordinator, MCH coordinator, Laboratory representative and TB focal person) were interviewed to assess the types of services given using researcher administered structured questionnaires that were prepared based on USAID Health care improvement project tools (Rondinelli et al., 2011) and translated to the local language (i.e to Afan Oromo). The availability of HIV/AIDS related medicines were checked using Logistics Indicators Assessment Tool prepared by USAID (USAID, 2008) and store managers interview.

Observation checklist was used to check the availability of laboratory supplies and equipments and different HIV/AIDS services related guidelines/documents. Questionnaires for assessing

patient satisfaction on different service dimensions were also prepared based on published researches (Belay et al., 2013; Getnet et al., 2008; Kwesiga, 2010; Wouters et al., 2008) and translated to Afan Oromo and then applied to the selected patients through exit interview. The questionnaire consisted socio-demographic characteristics of the patients and satisfaction indicators for HIV/AIDS services. A standardized five point likert scales ranging from very dissatisfied to very satisfied (1 to 5 points) were used to determine patient satisfaction on different satisfaction items.

For the qualitative study, Interview guides were first prepared in English and translated to Afan Oromo and then back to English. The back translation was done with experts to check message consistency. The Oromic version was used to explore the ideas of the key informants regarding the major challenges experienced while providing HIV/AIDS related services, measures taken to overcome these challenges and suggestions made by the respondents to improve the quality of the services given. Note book was used to record the responses of the key informants in the interview process. The responses were then translated to English and included in the write up.

4.7 Data collectors

Health professional respondents' interview (both structured interview and key informants interview) and observation activity was undertaken by the principal investigator. Research assistants (one nurse from each health center) helped principal investigator in conducting patient exit interview at each health center.

4.8 Study variables

4.8.1 Dependent variable

Patient satisfaction

4.8.2 Independent variables

Patients' socio demographic characteristics:

Age, sex, marital status, residence, length of time as a client, educational status, occupational status

Facility related factors:

Location of service room, cleanliness and comfort of waiting area, cleanliness and comfort of service area

Commodity/resource related factors:

ART medicines availability, Anti TB medicines availability, Laboratory materials availability, Human resource availability

Service provider related factors:

Service providers' knowledge and skill, courtesy and respect shown to patients, willingness to listen and answer patient's question, promptness in delivering services

Other independent variable: waiting time to receive services

4.9 Data quality assurance

To assure the quality of collected data, appropriately designed data collection methods and instruments were used. The instruments were pre tested and necessary modification was made before starting the actual study. Every day the collected data was reviewed and checked for completeness and consistency of the response. Half day training was given to the data collectors (patient interviewers) on the interview tools and how to approach patients. Back translation from the local language to English was conducted to check message consistency for the interview guides. The validity of the qualitative findings was checked by sharing with the research participants and other experts.

4.10 Data entry and analysis

The collected data was checked for consistency and completeness of information. Quantitative data were checked and analyzed using SPSS version 20. The relationship between dependent variable (general/overall satisfaction) and independent sociodemographic variables was examined using binary logistic regression. To do this, participant patients were initially divided into four groups based on their age (group1: 20-29 years; group2:30-39 years; group3: 40-49years; group4: >=50 years). They were also categorized according to their length of stay as clients at the health centers into three groups (group1: <2 years; group2: 2-4 years and group3: >4 years). Very dissatisfied, dissatisfied and neutral responses were considered as dissatisfied while satisfied and very satisfied were considered as satisfied based on literatures (Belay et al., 2013; Ejeta et al., 2015). Then, a bivariate logistic regression was performed for each independent variable with the outcome of interest (General/overall satisfaction) to identify associated factors. Finally, multivariable logistic regression was done to determine independent predictors of general/overall satisfaction. For qualitative data analysis, all interviews were

conducted, recorded verbatim in Afan Oromo. Coding was done after translating the responses into English. These codes were incorporated into different themes that emerged from the collected data and that dealt with major challenges experienced while delivering HIV/AIDS services, measures taken to overcome these challenges and suggestions made to improve the quality of the services given.

4.11 Ethical consideration

Ethical approval was obtained from the Research and Ethics Review Committee of School of Pharmacy, Addis Ababa University. A letter was written by Oromia Regional Health Bureau to the Zonal Health Office. The Zonal Health Office then wrote to each Woreda Health Offices which in turn wrote to each of the selected health centers. The study was conducted in each health facility after obtaining permission from the representatives of the facilities. Participants of the study were also asked for consent before participating in the study. During the consent process, they were provided information regarding the purpose of the study, why and how they were selected as a respondent and what was expected of them. Every participant was informed that participation in the study was fully voluntary. To assure anonymity, name and address of the study participants were not recorded on the questionnaires and all the information gathered was treated as confidential.

4.12 Operational definitions

- HIV/AIDS Service Quality- The level of HIV/AIDS services as measured by the availability and utilization of: ARTs, laboratory supplies/equipments, anti-TB medicines, OI medicines, antipain medicines, different guidelines and trained man power.
- HIV/AIDS services related commodities- In this study refers to antiretroviral medicines, laboratory supplies/equipments, anti-TB medicines, opportunistic infection medicines, anti-pain medicines and different guidelines.
- Patient satisfaction- patients' ratings of the services rendered as very dissatisfied, dissatisfied, neutral, satisfied or very satisfied.

5. RESULTS

5.1 Types of services given to HIV/AIDS patients

5.1.1 Continuum of care services

5.1.1.1 TB diagnosis and treatment for HIV positive patients

All health centers were offering anti-TB services including counseling on TB and anti-TB medicines, screening for active TB, Isoniazid preventive therapy and treatment of active TB (DOTS) to HIV positive patients. Six of the eight health centers (75.00%) were also providing treatment of MDR TB but the remaining two health centers were not offering the service because of scarcity of human resource and hence MDR TB patients were referred to nearby facilities. All health centers had a separate room for anti-TB service provision. The respondents said that nurses were the main providers for the majority of anti-TB services even though other professionals like laboratory specialists, health officers and druggists were involved in diagnosing the infection, prescribing medicines and in providing medicine counseling respectively. TB services guideline was available and was reported to be used as needed in 7 (87.50%) health centers. TB services coordinator from the remaining health center said that the guideline was lost because of aging and poor handling.

5.1.1.2 Family planning services integrated with HIV/AIDS care

Respondents from all of the visited facilities said that their health centers were offering family planning services including counseling on family planning methods available and methods' ability to prevent sexually transmitted infections and HIV/AIDS (i.e condom). Long acting family planning methods like implants, injection contraceptive (Depo-provera) and IUCD (Intra Uterine Contraceptive Device) were provided in a room prepared for family planning service provision while condoms and oral contraceptive pills were given both at the ART pharmacy and family planning room. These services were provided by midwifes, nurses and druggists. Five health centers (62.50%) had family planning guideline at their facilities but only 2(40.00%) of them referred to it while delivering the services.

5.1.1.3 Home based care provision to HIV/AIDS patients

Only two of the eight health centers were providing home based care to HIV/AIDS patients. Respondents from these facilities said that the care targeted those patients whom the disease

harmed to a higher degree (stage three and above) and those who were economically weak. These two facilities were providing home based care in collaboration with organizations named OSSA (Organization of Social Service Agents) and WFP (World Food Program). Health care teams from these facilities, Volunteer community members and delegates from the two organizations had usually visited patients' home and provided psycho social and economic support. The care providers offered information to patients and their family members on how to manage common health problems at home, infection prevention and control and proper nutrition. Basic supplies including soap, oil and food powder contributed by these organizations were also delivered to the patients by the home based care provider team. The health centers on their side arranged transportation, free phone call to the colleagues and patients and room for discussion to the care team as needed.

5.1.1.4 Psycho social and nutritional support to HIV/AIDS patients

Support groups onsite (health professionals), patient support groups, support groups composed of volunteer community members and NGO based groups were the major support groups established to help patients cope with psychological, economic and social consequences of the infection. Respondents from all health centers said that they had one or more of these support groups at their facility. The respondents stated that, despite their existence, the first three support groups have never done well when compared to the available NGOs and against the plan they were established for. Business of the support groups with other activities and lack of motivation were stated to be the main reasons. NGOs named New Generation Support Group, OSSA and Hunde were counseling patients against social stigma and discrimination and supported them by food and finance in some of the studied health centers. Respondent from one health center said that Catholic and protestant churches available in the area were supporting pediatric HIV positive students through covering foods, school fees, uniforms and other learning materials.

Only three facilities had a system to follow whether patients were in support group. Respondents from these facilities said that their health centers checked the membership and stay of patients in support group by asking the patients and by checking with the support groups.

5.1.2 Pre-ART and ART services

Pre ART and ART services have been offered at the study facilities for 4 to 12 years (Mean =7.88, SD=2.36). ART coordinators from all study facilities said that their facilities were providing HIV/AIDS counseling, partner counseling (if in couple), cotrimoxazole prophylaxis, WHO disease staging, weight measurement and opportunistic infections treatment to HIV/AIDS patients. ART and anti pain medicines prescription and dispensing and medicine adherence counseling and assessment were also given at all health centers. The respondents said these services were provided by health officers, druggists, pharmacists, and adherence counselors available at the facilities. Three health centers had both pharmacists and druggists providing ART services while remaining provided the service with either pharmacists only (two health centers) or druggists only (three health centers). ART service guideline and HCT guideline were available in all facilities although they were rarely used in practice.

ART coordinators from all health centers said that patients' appointment schedule for ART services (which was mostly every two weeks, monthly or bimonthly) was based on whether the patient was new or repeated, availability of ART medicines, adhrence history and distance the patient had to travel to the facility. Patients who were new and resided closer to the health center were initially appointed every two weeks in all health centers. This was done mainly to check their adherence status to the prescribed medication and the side effects/adverse effects resulting from medicines. Patients coming from distance and chronic patients were frequently appointed monthly or bimonthly even though they were sometimes appointed for two weeks in case ART medicines were not adequately available. ART coordinators in all facilities stated that despite the schedule, not all patients respect their appointment date. They stated that a number of patients missed their appointment date mainly due to distance from facility, forgetting the appointment date, side effects of medicines, economic problem (lack of money for transport) and fear of stigma and discrimination from peers and society. They also said that some patients missed their appointment because of inconvenience due to their occupation (government/private employee, daily laborer, house maid), believing that they get cured by holy water, overlap with social events (*idir, mahber, death of relatives/neighbours)* and thinking that the first dose has cured the disease.

5.1.3 Prevention of Mother To Child Transmission (PMTCT) services

Prevention of mother to child transmission services were available in all the surveyed facilities. All facilities were providing HIV/AIDS counseling, mother and infant prophylaxis at delivery and enrollment of mothers and infants in HIV care program. MCH coordinators from six health centers said that they had professionals trained in PMTCT services including health officers, nurses, midwives and drugists.

5.1.4 HIV/AIDS laboratory services

There were a total of 17 laboratory specialists in the study facilities of which 5 had first degree and 12 had diploma in medical laboratory. These laboratory specialists were providing HIV testing and other HIV/AIDS related services in the study health centers. Eventhough the laboratory specialists rarely used it in practice, majority, 6 (75.00%) health centers had written laboratory protocols with set of standards for conducting HIV test. National protocols for test disclosure and Material Safety Data Sheet (MSDS) for chemicals used and stored in laboratory were available in 5 (62.50%) and 3 (37.50%) health centers respectively. Only three laboratories (37.50%) had chemical containers clearly labeled with identity, hazard warning and date. Some of the remaining laboratories had unlabeled chemical containers and some others had scratched and/or dim labeling. Laboratory room, supplies and equipments were observed being hygienic and healthy in 4 (50.00%) health centers. Protective gloves and gowns were available and in use in all the visited laboratories while nose masks were available and in use only in 4 (50.00%) laboratories. Of the eight health centers only two facilities had fire extinguisher in the laboratory while none of the facilities had eye protection for the laboratory service providers.

5.2 Availability of ARV and related medicines

Majority of the study facilities, 6 (75.00%) were using only bincards for controlling the stock movementof ARV and other medicines while two facilities (25.00%) were using both bincard and electronic system (HCMIS). All health centers lacked bincard for one or more of ARV, OI and anti pain medicines. The mean number of anti TB, ARV and antipain medicines that had bincard at the time of visit was 8.13, 7.13 and 3.12 respectively. On average 81.25% of anti TB medicines and 64.77% of ARV medicines had bincard at the time of visit. The average

percentage of anti TB medicines that had updated bincard was 74.97% while 57.29% antipain medicines had the same (Table 1).

Table 1. Availability and update status of bincards for ARV medicines, anti TB and other opportunistic infection medicines in health centers of East Shoa Zone, Oromia, Ethiopia, 2017

	Bincard available		Bincard updated	
	Mean(SD)	(Min,Max)	Mean(SD)	(Min,Max)
No.ARVmedicines	7.13(1.72)	(4,9)	3.75(2.05)	(1,7)
%ARV medicines	64.77(15.70)	(36.35,81.82)	49.46(18.20)	(25.00,77.78)
No.AntiTB medicines	8.13(0.99)	(7,10)	6.12(2.03)	(4,10)
%AntiTB medicines	81.25(9.91)	(70.00,100.00)	74.97(19.90)	(44.40,100)
No.OI medicin other than antiTB	2.38(0.74)	(2,4)	1.25(0.46)	(1,2)
%OI drugs other than antiTB	59.38(18.60)	(50.00,100.00)	52.08(5.89)	(50.00,66.67)
No.Anti pain medicines	3.12(0.64)	(2,4)	1.87(1.36)	(0,4)
%Anti pain medicines	62.5(12.81)	(40.00,80.00)	57.29(34.92)	(0.00,100.00)

Over all 6 (75.00%) of the health centers faced the stockout of one or more ARV medicines on the day of visit while all health centers, 8 (100.00%) reported they had stockout of one or more ARV medicines in six months prior to the study. The stockout was high for NVP 240ml (50mg/5ml) syrup, 4 (66.70%) and AZT300/3TC150/NVP200, 5 (62.50%) on day of visit and in the past six months respectively. Regarding anti TB medicines, four facilities did not experience stockout on day of visit on all anti-TB medicines studied while three had the stockout of E100. Five health centers (62.50%) stated that they had the stockout of one or more anti-TB medicines in the six months prior to the study. The highest stockout was for INH100, 4 (80.00%) and the lowest was for E100, 2 (40.00%). Six health centers (75.00%) experienced the stockout of one or more opportunistic infection medicines (other than anti TB medicines) on the day of visit and in the six months prior to the study. Cotrimoxazole 960mg tablet was the OI medicine with the highest stockout on day of visit, 4 (66.70%) as well as in the six months prior to the study, 5 (83.30%). Six (75.00%) and 7 (87.50%) of the study facilities experienced the stockout of one or more commonly used anti pain medicines on the day of visit and in six months prior to the study respectively. Considerable number of study facilities, 4 (66.70%) had the stockout of tramadol 50mg tablet on day of visit and ibuprofen 400mg tablet in sixmonths prior to the study, 5

(71.40%). None of the study facilities faced the stockout of paracetamol 500mg tablet and diclofenac 100mg tablet both on day of the visit and in six months prior to the visit (Table 2).

Table 2: ARV, Anti TB, OI and anti-pain medicines stockout on the day of visit and within six months prior to the study in health centers of East Shoa zone, Oromia, Ethiopia, 2017

	Drug type	HCs Stockedout of each medicine on day of visit, N(%)	HCs Stockedout of each medicine within six months prior to the study, N(%)
ARV medicines	TDF300/3TC300/EFV600	0(0.00)	3(37.50)
	AZT300/3TC150/NVP200	0(0.00)	5(62.50)
	AZT300/3TC150	2(33.30%)	2(25.00)
	TDF300/3TC300	0(0.00)	0(0.00)
	AZT60/3TC30/NVP50	0(0.00)	1(12.50)
	AZT60/3TC30	1(16.70)	0(0.00)
	EFV600	0(0.00)	1(12.50)
	NVP200	1(16.70)	2(25.00)
	EFV200	0(0.00)	3(37.50)
	EFV50	0(0.00)	0(0.00)
	NVP240ml syrup(50mg/5ml)	4(66.70)	2(25.00)
Anti TB and other OI medicines	RHZE150/75/400/275	0(0.00)	0(0.00)
	RH150/75	0(0.00)	0(0.00)
	RHZ60/30/150	0(0.00)	0(0.00)
	RH60/30	0(0.00)	0(0.00)
	RH60/60	0(0.00)	0(0.00)
	E400	0(0.00)	0(0.00)
	1NH300	0(0.00)	3(60.00)
	Streptomycin vial 1gm	0(0.00)	0(0.00)
	E100	3(75.00)	2(40.00)
	INH100	1(25.00)	4(80.00)
	Cotrimoxazole 240/5ml syrup	0(0.00)	3(50.00)
	Cotrimoxazole 480mg tab	3(50.00)	4(66.70)
	Cotrimoxazole 960 mg tab	4(66.70)	5(83.30)
	Ciprofloxacin 500mg tab	2(33.30)	3(50.00)
Anti-pain medicines	Paracetamol 120mg/5ml syrup	3(50.00)	4(57.10)
	Paracetamol 500mg tab.	0(0.00)	0(0.00)
	Ibuprofen 400mg tab.	2(33.30)	5(71.40)
	Diclofenac 100mg tab.	0(0.00)	0(0.00)
	Tramadol 50mg tab.	4(66.70)	4(57.10)

The mean number of stockedout OIs medicines (excluding anti-TB medicines) on day of visit was 1.50 while the mean percentage stockout for these medicines on the same day was 37.50%. OIs medicines (excluding anti-TB medicines) and anti pain medicines respectively had a mean percentage stouckout of 53.57% and 32.50% in six months period prior to the study (Table 3).

Table 3. Mean ARV, Anti TB, OI and anti-pain medicines stockout on day of visit and within six months prior to the study in health centers of East Shoa zone, Oromia, Ethiopia, 2017

	On day of visit		In the past six months	
	Mean±SD	(Min,Max)	Mean±SD	(Min,Max)
No.of ARV medicines stockedout	1.33±0.52	(1,2)	2.50±1.41	(1,5)
% of ARV medicines stockedout	12.12±4.69	(9.09,18.08)	22.72.±12.85	(9.09,45.45)
No.of antiTB medicine stockedout	1.00±0.00	(1,1)	1.80±0.84	(1,3)
% of antiTB medicines stockedout	10.00±0.00	(10,10)	18.00±8.37	(10,30)
No.of OI medicines stocked out	1.50±0.55	(1,2)	2.14±1.21	(1,4)
% of OI medicines stockedout	37.50±13.69	(25,50)	53.57±30.37	(25,100)
No.of antipain medicines stockedout	1.29±0.76	(1,3)	1.63±0.74	(1,3)
% of anti pain medicines stockedout	25.71±15.12	(20,60)	32.50±14.88	(20,60)

TDF300/3TC300/EFV600 was the ARV medicine with the longest stockout duration in six months period prior to the study (Mean=31.00, SD=10.54 days). EFV 600 (Mean=26.50, SD=13.43 days) and NVP240ml syrup (mean=25.00, SD=8.49 days) also had longer stockout duration while AZT60/3TC30/NVP50 (Mean=8.00days) had the shortest stockout duration in six months period prior to the study (Figure 3). Failure to order on time and inability to receive the ordered quantity on time (due to shortage at the suppliers'store) were reported to be the main reasons for the stockout of the ARV medicines. Store managers said that their facilities have made emergency order and borrowed from nearby facilities to mitigate the stockout of these ARV medicines. They also stated that they were dispensing below the prescribed quantity in case they suspect drugs could stockout soon and there was uncertainty on timely supply.

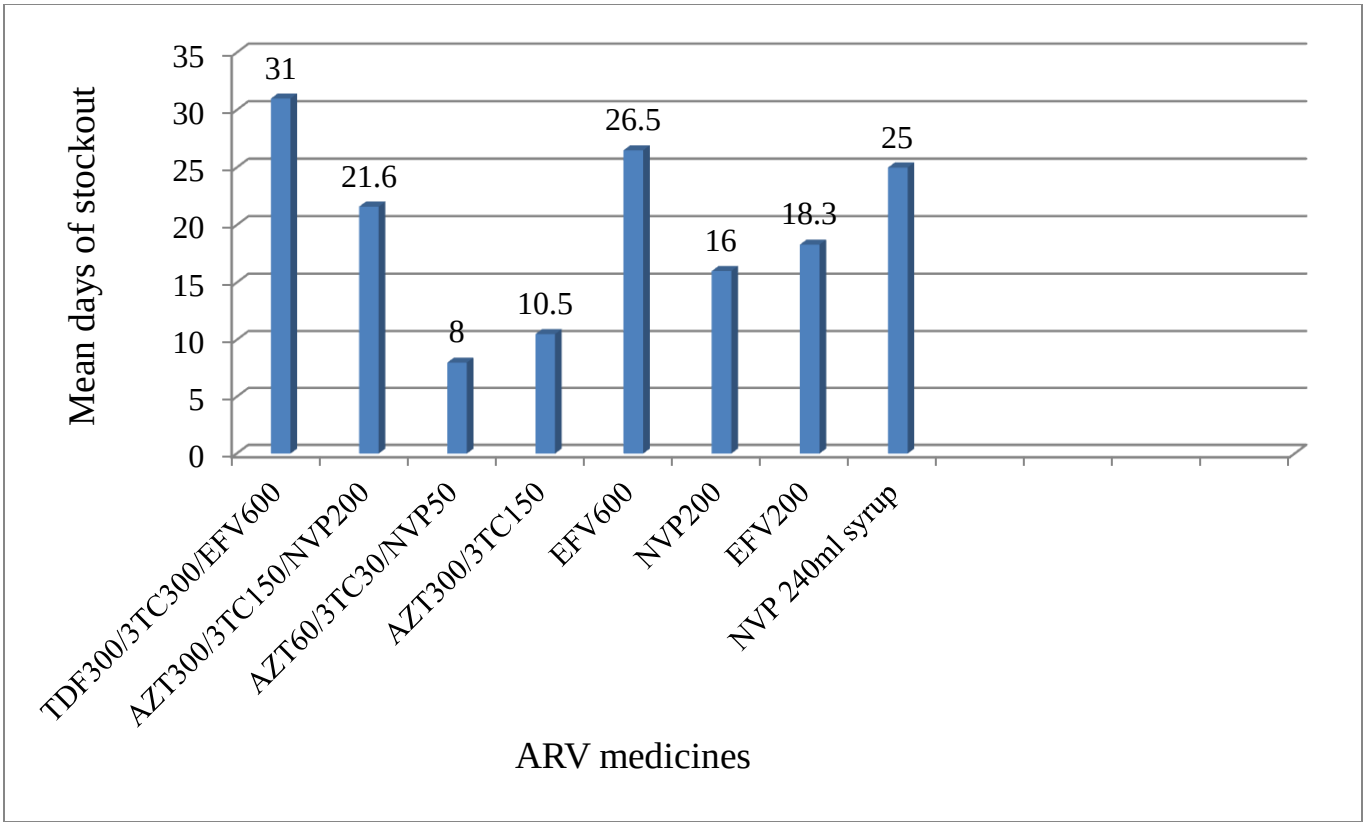

Figure 2: Mean stockout days of ARV medicines within six months prior to the study in health centers of East Shoa Zone, Oromia, Ethiopia, 2017

Ciprofloxacin tablet (Mean=43.00, SD=7.55days) and Cotrimoxazole syrup (Mean=36.30, SD=15.01 days) had longer stockout duration compared to other OI medicines including anti-TB medicines. The mean stockout duration of INH100 in six months period prior to the study was 24.30 (SD=16.80) days while the remaining two stockedout anti-TB medicines, INH300 and E100 had mean stockout duration of 23.30 (SD=9.71) days and 22.50 (SD=17.68) days respectively. Among the commonly used anti-pain medicines, Ibuprofen tablet had a mean stockout duration of 22.60 (SD=8.23) days while paracetamol syrup had a mean stockout duration of 21.50 (SD=4.93) days (Table 4). Failure to order on time and inability to quantify in enough amount were mentioned as the main reasons for the stockout of OI and anti-pain medicines. The facilities reported that they were dispensing one anti-pain and OI medicines (not anti TB medicines) instead of the other and were dispensing below the prescribed quantity (in case they suspect stockout in near future) to solve the problems of stockout. The facilities stated

that they were borrowing anti-TB medicines from nearby facilities and were placing emergency order for mitigating the stockout of anti-TB medicines.

Table 4. Mean stockout days of Anti-TB and other OI medicines and most commonly used antipain medicines within six months prior to the study in health centers of East Shoa Zone, Oromia, Ethiopia, 2017

	Medicine type	Mean days of stockout (SD)
Anti TB and other OIs medicines	INH300	23.30(9.71)
	INH100	24.30(16.80)
	E100	22.50(17.68)
	Cotrimoxazole 240mg/5ml syrup	36.30(15.01)
	Cotrimoxazole 480mg tab.	19.75(11.80)
	Cotrimoxazole 960mg tab.	22.50(10.54)
	Ciprofloxacin 500mg tab.	43.00(7.55)
Anti pain medicines	Paracetamol 120mg/5ml syrup	21.50(4.93)
	Ibuprofen 400mg tab.	22.60(8.23)
	Tramadol 50mg tab.	18.50(9.61)

5.3 Findings from the key informants' interview

In-depth interviews were held with the key informants selected from each health center. Twenty three participants were females and nine were males. The mean age of the participants was 30.47 (SD=4.81, range=24-40) years and 12 had bachelor degree and 20 had diploma.The work experiences of the respondents ranged from 2 to 13 (6.25±2.63) years. In-depth interviews conducted with these key informants focused on the methods used to evaluate the qualities of the services given, major challenges experienced while delivering different services to HIV/AIDS patients and measures taken to solve the challenges faced. They were also asked to suggest on what should be done to improve the quality of the services given to patients.

Methods used to evaluate the quality of services given to patients

Majority of the key informants mentioned that the availability of commodities (essential medicines and laboratory materials) and trained human power were the most important determinant of the quality of the services delivered. Some of the key informants also stated that

feedback obtained from users, inaddition to the commodities and human power, play a great role to know the status of the services given. One of the key informants said:

"On top of the available commodities and human power, post service comments obtained from users help the service providers to know the status of the services given and to make adjustments as necessary."(Pharmacist, male)

Challenges faced in delivering HIV/AIDS services

When asked about the major challenges experienced while delivering HIV/AIDS services, majority of the ART and anti-TB services coordinators said that their facilities had shortage of human power required to provide ART and anti-TB services. They also added that the available service providers rarely received onjob training. ART coordinators from some facilities said that the rarely available trainings were shifted from ART service providers to other health professionals who were not invoved in ART service provision. This was exemplified by one key informant who stated:

"I am a druggist. I have been working in ART pharmacy for more than two years and it was me who should have taken the ART training that was given last year. However, I was forbidden that trainig beacause of unknown reason and some one else who was not concerned have taken it."(Druggist, female)

More than half of the laboratory representative key informants said that the available laboratory staffs were not properly trained on HIV/AIDS laboratory services, safety issues in the laboratory and laboratory quality assurance. For the questions asked regarding family planning, some of the key informants said that there was shortage of human resource required to provide family planning services and that the available service providers had never received any on job training since hired.

Most of the key informants said that they were not providing CD_4 count services to their patients because their facility had no CD_4 count machine. They stated that they send blood sample to regional laboratory in Adama where they were expected to wait long until CD_4 result is sent back

from this laboratory and therefore they were unable to know the health status of their patients on time. One key informant said:

"I haven't seen CD_4 count machine in this health center since I started working here. We collect blood samples from patients and send them to Adama for CD_4 count service. As far as I know it takes a minimum of one month to get results from this laboratory and hence we are unable to know the health status of our patients on time and to make proper medical decision."(Lab. technician, male)

Informants from two of the three facilities that had CD_4 machine also reported that they were unable to give CD_4 count service due to lack of reagent. One key informant justified this by saying:

"It is almost two months since we stoped giving CD4 count services to our patients because of scarcity a reagent. We send the collected blood samples to the regional laboratory for this service." (Lab. technician, male)

Patients' loss to follow up due to relocation, stopping medication by self-decision, patients' inability to keep appointment date, restarting medication in other facility without informing the former facility, shortage of nutritional supplements at some health centers and most patients' inability to afford food and budget medicines were also among the challenges mentioned by some key informants. One key informant expressed her idea about nutritional foods saying:

"Due to shortage in our facility, we are forced to reduce the number of supplementary foods (plumpy sup. and plumpy nut.) to be dispensed to our patients and sometimes to limit supply to severely malnourished and under five years only." (Health officer, female)

Measures taken to solve the experienced challenges

The key informants mentioned that their facilities have undertaken different measures to overcome the experienced challenges of which delivering/covering the services by the available staffs, providing repeated adherence counseling to the failing patients, dispensing budget

medicines freely to those groups unable to afford, rationing nutritional foods or dispensing them to severely malnourished and under five years only and transferring patients to nearby facilities in areas where patient mobility was high were some.

Some key informants also said that they were working with the stake holders and charities to help the sevely affected and economically weak patients. One of the key informants explained this concept as follows:

"*We have a number of patients who even have no thing to eat. We are currently working to help these patients through facilitating food, dressing and financial support from the justice office of the zone, local NGOs and churches.''(Clinical nurse, female)*

Suggestions given to improve the quality of the services given

The respondents were asked to provide suggestions on how to improve/maintain the quality of services given to HIV/AIDS patients. Employing additional human resource, giving proper training to the available staffs and improving the availability of CD4 count machine and its reagents were among the suggestions made to improve the quality of the services delivered. They also suggested that health centers should strengthen their patient adherence counseling.

5.4 Patient satisfaction with HIV/AIDS services

5.4.1 Socio-demographic Characteristics of the Respondents

All the sampled population (three hundred and ninety eight patients) participated in the exit interview resulting in a response rate of 100%. Three hundred and seven (77.10%) of them responded to anti-TB service related questions and the remaining 91 (22.90%) patients were not interviewed for anti-TB service related questions because they reported that they had never received any anti-TB services since their enrollment to the facilities. The total participants in PMTCT and family planning service related interview were 116 (29.10%) and 222 (55.80%) patients respectively. The remaining patients were excluded from the interview on PMTCT and FP because they were not eligible for these services. The mean age of the participants was 35.46 years (SD=7.66, range: 20 to 53 years). One hundred and seventy eight of the respondents, (44.70%) had age of 30 to 39 years and majority of the study participants, 232 (58.30%) were females. More than half of the participants 226 (56.80%) were married and followers of Orthodox Christianity, 205 (51.50%). Majority of the patients, 247(62.10%) lived in urban area. One hundred and three (25.90%) had education level from grade 5-8. Farmers, 83 (20.90%) constituted a slightly higher percent of the study particcipants followed by merchants, 82 (20.60%) and house wives, 72 (18.10%). Patients remained clients at the study facilities for a period of six months to ten years with a mean of 3.95 years (SD=2.51). One hundred and eighty two (45.70%) of the participants had been on HIV/AIDS services at the study facilities for a period of 2 to 4 years.

Table 5. Socio demographic characteristics of patient participants at selected health centers of East Shoa Zone, Oromia, Ethiopia, 2017 (N=398).

Socio demographic profile		Number(%)
Age(in years)	20-29	97(24.40)
	30-39	178(44.70)
	40-49	104(26.10)
	>=50	19(4.80)
Gender	Male	166(41.70)
	Female	232(58.30)
Marital status	Single	92(23.10)
	Married	226(56.80)
	Divorced	46(11.60)
	Widowed	34(8.50)
Religion	Orthodox	205(51.50)
	Protestant	95(23.90)
	Muslim	69(17.30)
	Others*	29(7.30)
Residence	Urban	247(62.10)
	Rural	151(37.90)
Educational status	Unable to read and write	46(11.60)
	Able to read and write but no formal education	62(15.60)
	Grade 1-4	76(19.10)
	Grade 5-8	103(25.90)
	Grade 9-12	88(22.10)
	Above 12	23(5.80)
occupation	Government employee	39(9.80)
	Merchant	82(20.60)
	Daily laborer	64(16.10)
	House wife	72(18.10)
	Farmer	83(20.90)
	Student	17(4.30)
	Others**	41(10.30)
Length of time as a client	<2years	73(18.30)
	2-4 years	182(45.70)
	>4years	143(35.90)

** Wakefata, Adventist and Jhova witnesses **waiter/waitress, driver, house maid, Guard at private company and shoeshine*

5.4.2 Satisfaction with HIV/AIDS Services

Likert scale results revealed that the overall mean rate of patient satisfaction with different HIV/AIDS services was 3.16 (SD=0.87). The item with the highest mean score (4.18±0.61) was satisfaction in relation to the availability of anti-TB medicines in pharmacy while waiting time to get pharmacy service was an item with the lowest mean score (1.92±0.81). Patient satisfaction was also higher on the availability of laboratory facilities, location of ART clinic, FP services, PMTCT services and privacy during disease counseling at ART clinic with the mean scores of 3.89 (SD=0.71), 3.86 (SD=1.06), 3.84 (SD=0.79), 3.76 (SD=0.75) and 3.70 (SD=0.97) respectively. But it was lower with waiting time at the laboratory (2.20±0.89), convenience of the pharmacy dispensing area (2.34±1.14), privacy during drug counseling at ART pharmacy (2.42±0.98), cleanliness and comfort of ART laboratory waiting area (2.46±1.16) and privacy in ART laboratory (2.70±0.97). Patients were also less satisfied with the cleanliness and comfort of ART pharmacy waiting area (2.72±1.24) and cleanliness and attractiveness of the ART laboratory (2.84±1.16). Two hundred and eighty six (71.90%) patients said that they were satisfied with availability of laboratory facilities and almost quarter (24.60%) patients reported they were very satisfied with location (accessibility) of ART clinic. Appreciable proportion of patients, 188 (47.20%) stated they were dissatisfied with the privacy they got at ART pharmacy during drug counseling and 96 (24.10%) patients said they were very dissatisfied with the convenience of ART pharmacy dispensing area. One hundred and seven (26.90%) were neutral regarding their level of involvement in their own medical decisions (Table 6).

Table 6. HIV/AIDS Patients' satisfaction with different services at selected health centers of East Shoa Zone, Oromia, Ethiopia, 2017 (N=398).

		Levelof satisfaction, N(%)					
	Variable	VD	D	N	S	VS	Mean(SD)
	ART clinic services						
	Location of ART clinic (accessibility)	18(4.5)	45(11.3)	11(2.8)	226(56.8)	98(24.6)	3.86(1.06)
	Cleanliness and comfort of the ART clinic waiting area	26(6.5)	160(40.2)	17(4.3)	135(33.9)	60(15.1)	3.11(1.26)
	Counseling on disease at ART clinic	18(4.5)	116(29.1)	32(8.0)	188(47.2)	44(11.1)	3.31(1.14)
	ART pharmacy services						
	Location of the pharmacy (accessibility)	21(5.3)	88(22.1)	16(4.0)	226(56.8)	47(11.8)	3.48(1.12)
	Cleanliness and comfort of pharmacy waiting area	57(14.3)	177(44.5)	15(3.8)	119(29.9)	30(7.5)	2.72(1.24)
	Convenience of the dispensing area	96(24.1)	178(44.7)	26(6.5)	88(22.1)	10(2.5)	2.34(1.14)
	Promptness of the dispensers in processing prescription	12(3.0)	106(26.6)	29(7.3)	243(61.1)	8(2.0)	3.32(0.99)
	Medicine adherence counseling	10(2.5)	119(29.9)	41(10.3)	218(54.8)	10(2.5)	3.25(0.99)
ART services	Information given on proper storage of your medication	9(2.3)	113(28.4)	43(10.8)	221(55.5)	12(30.0)	3.29(0.99)
	Availability of prescribed medicines in the pharmacy	74(18.6)	81(20.4)	53(13.3)	163(41.0)	27(6.8)	3.01(1.28)
	ART Laboratory services						
	Location of ART laboratory (accessibility)	14(3.5)	101(25.4)	24(6.0)	238(59.8)	21(5.3)	3.38(1.03)
	Cleanliness and comfort of ART laboratory waiting area	88(22.1)	170(42.7)	37(9.3)	90(22.6)	13(3.3)	2.46(1.16)
	Cleanliness and attractiveness of the laboratory	57(14.3)	121(30.4)	59(14.8)	151(37.9)	10(2.5)	2.84(1.16)
	Information provided to you during specimen collection	16(4.0)	127(31.9)	83(20.9)	168(42.2)	4(1.0)	3.04(0.97)
	Promptness of laboratory staff in accomplishing lab. activities	10(2.5)	118(29.6)	57(14.3)	209(52.5)	4(1.0)	3.20(0.96)
	Availability of laboratory facilities	2(0.5)	25(6.3)	36(9.0)	286(71.9)	49(12.3)	3.89(0.71)
	Location of TB clinic (accessibility)	3(0.97)	62(20.2)	16(5.2)	180(58.6)	46(15.0)	3.66(1.00)
	Cleanliness and comfort of TB clinic waiting area	34(11.1)	90(29.3)	30(9.8)	106(34.5)	47(15.3)	3.14(1.30)
Anti-TB	Counseling on TB	0(0.0)	62(20.2)	27(8.8)	193(62.9)	25(8.1)	3.59(0.90)
services	Counseling on anti-TB medicines	2(0.7)	54(17.6)	25(8.1)	196(63.8)	30(9.8)	3.64(0.90)
	Availability of anti-TB medicines in the pharmacy	0(0.0)	7(2.3)	13(4.2)	205(66.8)	82(26.7)	4.18(0.61)

	PMTCT services	0(0.0)	9(7.8)	23(19.8)	71(61.2)	13(11.2)	3.76(0.75)
	Family planning services	1(0.5)	22(9.9)	18(8.1)	152(68.5)	29(13.1)	3.84(0.79)
	Psycho social and nutritional support	9(2.3)	84(21.1)	90(22.6)	183(46.0)	32(8.0)	3.36(0.98)
Staff availability	Availability of service providers during working hours	6(1.5)	48(12.1)	75(18.8)	249(62.6)	20(5.0)	3.62(0.76)
Skill of service providers	The way professionals explain medical terms to you	1(0.3)	90(22.6)	87(21.9)	216(54.3)	4(1.0)	3.33(0.84)
	Your level of involvement in your medical decisions	3(0.8)	118(29.6)	107(26.9)	168(42.2)	2(0.5)	3.12(0.87)
Privacy	Privacy during disease counseling at ART clinic	9(2.3)	63(15.8)	23(5.8)	247(62.1)	56(14.1)	3.70(0.97)
	Privacy during medicine counseling at ART pharmacy	60(15.1)	188(47.2)	73(18.3)	75(18.8)	2(0.5)	2.42(0.98)
	Privacy in ART laboratory	32(8.0)	162(40.7)	105(26.4)	93(23.4)	6(1.5)	2.70(0.97)
Assistance to patients	Courtesy and respect of service providers to you	1(0.3	55(13.8)	102(25.6)	218(54.8)	22(5.5)	3.52(0.81)
	Willingness of professionals to listen and answer your questions	3(0.8)	76(19.1)	96(24.1)	209(52.5)	14(3.5)	3.39(0.86)
	Attention of professionals to your individual needs	4(1.0)	107(26.9)	106(26.6)	176(44.2)	5(1.3)	3.18(0.88)
Others	Waiting time for disease counseling at ART clinic	41(10.3)	123(30.9)	40(10.1)	183(46.0)	11(2.8)	3.00(1.14)
	Waiting time to get pharmacy services	122(30.7)	211(53.0)	41(10.3)	23(5.8)	1(0.3)	1.92(0.81)
	Waiting time to get TB services	9(2.9)	61(19.9)	59(19.2)	167(54.4)	11(3.6)	3.36(0.94)
	Waiting time at the laboratory	77(19.3)	213(53.5)	61(15.3)	47(11.8)	0(0.0)	2.20(0.89)
*General satisfaction with the overall HIV/AIDS services		1(0.3)	119(29.9)	93(23.4)	184(46.2)	1(0.3)	3.16(0.87)

*It was calculated from a single question

VD=Very Dissatisfied N=Neutral VS=Very Satisfied

D=Dissatisfied S=Satisfied

5.4.3 Factors associated with patient satisfaction

Analysis of patient satisfaction by sociodemographic characteristics revealed that only occupation (being merchant and being student) had association with the over all patient satisfaction. Students were 5 times more likely to be satisfied compared to government employees (AOR=5.12; CI [1.20-21.79]). Merchants were 2.6 times more likely to be satisfied with the overall services compared to government employees (AOR=2.61; 95% CI [1.17-5.85]). Daily laborer, housewife and farmers had no difference in general satisfaction as compared to government employees. There was no association between patients' gender, age, marital status, residence, educational status and length of time spent at health centers as client and general satisfaction.

Table 7. Patients' General satisfaction with the overall HIV/AIDS services at selected health centers of East Shoa Zone, Oromia, Ethiopia,2017 (N=398).

Variable	General Satisfaction			
	Satisfied, N(%)	Dissatisfied, N(%)	COR	AOR
		Gender		
Male	64(38.60)	102(61.40)	1.00	1.00
Female	120(51.70)	112(48.30)	1.47[0.98-2.19]	1.55[0.94-2.56]
		Age		
20-29	40(41.30)	57(58.80)	0.49 [0.18-1.33]	0.50[0.16-1.64]
30-39	88(49.40)	90(50.60)	0.74[0.29-1.94]	0.81[0.28-2.31]
40-49	45(43.30)	59(56.70)	0.56[0.21-1.49]	0.55[0.19-1.62]
>=50	11(57.90)	8(42.10)	1.00	1.00
		Marital status		
Single	36(39.10)	56(60.90)	0.64[0.29-1.42]	0.55[0.22-1.34]
Married	103(45.60)	123(54.40)	0.82[0.40-1.69]	0.67[0.30-1.47]
Divorced	31(67.40)	15(32.60)	1.88[0.76-4.64]	2.10[0.80-5.51]
Widowed	16(47.06)	18(52.90)	1.00	1.00
		Residence		
Urban	108(43.70)	139(56.30)	1.00	1.00
Rural	77(60.00)	74(49.00)	1.28[0.86-1.93]	1.05[0.58-1.89]

Table 7. Continued…

Variable	General Satisfaction			
	Satisfied, N(%)	Dissatisfied, N(%)	COR	AOR
		Educational status		
Unable to read and write	24(52.20)	22(47.80)	1.70[0.61-4.70]	2.21[0.54-9.01]
Able to read and write but no formal education	24(38.70)	38(61.30)	0.98[0.37-2.62]	1.09[0.29-4.12]
Grade 1-4	32(42.10)	44(57.90)	1.19[0.46-3.09]	1.28[0.34-4.74]
Grade 5-8	53(51.50)	50(48.50)	1.59[0.63-3.99]	1.80[0.51-6.42]
Grade 9-12	40(45.50)	48(54.50)	1.49[0.58-3.79]	1.46[0.46-4.68]
Above 12	8(34.80)	15(65.20)	1.00	1.00
		Occupation		
Government employee	12(30.80)	27(69.20)	1.00	1.00
Merchant	45(54.90)	37(45.10)	2.56[1.15-5.66][b]	2.61[1.17-5.85][b]
Daily laborer	23(35.90)	41(59.40)	1.12[0.49-2.60]	1.00[0.32-3.13]
House wife	33(45.80)	39(54.20)	2.11[0.94-4.76]	1.68[0.56-5.01]
Farmer	41(49.40)	42(50.60)	1.95[0.88-4.31]	1.53[0.47-4.96]
Student	11(64.70)	6(35.30)	3.67[1.11-12.14][b]	5.12[1.20-21.79][b]
Others*	14(34.10)	27(65.80)	1.04[0.41-2.62]	0.90[0.27-2.97]
		Length of time as a client		
<2years	30(41.10)	43(58.90)	1.00	1.00
2-4years	84(46.20)	98(53.80)	1.26[0.73-2.18]	1.00[0.53-1.89]
>4years	69(48.30)	74(51.70)	1.37[0.78-2.43]	1.02[0.50-2.10]

**Waiter/waitress, driver, house maid, Guard at private company and shoeshine*

[b]*Statistical significance (P<0.05)*

6. DISCUSSION

Types of services delivered to HIV/AIDS patients

The present study revealed that all health centers were offering anti-TB services to HIV/AIDS patients including counseling on TB and anti-TB medicines, screening for active TB, isoniazid preventive therapy and treatment of active TB (DOTS) to HIV positive patients. This goes inline with WHO recommendation regarding the package of care that should be given to HIV/AIDS patients so as to tackle the health and economic consequences of this infection (WHO, 2013). All health centers in this study had a separate room for providing anti-TB services similar to a study from Malawi (Rondinelli et al., 2011). Provision of these services in a separate room prevents the contamination of healthy person by the diseased and avoids the spread of this infection.

The current study indicated that family planning methods (with counseling) including condoms, oral contraceptive pills, injectables, implants and IUCD were available in all the study facilities and hence patients had an opportunity to choose contraceptive method they prefer. This contradicts a study conducted in Nigeria that showed up to 35% of female clients on antiretroviral therapy (ART) had unmet contraceptive needs (Carraher et al., 2011).

As per this study, some health centers had no FP guide line and there was also lower/zero utilization rate in the facilities where the guideline was available. This may compromise the quality of the services delivered and hence the availability of the guideline and its utilization rate needs to be improved.

Home based care has the advantage of offering an adjustable and flexible care provision for HIV/AIDS patients as well as their affected families (ILO, 2011). This program largely supplements the formal health care provided at health facilities through providing psychosocial, economic, palliative and nutritional supports at home. Despite its high significance however, such care rarely exists in low income countries including Ethiopia (Wringe et al., 2010; MacNeil, 2016). This parallels the finding of this study which indicated only two of the eight health centers (25%) were providing home based care. All facilities in the current study had support group/s established to help patients cope with psychological, economic and social consequences of the infection similar to the findings of Rondinelli et al (2011) but they were found to be

performing below what was expected from them. The low performance happened due to workload of the support groups and lack of motivation.

The current study documented that all the study facilities were providing HIV/AIDS counseling, partner counseling, cotrimoxazole prophylaxis, WHO disease staging, weight measurement and prevention/treatment of opportunistic infections to HIV/AIDS patients. They were also offering ART and anti pain medicines prescription and dispensing and medicine adherence counseling and assessment to HIV/AIDS patients as per WHO ART guideline and the Ethiopian HIV prevention,care and treatment guideline (MOH, 2014; WHO, 2016).

Regarding the availability of ART service guideline and HCT guideline, it was found that all the studied facilities had ART and HCT guideline but they rarely used them in practice. The lower utilization rate of these documents might have resulted from the service providers' assumption that they knew the contents of the documents and hence they wouldn't need to refer to them. This lower utilization rate may reduce the quality of the services delivered and therefore need to be improved.

Eventhough pateints in the current study were frequently appointed to receive their ART services biweekly, monthly or bimonthly similar to a study from Addis Ababa (Berhanemeskel et al., 2016), the respondents said that a number of patients missed their appointment dates. This happened mainly due to distance from facility, forgetting the appointment date, side effects of drugs, economic problem (lack of money for transport) and fear of stigma and discrimination from peers and society. Such non-adherence to schedule hinders the ART program and opens door for disease progression, development of drug resistance and death (Pasquet et al., 2010).

The current study indicated that all of the studied health centers were providing PMTCT services including HIV/AIDS counseling, mother and infant prophylaxis at delivery and enrollment of mothers and infants in HIV care program. This agrees with WHO as well as Ethiopian PMTCT guidelines that recommended the provision of PMTCT services as one of the main strategies towards eliminating HIV infection (FHAPCO and FMOH, 2014; WHO, 2013b). It also agrees with facility based studies done in Ethiopia that indicated PMTCT has been expanded in

accelerated fashion throughout the country currently with most public hospitals and health centers providing these services (Bayou et al., 2015). This study also revealed that PMTCT service providers in majority of the health centers (87.50%) had taken in service training and this agrees with WHO guideline and Ethiopian HIV prevention,care and treatment guideline which recommended training of health workers to ensure high quality care and timely implementation of updated national policies (MOH, 2014; WHO, 2016).

Most health centers in the current study had written protocols for conducting HIV test eventhough they were said to be rarely used in practice. The availability of material safety data sheet and fire extinguisher were minimal. Mboera et al (2015) found similar result in a study they conducted in Tanzania addressing the readiness of the national health laboratory system in supporting care and treatment of HIV/AIDS.

The present study identified labeling problem on chemical containers in majority of the health centers. Chemical containers in these facilities were either unlabeled or lacked clear labeling for identity, hazard warning and date and this may lead to difficulty in identifying chemicals and hence wrong use of one chemical instead of the other. Lack of clearly visible expiry date on the containers may cause use of expired chemical. Laboratory room, supplies and equipments were observed to be unhygienic in 50% health centers and this may create favourable environment for microorganisms that can put health of the patients and service providers at danger and may degrade patient satisfaction with the services delivered.

Challenges experienced in delivering HIV/AIDS services

The respondents reported that they experienced various challenges while providing HIV/AIDS services of which shortage of trained human power was one. This was a problem in the study health centers, mainly in providing ART services and TB services. ART and TB service providers rarely received onjob trainings and this opposes WHO ART guideline and Ethiopian ART program implementation guideline that recommend all health workers, including community health workers and lay providers to be trained, mentored and supervised to ensure high-quality care and timely implementation of updated national policies (FHAPCO and MOH, 2007; WHO, 2016). The shortage of human power coupled with lack of training in the current

study may restrict the facilities from providing a proper service to patients and hence needs to be solved.

The current study identified the absence of CD_4 count machine and its reagent (where the machine was available) as one of the challenges in providing HIV/AIDS services similar to a study from Bahir Dar (Kifle et al., 2009). The key informants justified that the absence of this machine added to scarcity of its reagent had limited the service providers from knowing the health status of their patients and from making proper medical decision. Therefore, this study recommends the health centers and other stakeholders to adjust the way the health facilities can have their own CD4 count machine.

Patients' loss to follow up, restarting medication in other facility without informing the former facility, patients' inability to keep appointment date and stopping medication by self-decision were also among the challenges identified by the key informants. These events might happened because of the weakness/absence of a system required to create strong patient-facility linkage. It might also be due to lower patients' understanding of the importance of proper adherence to the services given in health facility. These events can jeopardize the health of the patients and there fore, the health centers are expected to closely work with their patients and to strengthen their system.

The other problems identified in the current study were economic weakness of most patients (which goes to the extent of failing to afford one's food) and shortage of nutritional supplements at some health centers. Added to the debilitating nature of the disease, these factors can seriously harm the health of the patients and hence the health centers should cooperate with the other stakeholders so as to solve these and other associated problems.

Availability of ARV and related medicines

Findings from the current study indicated that majority of the health centers, 6 (75%) faced the stock out of one or more ARV medicines on the day of visit and all health centers, 8 (100%) reported the stock out of one or more ARV medicines in six months prior to the study. This dis agrees with a study done in Oromia National Regional State that has shown the availability of

ARV medicines in health centers of the region to be 100% (Alemayehu, 2009). It also disagrees with the study done in Ethiopia that showed the stock out to be non-existent or minimal for ARV medicines (USAID/GHTAP, 2009). The stockout in the current study may imply that the suppliers need to improve their pharmaceutical management system (to overcome medicines shortage in the store which was stated as one of the causes of medicines stockout in health facilities) and the health centers should see the quantity they order and when they order. The number of facilities that experienced the stockout of ARV drugs was much higher than the national survey conducted in South Africa, where 14% of the facilities reported a stock out of adult ARV drugs and 6% for paediatric ARV drugs (Treatment Action Campaign, 2015). The higher stockout in the current study might be related to the difference in the level of development between the two countries that could influence the supply of pharmaceuticals to health facilities and the differences in the structure of supply chain management between the two countries.

Pasquet et al (2010) stated that stockout of ARV medicines (either due to facility problem and/or supplier problem) put patients at risk of disease progression and death, in drug resistance development, hampers progress towards universal access, and diminishes the credibility of ART programmes in the eyes of patients, community and healthcare providers and generally put the public health in danger. This evidence indicates that the study facilities and the suppliers are expected to work towards solving the problem of ARV medicines stockout, mainly those with relatively longer stockout duration (TDF300/3TC300/EFV600, EFV600, NVP240ml syrup).

Continuous availability of proper anti-TB medicines is a prerequisite to ensure the correct clinical management of TB and to reduce health care cost associated with it (Raviglione et al., 2006). Despite this however, only half of the study facilities had all the required anti TB medicines on day of visit in the current study. Five health centers (62.50%) also reported that they faced the stockout of one or more anti-TB medicines in the six months prior to the study. Such an interrupted availability of medicines in the facilities put patients at risk of treatment failure/drug resistance (Raviglione et al., 2006) and hence needs to be addressed properly.

Prevention and treatment of opportunistic infections other than TB is an essential component of comprehensive HIV/AIDS treatment and care. However, certain health facilities in the developed

and developing world do not have access to medicines required to prevent/treat these infections and hence many patients have OIs (Constance et al., 2012). The present investigation also showed that majority of the health centers (75.00%) had shortage of one or more of these OIs medicines on the day of visit and in the six months prior to the study. This shortage put patients' health at risk and degrade their trust in health system (Pasquet et al., 2010) and hence should get a solution.

The present finding indicated that more than 70% of the study facilities experienced the stockout of one or more commonly used anti pain medicines on the day of visit as well as in six months prior to the study. Congruent to this finding, a study conducted in selected facilities on all regions of Ethiopia indicated stock out was present for almost all kinds of pain relieving medicines (EPHA, 2011). Stock out was more often reported in the above study for Ibuprofen and tramadol tablets compared to the other analgesics just similar to the current study where considerable number of study facilities (71.40% for Ibuprofen and 66.70% for tramadol) experienced the stckout of these medicines (EPHA, 2011). Findings from the current study is also supported by the World Health Organization report that estimated 5 billion people living in countries with no or insufficient access to treatment for pain. In these countries, nearly 1 million HIV/AIDS patients are suffering without adequate pain treatment each year (WHO, 2009).

Patient satisfaction with HIV/AIDS services

Results of the service satisfaction scale indicated that patients in the study facilities were generally slightly satisfied with the services they obtained. The mean scores were positive (>2.5/5) in majority and they mainly averaged between 3 and 4 on the likert scale. The overall mean rate of patient satisfaction in the current study (3.16, SD=0.87) was lower compared to a study from South Africa and Tanzania that showed high overall patient satisfaction with HIV/AIDS services (Wouters et al.,2008; Miller et al., 2014). It is also lower than a study conducted in Kenya where majority of the patients ranked over all satisfaction high with a mean of 5 on a five point likert scale (Mwihoti et al., 2014).

Availability of anti TB medicines had the highest mean satisfaction score (4.18 ± 0.61) among patient satisfaction indicators used in the current study. The high satisfaction score with this item

may be due to the fact that the facilities place emergency order or borrow from nearby facilities at the time of stockout. The facilities took these measures may be because they understood the risks of missing antiTB medicines, especially for HIV/AIDS patients (Raviglione et al., 2006; WHO, 2013).

Similar to findings of the current investigation, a research done in Addis Ababa revealed that patients were least satisfied by the time they wait to get pharmacy services (Karunamoorthi et al., 2009). Incongruent to the findings of this study however, a study conducted in Dar es Salaam, Tanzania showed that majority of HIV/AIDS patients were comfortable with waiting time for getting pharmacy services (Kagashe et al, 2011). Abebe et al (2016) also found from their study in Gondar that almost all (95.1%) of the HIV/AIDS patients were well satisfied with waiting time to get pharmacy service. The dissatisfaction in the current study may be due to a limited human power available to provide pharmacy services and problem in promptness of the available service providers. It might also be due to differences in the facility level: the comparator studies were conducted in hospitals which would have higher number of pharmacists/druggists compared to the current study which was conducted in health centers.

Results of this study revealed that patient satisfaction was higher on the availability of laboratory facilities (mean=3.89, SD=0.71). This is comparable to a study done in Sidama Zone where the mean satisfaction score with this item was found to be 3.89(±0.86) (Belay et al., 2013). Satisfaction with the location of ART clinic and family planning services were also found to be high similar to a study from South Africa (Bezuidenhout et al., 2014).

Patient satisfaction was lower in this study with respect to time spent waiting for laboratory services (Mean=2.20, SD=0.89) unlike a study from Sidama Zone (Mean=3.30, SD=0.94) (Belay et al., 2013) and a study done in Addis Ababa (Mean=3.40, SD=0.87) (Mindaye et al., 2012). The lower satisfaction in this study may be associated with the unbalanced patient load and human resource available to perform laboratory services and problem with promptness of the laboratory specialists. It might also be due to differences in facility level: the current study was conducted in health centers which would have fewer laboratory specialists compared to the comparator studies which were conducted in hospitals.

Factors associated with patient satisfaction

The current study found that students (AOR=5.12; CI [1.20-21.79]) and merchants (AOR=2.61; 95% CI [1.17-5.85]) were more likely to be satisfied with HIV/AIDS services compared to government employees. This is inconsistent to a study from Vietnam where these characteristics were shown to have no association with patient satisfaction on HIV/AIDS services (Tran et al., 2012). Most of merchants spend their time doing their individual businesses (which allows them to visit health facility and get the desired service when need arise and hence which might increase their level of satisfaction) unlike government employee who need permission from work place to visit health facility. The higher satisfaction among students compared to government employees might be related to the differences in service type expectation and service level expectation between these groups.

Daily laborer, housewife and farmers had no difference in general satisfaction compared to government employees. Gender and age were not associated with overall patient satisfaction in this study. Similar finding was reported by Iwu et al (2017) while study conducted in Kenya and India showed that females had higher general satisfaction as compared to males (Mwihoti et al., 2014; Vahab et al., 2016). A study from Vietnam also indicated that older patients had higher satisfaction compared to youngers (Tran et al., 2012).

In the current study, marital status, residence and educational status were found to be not associated with overall satisfaction unlike a study conducted in Nigeria that showed a significant association between these variables and overall patient satisfaction (Iwu et al., 2017). Mwihoti et al (2014) also found that divorced patients were more satisfied compared to the married group. Length of time patients spent as clients at the health centers had no association with general satisfaction just similar to the findings of Tran et al (2012).

7. STRENGTH AND LIMITATION OF THE STUDY

Use of both quantitative and qualitative methods to supplement each other was the strength of this study.

The possibility of social desirability bias in patient interview, since the interview was conducted in health center setting, was the limitation of the current study. Recall bias from the store managers interview, as they might not remember whether medicines were stockedout in six months period prior to the study was also another limitation.

8. CONCLUSION

The study facilities were providing different services to HIV/AIDS patients including continuum of care services, ART services, PMTCT services and HIV/AIDS laboratory services. They faced different challenges while delivering these services including scarcity of trained human power and failure to make patients adhere to the services properly. Majority of the study facilities faced the stockout of NVP 240ml syrup and AZT300/3TC150/NVP200 from ARV medicines and they experienced the stockout of INH 100 and E 100 from anti-TB medicines. Cotrimoxazole 960 mg tablet, Ibuprofen 400mg tablet and Tramadol 50mg tablet were also the main medicines whose stockout was reported. There were differences in the levels of patient satisfaction with different HIV/AIDS services but they were generally slightly satisfied with the HIV/AIDS services they obtained from the facilities. Overall patient satisfaction was found to be significantly associated with occupation of the patient (being merchant and student).

9. RECOMMENDATIONS

Based on the findings the following recommendations can be made:

- Health facilities should hire additional human power so as to improve the quality of the services given to patients
- Ministry of health, incollaboration with other stackholders(regional health bureau, zonal health office, NGOs,….) should train the service providers as required to enable them update them selves with the newer health information
- Health facilities should quantify medicines properly and order them on time
- The suppliers should store enough of medicines and supply them to facilities on time
- The facilities should strengthen their adherence counseling to enable patients adhere to the services properly
- Facilities that lack CD4 count machine should communicate with the zonal health office and regional health bureau on how to have their own CD4 count machine and those that have CD4 machine should fill it with reagent as required
- Service providers should properly use the available service guidelines and facilities should communicate zonal health office and other concerned body for unavailable guidelines
- Facilities should keep laboratory room,supplies and equipments hygienic
- Chemical containers in the laboratory should be properly labelled

Suggestion for further Work

- Similar studies should be done in different parts of the country in hospitals as well as health centers to have a general picture of HIV/AIDS services quality in Ethiopia.

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11. ANNEXES

ANNEX I: Data collection instrument (English version)

ADDIS ABABA UNIVERSITY

SCHOOL OF GARDUATE STUDIES

DEPARTMENT OF PHARMACEUTICS AND SOCIAL PHARMACY,

SCHOOL OF PHARMACY

"Assessment of HIV/AIDS services quality in health centers of East Shoa Zone"

Section 1: Interview questionnaires for the health professionals working in the selected health centers

Verbal consent form before conducting the interview

My name is Temesgen aferu. I am postgraduate student at Addis Ababa University. I am conducting a research entitled "Assessment of HIV/AIDS services quality in health centers of east shoa zone". I conduct this research for the partial fulfillment of Master's Degree of science in pharmacoepidimology and social pharmacy program. I would like to ask you few questions concerning HIV/AIDS services quality at your facility. The interview would take 20-30 minutes of your time. The purpose of the study is to assess what the quality of services given to HIV/AIDS patients looks like in east shoa zone. The study is believed to be helpful for identifying and improving the various problems related to HIV/AIDS service delivery in health centers of the zone. Your participation is voluntary. You can withdraw from the study at any time, and there is no any problem happening to you or your facility for participating in or withdrawing from the study. All your responses will remain strictly confidential. The information you provide will be analyzed in aggregate form with the responses of the other participants.

If you have/will have any questions or problems, you can contact me by:

Phone No: +251910946406

Email: temesgena08@yahoo.com

Do you understand all the information I gave you? A. yes □ B. No □

If yes, do I have your permission to continue? A. yes □ B. No □

If yes, the interview will continue

Back ground of the health facility

Name_____ location (Rural_____ urban_____)

1.1. Structured questionnaire for TB focal person / anti-TB service coordinator interview in the selected health centers

Back ground information of the interviewee

1. Age (in years) _____
2. Sex : Male □ Female □
3. Highest level of education _____
4. Work experience _____

A. Continuum of care Services

A1. TB diagnosis and treatment for HIV- positive patients

1. Which anti-TB services does your facility offer ?(Multiple response possible)
   A. Counseling on TB □ D. DOTS(treatment of active TB) □
   B. Screening for active TB □ E. Others, specify _____
   C. Provision of preventive therapy (Isoniazid) □
2. Where are anti-TB services offered?
   A. In the same service room with the ART service □
   B. In separate Class from ART clinic within the facility □
3. Who usually provides TB services?
   A. Doctors □ E. HIV/AIDS counselors □
   B. Health officers □ F. Peer PLWHA □
   C. Nurses □ G. Others, specify _____
   D. Pharmacist/druggist at ART clinic □
4. Are these professionals enough in number to provide anti-TB services? A. Yes □ B. No □
5. How often do health personnels offering anti-TB services receive training in TB management**?**
   A. Often □ B. sometimes □ C. Rarely □ D. never □

1.2. Structured questionnaires for ART service coordinator interview in the selected health centers

Back ground information of the interviewee

1. Age (in years) _____
2. Sex : Male □ Female □
3. Highest level of education _____
4. Work experience _____

A2. Family Planning Services Integrated with HIV/AIDS Care

1. Does your facility offer family planning within HIV/AIDS services? A. Yes □ B. No □
2. If your answer to question 1 is yes, which family planning services do you offer?(multiple response possible)
   A. Counseling/providing information on FP methods available, methods' ability to prevent STI and HIV infection □
   B. Providing condoms, including instructions for using them □
   C. providing other contraceptive methods □
   D. Other, specify _____
3. Where are family planning services offered?
   A. In the same room with ART services □
   B. In a different site from ART service site within the facility □
   C. Other, specify _____
4. Who usually provides family planning services?
   A. Nurses □ D. Peer PLHA □
   B. Pharmacist/druggist at ART clinic □ E. others, specify _____
   C. HIV counselors □
5. Are these professionals enough in number to provide FP services? A. Yes □ B. No □

A3. Home based care to HIV/AIDS patients

1. Does your health center facilitate the provision of home based care to HIV/AIDS patients?

   A. Yes □ B. No □

2. If your answer to question 1 is yes, which of the following care does it facilitate? (multiple response possible)

   A. Management of common health problems at home □ D. Psychosocial and spiritual care□

   B. Provision of basic equipment,medicines and supplies□E. Nutrition education □

   C. Infection prevention and control at home □ F. Others, specify _____

3. Who usually provide these home based care to HIV/AIDS patients?

   A. Family members □ C. health center staffs(service providers) □

   B. Volunteer community members □ D. Other, specify _____

A4. Psychosocial support to HIV/AIDS patients

1. What types of support groups are available to help patients deal with the psychosocial consequences of HIV infection?(multiple response possible)

   A. Support group on-site (Health professionals) □

   B. Patient support groups □

   C. Support group elsewhere in the community □

   D. Other, specify _____

   E. No support group exist

2. What are the main jobs that this /these support group/s do?

   _____

3. How do you know if a patient is in a support group?(multiple response possible)

   A. Follow -up system in place □ C. Ask patient □

   B. Check with the support group □ D. No system in place □

A5. Nutritional support and advices to HIV positive patients

1. What nutritional support/supplement is available at your facility for HIV/AIDS patients? (multiple response possible)

   A. Plumpy nut □ B. plumpy sup □ C. Other, specify _____

B. Pre- ART and ART Services

1. Which type of pre-ART services are given in this facility?(multiple response possible)
   A. HIV/AIDS counseling □ E. WHO staging □
   B. Partner counseling(if in couple) □ F. Weight measurement □
   C. CD4 count □ G. Other, specify _____
   D. Cotrimoxazole prophylaxis □
2. Which ART services are available at this facility?(multiple response possible)
   A. ART ,opportunistic infections and anti pain medicines prescription and dispensing □
   B. Medicine adherence counseling and assessment □
   C. Other, specify _____
3. How long have these services been offered at this facility? _____
4. What is the number of days per week that ART services are given?_____
5. Who provides ART services?
   A. Physicians □ E. Druggist □
   B. Health officers □ F. counselors □
   C. Nurses □ G. Others, specify_____
   D. Pharmacists □
6. Are these professionals enough in number to provide ART services? A. Yes □ B. No □
7. How often do health personnels giving ART services receive training about their services**?**
   A. Often □ B. Sometimes □ C. Rarely □ D. Never □
8. How often are HIV/AIDS patients scheduled to receive their ART services?
   A. Every two weeks □ D. Every three month □
   B. Monthly □ E. Other, specify _____
   C. Bimonthly □
9. Do all the patients come to receive their ART services as scheduled? A. Yes □ B. No □
10. If your answer is no to question 9, can you explain why? _____

1.3 Structured questionnaire for *Maternal and Child Health (MCH) service coordinator* interview in the selected health centers

Back ground information of the interviewee

1. Age (in years) _____
2. Sex : Male □ Female □
3. Highest level of education _____
4. Work experience _____

C. Prevention of Mother To Child Transmission (PMTCT) Services

1. Are PMTCT services available within your health facility? A. Yes □ B. No □
2. If your answer is yes to question 1, what types of PMTCT services are available?(multiple response possible)
   A. Mother prophylaxis at delivery □ D. Enrolling infants in HIV care program □
   B. Infant prophylaxis at delivery □ E. Others, specify_____
   C. Enrolling mothers in HIV care program □
3. Are there health personnels trained in PMTCT service? A Yes □ B. No □
4. If your answer is yes to question 3, who are they?
   A. Physicians □ D. HIV/AIDS counselors □
   B. Health officers □ E. Pharmacist/druggist □
   C. Nurses □ F. Others, specify _____
5. Are these professionals enough in number to provide PMTCT services? A.Yes □ B. No □

1. 4 Structured questionnaire for *laboratory representative* interview in the selected health centers

Back ground information of the interviewee

1. Age(in years) _____
2. Sex : Male □ Female □
3. Highest level of education _____
4. Work experience _____

D. HIV laboratory services

1. What is the number of staffs performing HIV/AIDS laboratory services at this facility?
   A. Laboratory specialist (degree) _____ C. Others, specify _____
   B. Laboratory specialist (diploma) _____
2. How often do these staffs receive training on HIV/AIDS laboratory services?
   A. Often □ B. Sometimes □ C. Rarely □ D. Never □
3. Have all the laboratory staffs been trained on safety issues in the laboratory?
   A. Yes □ B. No □
4. Have all the laboratory staffs been trained on lab. Quality assurance?
   A. Yes □ B. No □

Section 2. Availability of HIV/AIDS related medicines at the selected health centers (To be assessed through *store visit and store manager interview*)

Table 1. Stock data for HIV/AIDS related medicines (for the past 6 months and day of the visit):

Hint:

1= whether bin card is available for each product(Answered as Y for Yes or N for No)

2= whether bin card has been updated within the last 30 days for each product(Answered as Y for Yes or N for No). Note: If the balance was 0 the last time the bin card was updated and the facility has not received any resupply of the product, the bin card will be considered up-to-date.

3= whether the facility is experiencing a stock out of the product on the day of visit according to physical inventory (Answered as Y for Yes or N for No)

4=whether the facility has had any stock outs of the product during the most recent six full months before the day of visit(Answered as Y for Yes or N for No)

5= how many times the product stocked out during the most recent full six months before the day of visit according to bin cards if available, or to a store personnel if not

6= total number of days the product was stocked out during the most recent full 6 months before the day of the visit.

7= Reason(s) for stock outs of any product that experienced a stock out in the last six complete months (including day of visit)

8= Measures taken for the product/s stocked out in the last six months period

Commodity type				1 (Y/N)	2 (Y/N)	3 (Y/N)	4 (Y/N)	5	6	7	8
ARV medicines	For adults and adolescents	FDC	TDF300/3TC300/EFV600								
			AZT300/3TC150/NVP200								
			AZT300/3TC150								
			TDF300/3TC300								
		Loose form	EFV 600mg								
			NVP 200mg								
	For pediatrics	FDC	AZT60/3TC30/ NVP50								
			AZT60/3TC30								
		Loose form	EFV 200mg								
			EFV 50mg								
			NVP 240ml syrup (50mg/5ml)								
Anti- TB medicines	For adults and adolescents	FDC	RHZE 150/75/400/275 mg								
			RH 150/75 mg								
		Loose form	E 400mg								
			INH 300mg								
			Streptomycin vial 1 gm								
	For pediatrics	FDC	RHZ 60/30/150 mg								
			RH 60/30mg								
			RH 60/60mg								
		Loose form	E100mg								
			INH 100mg								
Opportunistic infection medicines	Cotrimoxazole 240mg/5ml syrup										
	Cotrimoxazole 480mg tablet										
	Cotrimoxazole 960mg tablet										
	Ciprofloxacin 500mg tablet										
Anti pain medicines	Paracetamol 500mg tablet										
	Paracetamol 120mg/5ml syrup										
	Ibuprofen 400mg tablet										
	Diclofenac 100mg tablet										
	Tramadol 50mg tablet										

7. Reason(s) for stock outs:

A. Did not receive quantity ordered on time
B. did not order on time
C. Not quantified in sufficient quantity
D. stock out at the central level
E. Transportation problem

8. Measures taken when the product/s stocked out:

A. Placing an emergency order
B. Borrowing from nearby facilities
C. Sending patients back home with no supply
D. Substituting by another medicine

Section 3: check list for different HIV/AIDS service quality elements

Table 2. Observation check list for different HIV/AIDS service quality elements

No	Type service element	Availability at the facility		Remark
		Yes	No	
1	National HIV testing and counseling guidelines			
2	National FP services guidelines			
3	National TB services guidelines			
4	National VCT services guidelines			
5	National ART guidelines			
6	Written Laboratory Protocols for conducting HIV test			
7	National protocols for test disclosure			
8	CD4 count machine			If yes, a. working b. not working
9	Counseling room that allows privacy			
10	Material Safety Data Sheets (MSDS) for chemicals used and stored in the laboratory?			
11	Chemical containers labeled with identity, appropriate hazard warnings, and dates			
12	Laboratory room, supplies and equipments are kept hygienic and healthy			
13	Protective gloves are available in the laboratory			
14	Eye protection is available in the laboratory			
15	Lab coats are available in the laboratory			
16	Masks are available in the laboratory			
17	Fire extinguishers are available			

18. If the guidelines/written protocols are not available, why?_____

_____

Section 4: Interview Guides for the key informants interview

1. How do you assess the quality of the services given to HIV/AIDS patients (Anti-TB services, FP services, PMTCT services, ART services and ART laboratory services)?
2. What are the major challenges you faced while providing services to HIV/AIDS patients?
3. What measures did you take to overcome the challenges you experienced while providing HIV/AIDS services to your patients?
4. What do you think should be done to improve/maintain the quality of the services given to HIV/AIDS patients in your facility?

Thank you for your cooperation!!

Section 5: Questionnaires for assessing patient satisfaction with different HIV/AIDS services

Instruction to data collectors:

- Please greet the respondents before the interview
- Explain the aim of the study with special emphasis to its importance in identifying problems associated with patient satisfaction and in forwarding possible solutions
- Don't forget to listen to the respondent properly
- Conduct the interview in the way the informant feels comfortable

I. Socio demographic characteristics of the respondents. Put the right sign "✓" where choices are given

1. Age (in years)____

2. Sex: A. Male □ B. Female □

3. Marital status: A. Single □ B. Married □ C. Divorced □ D. widowed □

4. Religion: A. Orthodox □ B. Protestant □ C. Muslim □ D. Other_____

5. Residence: A. Urban □ B. Rural □

6. Educational status:

A. Unable to read and write □ D. Grade 5-8 □

B. Able to read and write but no formal education □ E. Grade 9-12 □

C. Grade 1-4 □ F. Above 12 □

7. Occupation: A. Government employee □ C. Daily laborer □ E. Farmer □ G. Other_____

B. Merchant □ D. House wife □ F. Student □

8. Length of time as a client: _____months:_____years

II. Satisfaction with different HIV/AIDS services

Instruction: The following table represents patients' satisfaction with different HIV/AIDS service components. Please ask each patient to rate their satisfaction level with each component and encircle the scores corresponding to the components.

Table 3. HIV/AIDS Patients' Ratings of Satisfaction with different services at selected health centers [Very Dissatisfied (VD)=1; Dissatisfied (D)=2; Neutral (N)=3; Satisfied(S)=4; Very Satisfied (VS)=5]

Variable		Service grade				
		VD	D	N	S	VS
ART services	**ART clinic services**					
	Location of ART clinic (accessibility)	1	2	3	4	5
	Cleanliness and comfort of the ART clinic waiting area	1	2	3	4	5
	Counseling on disease at ART clinic	1	2	3	4	5
	ART pharmacy services					
	Location of the pharmacy (accessibility)	1	2	3	4	5
	Cleanliness and comfort of pharmacy waiting area	1	2	3	4	5
	Convenience of the dispensing area	1	2	3	4	5
	Promptness of the dispensers in processing prescription	1	2	3	4	5
	Drug adherence counseling	1	2	3	4	5
	Information given on proper storage of your medication	1	2	3	4	5
	Availability of prescribed medicines in the pharmacy	1	2	3	4	5
	ART Laboratory services					
	Location of ART laboratory (accessibility)	1	2	3	4	5
	Cleanliness and comfort of ART laboratory waiting area	1	2	3	4	5
	Cleanliness and attractiveness of the laboratory	1	2	3	4	5
	Information provided to you during specimen collection	1	2	3	4	5
	Promptness of laboratory staff in accomplishing lab. activities	1	2	3	4	5
	Availability of laboratory facilities	1	2	3	4	5
Anti-TB services	Location of TB clinic (accessibility)	1	2	3	4	5
	Cleanliness and comfort of TB clinic waiting area	1	2	3	4	5
	Counseling on TB	1	2	3	4	5
	Counseling on anti-TB medicines	1	2	3	4	5
	Availability of anti-TB medicines in the pharmacy	1	2	3	4	5
	PMTCT services(for PMTCT users only)	1	2	3	4	5
	Family planning services	1	2	3	4	5
	Psycho social and nutritional support	1	2	3	4	5
Staff availability	Availability of service providers during working hours	1	2	3	4	5
Skill of service providers	The way professionals explain medical terms to you	1	2	3	4	5
	Your level of involvement in your medical decisions	1	2	3	4	5
Privacy	Privacy during disease counseling at ART clinic	1	2	3	4	5
	Privacy during drug counseling at ART pharmacy	1	2	3	4	5
	Privacy in ART laboratory	1	2	3	4	5
Assistance to patients	Courtesy and respect of service providers to you	1	2	3	4	5
	Willingness of professionals to listen and answer your questions	1	2	3	4	5
	Attention of professionals to your individual needs	1	2	3	4	5
Others	Waiting time for disease counseling at ART clinic	1	2	3	4	5
	Waiting time to get pharmacy services	1	2	3	4	5
	Waiting time to get TB services	1	2	3	4	5
	Waiting time at the laboratory	1	2	3	4	5
Satisfaction with the overall HIV/AIDS services		1	2	3	4	5

ANNEX II: Data collection instrument (Oromic version)

“Qulqullina kenniinsa tajaajila dhukkuba ‘HIV/AIDS’ii buufataalee fayyaa Godina Shawaa Bahaa keessatti”

Kutaa 1.Gaaffilee namoota buufataalee fayyaa keessa hojjatan irraa filatamaniif dhiyaatan

Foormii eeyyamummaa gaaffii fi deebii gochuun dura hirmaattota qorannoof ibsamu

Ani maqaan koo Tamasgeen Affaruu jedhama. Yunivarsitii Finfinnee,Mana barumsa Faarmaasii, kutaa barnoota ’pharmaceutics fi social pharmacy tti’ barataa digrii lammaffaati. Yeroo ammaa kanatti mata duree “qulqullina kenniinsa tajaajila HIV/AIDSii buufataalee fayyaa godina shawaa bahaa keessatti” jedhurratti qorannoo koo eebbaa hojjataan jira. Kanumaafis akka na gargaaruuf jecha waa’ee qulqullina tajaajila HIV/AIDS buufata fayyaa keessanitti kennamuu ilaalchisee gaaffilee muraasa daqiiqaa 20-30 fudhachuu danda’an sin gaafachuun barbaada. Kaayyoon qorannoo kanaa tajaajilli namoota HIV/AIDS posatiivii ta’aniif kennammu sadarkaa godinaatti maal akka fakkaatu baruu yoo ta,u , qorannichi rakkoolee kenniinsa tajaajila HIV/AIDSiin wal qabatanii jiran adda baasuu fi qaama ilaaluuf kallattii furmaataa akeekuu keessatti qooda guddaa qaba jedhamee amanama. Hirmaannaan keessan guutumatti eeyyamummaa keessan irratti kan hundaa’e yoo ta’u, rakkoon qorannoo kana keessatti hiramaachuun yookiin hirmaachuu dhiisuun sinirra yookiin dhaabbata fayyaa keessanirra ga’u hin jiru. Odeeffannoon sin laattanis iccitiidhaan qabamee dhimma qorannoof qofa oola.

Qorannoo kanarratti gaaffii qabdu taanaan teessoo armaan gadiin na qunnamuu dandeessu:

Lakk. bilbilaa: +251910946406

Email: temesgena08@yahoo.com

Odeeffannoo armaan olitti kenname hundaa hubattanii? A. Eyyee □ B. Lakkii □

Deebiin keessan ‘Eyyee’ taanaan gaaffiif deebiif eeyyamamoodhaa? A. Eyyee □ B. Lakkii □

Deebiin ‘Eyyee’ taanaan gaaffii fi deebiin itti fufa

Odeeffannoo waa'ee buufatichaa

Maqaa_____ Eessatti akka argamu (Magaalaa _____ Baadiyyaa_____)

1.1. Gaaffilee ogeessota buufataalee fayyaa filataman keessatti tajaajila dhukkuba sombaa qindeessan gaafachuuf qophaa'an

Odeeffannoo waa,ee deebii kennitootaa

1. Umrii(waggaadhaan) _____
2. Saala: Dhiira □ Dhalaa □
3. Sadarkaa barnootaa isa ol aanaa _____
4. Muuxannoo hojii _____

A. Tajaajiloota garaagaraa

A1. Qorannoo fi wal'aansa dhibee sombaa (TB) namoota HIV posatiivii ta'aniif kennamu

1. Buufatni fayyaa keessan tajaajila ittisaa fi wal'aansa dhukkuba sombaa kam faa kenna?

   B. Waa'ee Dhukkuba TB gorsa laachuu □ D. DOTS(wal'aansa dhukkuba TB) □

   C. Dhukkubni TB jiraachuu fi dhiisuu adda baasuu □ E. Kan biroo _____

   D. Tajaajila ittisa dhibee TB (Isoniazid) laachuu □

2. Tajaajilli ittisaa fi wal'ansa dhibee sombaa buufata fayyaa keessan keessatti eessati kennama?

   A. Kutaa tajaajilli qoricha farra HIV (ART) itti kennamu keessatti □

   B. Kutaa qofaatti tajaajila dhibee sombaaf qophaa'e keessatti □

3. Tajaajila ittisaa fi wal'aansa dhukkuba sombaa eeenyutu kenna?

   A. Doctora □ E. Gorsitoota HIV/AIDS □

   B. Health offisera □ F. Namoota HIV/AIDS waliin jiraatan □

   C. Narsii □ G. Kan biroo _____

   D. Faarmasistii/dragistii □

4. Baay'inni namoota tajaajila ittisaa fi wal'aansa dhukkuba sombaa kennanii ga'aadha jettanii yaadduu? A. Eyyee □ B. Lakkii □

5. Ogeessonni tajaajila ittisaa fi wal'aansaa dhibee sombaa laatan waa'ee tajaajila kennaniirratti hagam leeenjii argatu**?**

   A. Yeroo heddu □ B. darbee darbee □ C. Hin leenji'an □

1.2. Gaaffilee ogeessota buufataalee fayyaa filataman keessatti qindeesitoota tajaajila ART(ART service coordinator)ta'aniif qophaa'an

Odeeffannoo waa,ee deebii kennitootaa

1. Umrii(waggaadhaan) _____
2. Saala: Dhiira □ Dhalaa □
3. Sadarkaa barnootaa isa ol aanaa _____
4. Muuxannoo hojii _____

A2. Tajaajila karoora maatii tajaajiloota HIV/AIDS biroo waliin qindaa'e

1. Dhaabatni keessan tajaajila karoora maatii tajaajila HIV/AIDS keessatti ni laataa?

A. Eyyee □ B. Lakkii □

2. Gaaffii 1ffaa Eyyee jechuun yoo deebistan, tajaajila karoora maatii kam faa laattu?

A. Waa'ee maloota karoora maatii jiranii, dandeettiimaloonni kunneen dhukkuboota saal qunnamtii fi HIV/AIDS ittisuu qaban irratti odeeffannoo/gorsa laachuu □

B. Kondoomii laachuu fi akkaataa itti fayyadama isaa ibsa kennuu □

C. Maloota ittisa ulfaa biroo laachuu □

D. Kan biroo, _____

3. Tajaajilli karoora maatii buufata fayyaa keessan keessatti eessati kennama?

A. Kutaa tajaajilli farra HIV(ART service) itti kennamu keessatti □

B. Kutaa addaa ajaajila karoora maatiif qophaa'e keessatti □

C. Iddoo birootti, _____

4. Buufata fayyaa keessanitti tajaajila karoora maatii eenyutu kenna?

A. Narsii □ D. namoota HIV/AIDS waliin jiraatan □

B. Faarmasistii/dragistii □ E. Kan biroo_____

C. Gorsitoota waa'ee HIV/AIDS □

5. Baay'inni namoota tajaajila dhukkuba sombaa kennanii ga'aadha jettanii yaadduu?

A. Eyyee □ B. Lakkii □

A3. Tajaajila manaa manattii dhukkubsatoota HIV/AIDS tiif kennamu

1. Buufatni keessan tajaajilli manaa manattii dhukkubsatoota HIV/AIDS ni kennaa?

A. Eyyee □ B. Lakkii □

2. Deebiin keessan ‘Eyyee’ yoo ta’e tajaajila manaa manattii kam faatu kennama?

   A. Rakkoolee fayyaa baratamoo ta’an wal’aanuu□ E.tajaajila gorsa xiinsammuu kennuu□

   B. Qorichafi wantoota biroo barbaachisoo laachuu □ F. kan biroo, _____

   C. Dhukkuboota garagaraa ittisuu fi wal’aanuu □

   D. Barnoota sirna nyaataan wal qabatan laachuu □

3. Buufata fayyaa kanatti tajaajila manaa manatti kan laatu eenyu?

   A. Miseensa/sota maatii dhukkubsataa □ C. Ogeessota fayyaa □

   B. Tola ooltota miseensa hawaasaa ta’an □ D. kan biroo_____

A4. Gargaarsa xiinsammuu fi hawaasummaa dhukkubsatoota HIV/AIDSiif kennamu

1. Garee gargaarsaa dhiibbaa xiinsammuu fi hawaasummaa dhukkubni HIV/AIDS dhukkubsatootarra geessisu hir’isuuf hojjatan kam faa qabdu?

   A. Garee gargaarsaa dhaabbata fayyaa keessatti argamu (ogeessota fayyaa) □

   B. Garee gargaarsaa dhukkubsatootarraa qindaa’e □

   C. Garee gargaarsaa hawaasa keessaa □

   D. Kan biroo_____

   E. Gareen gargaarsaa tokkoyyuu hin qabnu □

2. Hojiilee ijoon gareen/wwan gargaarsaa kun/nneen hojjetu/an maal faadha?

   _____

3. Dhukkubsataan HIV/AIDS tokko garee gargaarsaatiin deeggaramaa jiraachuu isaa akkamitti mirkaneeffatu?

   A. Buufatichi mala hordoffii mataasaa qaba □ C. Dhukkubsataa gaafachuun □

   B. Garee gargaarsaa waliin mari’achuun □ D. Mala mirkaneeffannaa hin qabnu □

A5. Gargaarsa nyaataa fi gorsa sirna nyaataa dhukkubsatoota HIV/AIDSiif kennamu

1. Gargaarsa nyaataa yookin nyaata dabalataa kam faatu buufata kanatti dhukkubsataaf kennama? A. Plumpy nut □ B. plumpy sup □ C. Kan biroo _____

B. Tajaajiloota qoricha farra HIVeegaluun duraa fi qorichaan wal qabatanii kennaman (Pre ART and ART services)

1. Tajaajiloota qoricha farra vaayirasii HIV eegaluun dura kennaman keessaa kamtu buufata fayyaa kanatti laatama?
   A. Gorsa waa'ee dhibee HIV/AIDSii □ E. dhukkubicha sad.WHO itti laachuu □
   B. Gorsa hiriyaa(yoo hiriyaa qabate/tte) □ F. ulfaatina dhukkubsataa safaruu □
   C. CD4 countii □ G. kan biroo _____
   D. Cotrimoxazole akka prophylaxisiitti laachuu □
2. Tajaajiloota qoricha farra vaayrasii HIV tiin walqabatanii kennaman (ART services) keessaa kamtu buufata fayyaa kanatti laatama?
   A. Qoricha farra vaayirasii HIV, dhukkuboota biroo fi miira dhukkubbii dhabamsiisan/ hir'isan ajajuu fidhukkubsataaf laachuu □
   B. Qorichi akkamitti akka fudhatamuu qabu dhukkubsataa gorsuu □
   C. Kan biroo_____
3. Buufata fayyaa kanatti tajaajilli qoricha farra vaayrasii HIV tiin walqabatee kennamu erga eegalee hagam ta'eera? _____
4. Buufata fayyaa kanatti tajaajilli qoricha farra vaayrasii HIV tiin walqabatee kennamu torbanitti si'a meeqa laaatama?_____
5. Tajaajiloota kanneen kan laatu eenyu?
   A. Doktora □ E. Dragistii □
   B. Health officera □ F. Gorsitoota HIV/AIDS □
   C. Narsii □ G. Kan biroo, _____
   D. Faarmasistii □
6. Baay'inni namoota tajaajila kanneen kennanii ga'aadha jettanii yaadduu?
   A. Eyyee □ B. Lakkii □
7. Ogeessonni tajaajiloota qoricha farra vaayrasii HIV tiin walqabatanii jiran kennan waa'ee kenniinsa tajaajilaa irratti hagam leenjii argatu**?**
   A. Yeroo heddu □ B. darbee darbee □ C. Hin leenji'an □

8. Buufata fayyaa kanatti dhukkubsatootni dhibee HIV/AIDSii tajaajiloota qoricha farra vaayrasii HIV tiin walqabatanii kennaman argachuuf hagam hagamitti beellamamu?

   A. Torban lama lamatti □ D. Ji'a sadi sadiin □

   B. Ji'a ji'aan □ E. Haala biroon_____

   C. Ji'a lama lamaan □

9. Dhukkubsatootni HIV/AIDS'ii hunduu tajaajiloota qoricha farra vaayrasii HIV tiin walqabatanii kennaman argachuuf yeroo beellamanitti ni dhufuu? A. Eyyee □ B. lakkii□

10. Deebiin gaaffii 9ffaaf keessan lakkii yoo ta'e sababni isaa maali?_____

1.3. Gaaffilee ogeessota buufataalee fayyaa filataman keessatti qindeesitoota tajaajila fayyaa haadholee fi daa'immanii (MCH service coordinator)ta'aniif qophaa'an

Odeeffannoo waa,ee deebii kennitootaa

1. Umrii(waggaadhaan) _____
2. Saala: Dhiira □ Dhalaa □
3. Sadarkaa barnootaa isa ol aanaa _____
4. Muuxannoo hojii _____

C. Tajaajila ittisa vaayirasii HIV haadharraa gara daa'immanii (PMTCT Services)

1. Tajaajilli ittisa vaayirasii HIV haadharraa gara daa'immanii buufata kanatti ni laatamaa?

   A. Eyyee □ B. Lakkii □

2. Deebii gaaffii 1ffaa Eyyee yoo jettan tajaajila akkamiitu/maal faatu kennama?

   A.Yeroo da'umsaa haadhaaf qoricha laachuu □ E. Kan biroo _____

   B. Daa'imman kunuunsa farra HIV keessa galchuu □

   C. Battala da'umsaa daa'ima dhalattuuf qoricha kennuu □

   D. Haadhaolee kunuunsa farra HIV keessa galchuu □

3. Buufatni fayyaa keessan Ogeessota tajaajila ittisa vaayirasii HIV haadharraa gara daa'immanii irratti leenji'an ni qabaa? A. Eyyee □ B. Lakkii □

4. Deebiin gaaffii 3ffaa eyyee yoo ta'e eenyu fa'i?

A. Doktora □ D. Gorsitoota HIV/AIDS □

B. Health officera □ E. Faarmasistii/dragistii □

C. Narsii □ F. kan biroo _____

5. Baay'inni namoota tajaajila ittisa vaayirasii haadharraa gara daa'imaa kennanii ga'aadha jettanii yaadduu? A. Eyyee □ B. Lakkii □

1.4 Gaaffilee buufataalee fayyaa filataman keessatti bakka bu'aa kutaa laboraatorii gaafachuuf qophaa'an

Odeeffannoo waa,ee odeeffannoo kennitootaa

1. Umrii(waggaadhaan) _____
2. Saala: Dhiira □ Dhalaa □
3. Sadarkaa barnootaa isa ol aanaa _____
4. Muuxannoo hojii _____

D. Tajaajila laboraatorii vaayirasii HIV

1. Buufata fayyaa kanatti baay'inni ogeessota tajaajila laboraatorii vaayirasii HIV tiin wal qabate kennan meeqa?
   A. Ogeessa laboratory (degree) _____
   B. Ogeessa laboratory (diploma) _____
   C. Kan biroo_____
2. Ogeessonni kunneen waa'ee tajaajila laboraatorii HIV irratti hagam leenjii fudhatu?
   A. Yeroo heddu □ B. darbee darbee □ C. Hin leenji'an □
3. Ogeessonni laboraatorii hundi waa'ee dhimma nageenyaa laboraatorii keessaa irratti leenji'aniiruu? A. Eyyee □ B. Lakkii □
4. Ogeessonni laboraatorii hundi waa'ee dhimma mirkaneeffannaa qulqullummaa hojii laboraatorii irratti leenji'aniiruu? A. Eyyee □ B. Lakkii □

Kutaa 2. Buufataalee fayyaa filataman keessatti jiraachuu fi jiraachuu dhiisuu qorichoota HIV/AIDSiin wal qabatan (kuusaa wantoota kanneenii daaaw'achuu fi managara kuusichaa gaafachuun kan hojjetamu)

Gabatee lakk.1. Daataa kuufama qoricha HIV/AIDSiin wal qabatanii(kan ji'a jahan darbee fi guyyaa daaw'annaa kuusaa):

Furtuu:

1= tokko tokkoon qorichaaf bincardiin jiraachuu isaa (Eyyee dhaaf 'E' jechuun fi Lakkiif 'L' jechuun deebifama)

2= Guyyoota 30'n darban keessatti tokko tokkoon qorichaaf bincardiin haaromfamuu isaa (Eyyee dhaaf 'E' jechuun fi Lakkiif 'L' jechuun deebifama)

3= Guyyaa daaw'annaan taasifametti hanqinni qorichaa buufaticha muudachuu fi dhiisuu isaa(Eyyee dhaaf 'E' jechuun fi Lakkiif 'L' jechuun deebifama)

4= Ji'oota jahan darban keessatti(guyyaa daaw'annaa osoo hin dabalatin) hanqinni qorichaa buufaticha muudachuu fi dhiisuu isaa(Eyyee dhaaf 'E' jechuun fi Lakkiif 'L' jechuun deebifama)

5= Ji'oota jahan darban keessatti(guyyaa daaw'annaa osoo hin dabalatin) hanqinni qorichaa buufaticha si'a meeqa akka muudate

6= Ji'oota jahan darbankeessatti(guyyaa daaw'annaa osoo hin dabalatin) hanqinni qorichaa buufaticha guyyoota meeqaaf akka muudate

7= Qorichoota fi kiitii qorannoo ji'oota jahan darbanii fi guyyaa daaw'annaa hanqina qabaniif sababa/oota hanqinaa

8= Ji'oota jahan darban keessatti hanqina qorichaa furuuf tarkaanfiiwwan fudhataman

Commodity type				1 (Y/N)	2 (Y/N)	3 (Y/N)	4 (Y/N)	5	6	7	8
ARV medicines	For adults and adolescents	FDC	TDF300/3TC300/EFV600								
			AZT300/3TC150/NVP200								
			AZT300/3TC150								
			TDF300/3TC300								
		Loose form	EFV 600mg								
			NVP 200mg								
	For pediatrics	FDC	AZT60/3TC30/NVP50								
			AZT60/3TC30								
		Loose form	EFV 200mg								
			EFV 50mg								
			NVP 240ml syrup (50mg/5ml)								
Anti- TB medicines	For adults and adolescents	FDC	RHZE 150/75/400/275 mg								
			RH 150/75 mg								
		Loose form	E 400mg								
			INH 300mg								
			Streptomycin vial 1 gm								
	For pediatrics	FDC	RHZ 60/30/150 mg								
			RH 60/30mg								
			RH 60/60mg								
		Loose form	E100mg								
			H 100mg								
Opportunistic infection medicines	Cotrimoxazole 240mg/5ml syrup										
	Cotrimoxazole 480mg tablet										
	Cotrimoxazole 960mg tablet										
	Ciprofloxacin 500mg tablet										
Anti pain medicines	Paracetamol 500mg tablet										
	Paracetamol 120mg/5ml syrup										
	Ibuprofen 400mg tablet										
	Diclofenac 100mg tablet										
	Tramadol 50mg tablet										

7. Sababa/oota hanqinaa:

A. Qorichi ajajame yerootti hin dhiyaanne
B. Buufatichi qoricha yeroon hin ajajne
C. Buufatichiqoricha hamma isa barbaachisu seeraan hin shallagne
D. Bakka qorichi raabsamu(central level) hanqinatu jira
E. Rakkoo geejjibaatu jira

8. Tarkaanfiiwwan hanqina qorichaa/kiitii qorannoo furuuf fudhataman:

A. Ajaja ariifachiisaa(emergency order gochuu)
B. Dhaabata fayyaa dhiyoo jirurraa liqeeffachuu
C. Dhukkubsataa gara dhaabata fayyaa birootti erguu
D. Hamma qorichaa ajajamee gadi dhukkubsataaf laachuu
E. Qoricha osoo hin laatiniif dhukkubsataa gara mana isaatti erguu

Kutaa 3: check listii qabiyyeewwan tajaajila HIV/AIDSiin wal qabatan garaagaraa ilaaluuf gargaaran

Lak	Gosa qabiyyee	Jiraachuu fi dhiisuu		Yaada
		Jira	Hin jiru	
1	Guidelinii qorannoo fi gorsa HIV			
2	Guidelinii tajeejila karoora maatii			
3	Guidelinii tajaajila dhukkuba sombaa			
4	Guidelinii tajaajila gorsaa fi qorannoo fedhiirratti hundaa'ee			
5	Guidelinii qoricha farra dhukkuba HIV/AIDSii			
6	Protokoolii laboraatorii kan qorannoo HIV gochuuf barbaachisu			
7	Protokoolii bu'aa qorannoo ifa gochuuf hordofamu			
8	Maashina lakkoofsa CD4 ibsu			Jira yoo ta'e, a. ni hojjeta b. hin hojjetu
9	Kutaa gorsaa mijaawaa			
10	Dokumantii akkattaa qabiinsaa fi itti fayydama keemikaalota laboraatorii keessaa ibsu(MSDS)			
11	Baattuun keemikaalotaa barreeffama maqaa keemikaalaa, guyyaa fi of eeggannoo barbaachisu ibsu of irraa qaba			
12	Kutaan laboraatorii fi meeshaaleen laboraatorii keessaa qulqullinaa fi fayyummaa qabu			
13	Glooviin harkaa laboraatorii keessatti ni argama			
14	Eegduun ijaa laboraatorii keessatti ni argama			
15	Gaawoniin laboraatorii keessatti ni argama			
16	Haguugduun funyaanii laboraatorii keessatti ni argama			
17	Dhaamsituun ibidddaa laboraatorii keessatti ni argama			

18. Yoo Gaayid laayinii yookiin protokoolii armaan oliitti dhahaman keessaa buufata fayyaa keessanitti kan hin argamne jiraate sababani hin argamneef maali?_____

_____

Kutaa 4: Gaaffilee banaa namoota buufataalee fayyaa irraa filataman gaafachuuf qophaa'an

1. Tajaaajilli dhukkubsatoota HIV/AIDS tiif kennaman qulqullina qabaachuu fi dhiisuu isaa akkamitti gamaaggamtu/mirkaneeffattu?
2. Rakkoolee jajjaboon tajaajiloota qoricha farra vaayirasii HIVtiin wal qabatanii fi kanneen biroo kennuu irratti sin muudatan maal fa'a?
3. Rakkoolee gaaffii lakkoofsa 2 irratti dhahaman furuuf tarkaanfiileen isin fudhattan maal maali?
4. Qulqullina tajaajila dhukkubsatoota HIV/AIDS'iif kennamanii eegsisuuf yookiin fooyyessuuf maalu hojjetamuu qaba jettanii yaaddu?

Turtii na waliin gootanii fi yaada keessaniif Galatoomaa!!

Kutaa 5: Gaaffilee tajaajilootni dhukkubsatoota HIV/AIDSiif kennaman quubsaa ta'uu fi dhiisuu beekuuf gaafataman

Ajaja daataa sassaabdotaaf kennamu:

- Jalqaba dhukkubsataa nagaa gaafadhaa
- Kaayyoo qorannichaa fi faayidaa inni rakkoolee tajaajila dhukkubsataa HIV/AIDSiif kennamuun wal qabatanii jiran furuu keeessatti qabu ibsaafii
- Dhukkubsataan ennaa gaaffii keessaniif deebii laatu waan inni/isheen jedhu/ttu seeraan dhaggeeffadhaa
- Gaaffii fi deebicha bifa dhukkubsataa hin cinqineen taasisaa

I. Amaloota hawaas-dinagdee dhukkubsatootaa. Bakka barbaachisaatti (sanduuqa keessatti) mallatoo "✓ " kaa'aa

1. Umrii (waggaadhaan)____
2. Saala: A. Dhiira □ B. Dhalaa □
3. Haala fuudhaa fi heerumaa: A. Kan hin fuune/hin heerumne□ C. Kan hiike/hiikte □
   B. Kan fuudhe/heerumte □ D. kan jalaa du'e/duute□
4. Amantaa: A. Ortodoksii □ B. Protestaantii □ C. Musliima □ D. kan biroo_____
5. Iddoo jireenyaa: Magaalaa □ Baadiyyaa □
6. Sadarkaa barnootaa:
   A. Kan barreesuu fi dubbisuu hin dandeenye □ D. Kutaa 5-8 □
   B. Barreessuu fidubbisuu kan danda'u garuu barnoota idilee kan hi qabne □ E. Kutaaa 9-12 □
   C. Kutaa 1-4 F.Kutaa 12 ol □
7. Akkaataa hojii: A. Hojjetaa mootummaa □ D. Qotee bulaa □ G. Kan biro_____
   B. Daldalaa □ E. Giiftii manaa □
   C. Hojjetaa guyyaa guyyaa □ F. Barataa/ttuu □
8. Dheerina yeroo maamilummaan dabarsan: Ji'a_____ waggaa;_____

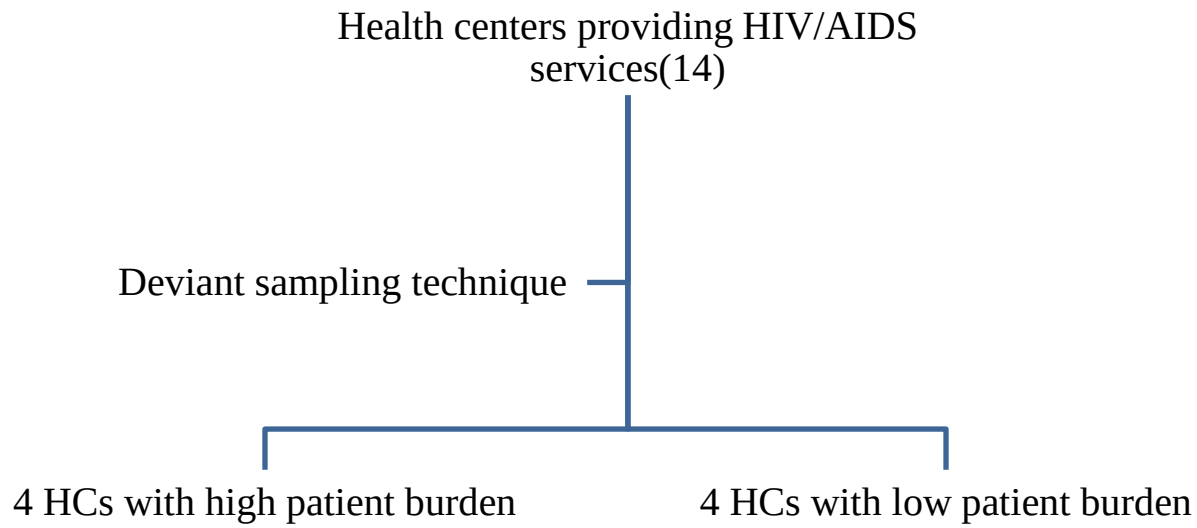
II. dhukkubsatootni HIV/AIDSii tajaajila isaaniif kennamun quufuu fi dhiisuu isaanii

Ajaja: gabateen armaan gadii dhukkubsatootni HIV/AIDSii tajaajila isaaniif kennamuun quufuu fi quufuu dhiisuu isaanii ibsa. Tokko tokkoon dhukkubsataa tajaajila isaaf/isheef kennamuuf sadarkaa akka kennan gaafachuun deebii isaan kennanitti marsaa

Gabatee lakk. 2. Buufata fayyaa filatamanitti sadarkaa dhukkubsataan tajaajiloota HIV/AIDSii garagaraa argatuuf laatu[Sirrumatti qubsaa miti(VD)=1; Quubsaa miti(D)=2; Sadarkaa laachuun na dhiba(N)=3; Quubsaadha(S)=4; Baay'ee quubsaadha(VS)=5]

Gosa tajaajilaa		Sadarkaa tajaajilaa				
		VD	D	N	S	VS
Tajaajila ART	**Tajaajila Kilinika ART tti kennamu**					
	Argama kilinika ART	1	2	3	4	5
	Qulqullinaa fi mijaa'ummaa idddoo dabaree eeggannaa	1	2	3	4	5
	Kilinika ARTtti gorsa waa'ee dhukkubaarratti kennamu	1	2	3	4	5
	Tajaajila faarmaasii ARTtiitti kennamu					
	Argama faarmaasii ART	1	2	3	4	5
	Qulqullinaa fi mijaa'ummaa idddoo dabaree eeggannaa	1	2	3	4	5
	Mijaa'ummaa naannoo qorichi itti laatamuu	1	2	3	4	5
	Saffisa qorichi ajajame itti siniif laatamu	1	2	3	4	5
	Akkaataa seeraan fudhannaa qorichaarratti gorsa siniif kennamu	1	2	3	4	5
	Akkaataa qorichi itti olkaawwamu irratti gorsa kennamu	1	2	3	4	5
	Qorichi ajajame faarmaasii keessatti argamuu	1	2	3	4	5
	Tajaajila laboraatorii ART					
	Argama laboraatorii ART	1	2	3	4	5
	Qulqullinaa fi mijaa'ummaa idddoo dabaree eeggannaa	1	2	3	4	5
	Qulqullummaa fi hawwatummaa laboraatorii	1	2	3	4	5
	Odeeffannoo yeroo saampilii laabiif kennitan isinii laatamu	1	2	3	4	5
	Saffisa ogeessi laboraatorii hojii laboraatorii itti hojjetu	1	2	3	4	5
	Laaboraatorii keessatti argamuu meeshaalee laboraatorii	1	2	3	4	5
Tajaajila dhukkuba soombaa	Argama kilinika tajaajila farradhukkuba sombaa	1	2	3	4	5
	Qulqullinaa fi mijaa'ummaa idddoo dabaree eeggannaa	1	2	3	4	5
	Dhukkuba sombaa ilaalchisee gorsa kennamu	1	2	3	4	5
	Qoricha dhibee sombaaf laatamu irratti gorsa kennamu	1	2	3	4	5
	Qorichi dhibee sombaaf ajajame faarmaasii keessatti argamuu	1	2	3	4	5
	Tajaajila farradhibee sombaa akka walii galaatti	1	2	3	4	5
	Ittisa vaayirasii HIV haadhaa gara daa'immaniitti	1	2	3	4	5
	Tajaajila karoora maatii	1	2	3	4	5
	Gargaarsa xiinsammuu fi nyaataa	1	2	3	4	5
Jiraachuu tajaajila kennitootaa	Yeroo hojiitti iddoo hojiitti argamuu tajaajila kennitootaa	1	2	3	4	5
dandeettii tajaajila kennitootaa	Akkaataa itti ogeessi fayyaa jechoota meedikaalaa ibsu	1	2	3	4	5
	Yaala siif kennamuuf murtee kennuu keessatti sadarkaa hirmaannaa kee	1	2	3	4	5
Dhoksaa eeguu danda'uu kutaa tajaajilaa	Dhoksaa eeguu danda'uu Kilinika ART	1	2	3	4	5
	Dhoksaa eeguu danda'uu faarmasii ART	1	2	3	4	5
	Dhoksaa eeguu danda'uu laboraatorii ART	1	2	3	4	5
Gargaarsa dhukkubsataaf laatamu	Kabaja ogeessonni fayyaa siif kennan	1	2	3	4	5
	Gaaffii/lee kee dhaggeeffachuu fi deebisuuf eeyyamamummaa tajaajila kennitootaa	1	2	3	4	5
	xiyyeeffannoo tajaajila kennitoonni fedha dhuunfaa ati qabduuf laatan	1	2	3	4	5
Kan biroo	Kilinika ARTtti waa'ee dhukkubaa ilaalchisee tajaajila gorsaa argachuuf yeroo dabaree eegggachuun dabarfamu	1	2	3	4	5
	Tajaajila faarmaasii argachuuf yeroo dabaree eeguun dabarfamu	1	2	3	4	5
	Tajaajila dhukkuba sombaa argachuuf yeroo dabaree eeguun dabarfamu	1	2	3	4	5
	Tajaajila laaboraatorii argachuuf yeroo dabaree eeguun dabarfamu	1	2	3	4	5
Quubsummaa tajaajiloota HIV/AIDSii garaagaraa akka walii galaatti		1	2	3	4	5

ANNEX III: Sampling frame of health centers providing HIV/AIDS services in East Shoa Zone, Oromia region, Ethiopia, 2017



ANNEX IV: List of health centers selected as a study sample

Serial No	Name of the health center	Patient load(Nov.,2017)	Health center patient burden category
1	Modjo health center	1615	high
2	Wolenciti health center	916	high
3	Batu number1 health center	820	high
4	Meki health center	597	high
5	Awash Melkasa'a health center	164	low
6	Bulbula health center	101	low
7	Koka health center	91	low
8	Godino jitu Health center	62	low

ANNEX V: Declaration Sheet

I, the undersigned, declare that this thesis is my original work and has not been presented for a degree in any other university.

Name: Temesgen Aferu
Signature: _____

This thesis has been submitted for examination with my approval as university advisor.

Name: Teferi Gedif (PhD, Associate Professor)
Signature: _____

Place and date of submission: School Pharmacy, Addis Ababa, Ethiopia
December, 2017