



**ADDIS ABABA UNIVERSITY**  
**COLLEGE OF BUSINESS AND ECONOMICS**  
**SCHOOL OF COMMERCE**



**Patient Satisfaction with Antiretroviral Therapy Services in selected hospitals of Addis Ababa Using the Donebidean Model**

**A project thesis work submitted to Addis Ababa University College of Business and Economics School of Commerce in Partial Fulfillment of the Requirements for the Degree of Master of Arts in Project Management (MAPM)**

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**Addis Ababa, Ethiopia**

**June, 2024**

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## **STATEMENT OF DECLARATION**

I, the undersigned, hereby declare that the study which is being presented in this thesis entitled “Patient Satisfaction with Antiretroviral Therapy Services in selected hospitals of Addis Ababa Using the Donebidean Model” is original work of my own. It had not been presented for a partial fulfillment for any educational qualification at this university or any other and in any projects by any means, and all the resources materials used for this thesis had been accordingly acknowledged.

**Sign** \_\_\_\_\_

**Dawit Bekele Tefera**

\_\_\_\_\_

**Date**

## LETTER OF CERTIFICATION

This is to certify that the research project presented in this report, entitled “Patient Satisfaction with Antiretroviral Therapy Services in selected hospitals of Addis Ababa Using the Donebidean Model” is conducted by Dawit Bekele Tefera under my supervision and guidance. This work is original in nature and, in my opinion, suitable for submission in partial fulfillment of the requirement for the award of Master of Arts Degree in Project Management.

**Advisor : Mahir Jibril, (Ph.D.)**

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

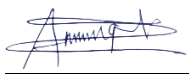
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**GRADUATE PROGRAM IN PROJECT MANAGEMENT**

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## Abstract

*Antiretroviral therapy (ART) is a group of medications that is taken lifelong to treat HIV. Due to chronic nature of the disease, clinicians need to carefully and frequently monitor patient status and initiate appropriate therapy when needed. Patient's satisfaction occurs when patients feel their needs and expectations are being met by the service delivery they receive in health institutions. The objective of this study is to assess patient satisfaction with Antiretroviral Therapy Services in selected hospitals of Addis Ababa Using the Donebidean Model. Both qualitative and quantitative approach was conducted. 199 respondents were selected and a structured questionnaire quantitative data and Key informant interview for qualitative data using open-ended questionnaire. Descriptive statistics, Mann-Whitney U Test and binary logistic regression analysis was used to find association with patient satisfaction at  $P$  value  $< 0.05$ . 61.3% of Patients on ART are satisfied with an overall mean satisfaction rate was 76.25%. Mann-Whitney U Test showed that patients on EMR system are more satisfied 66.7% with  $P < 0.05$ . Binary logistic regression analysis, Hospital (AOR 4.30, 95% CI: 2.2–8.42,  $p < 0.05$ ), Waiting time (AOR 2.03, 95% CI: 1.03–3.99,  $p < 0.05$ ), consultation time (AOR 2.66, 95% CI: 1.18–5.97,  $p < 0.05$ ), and history of loss of card (AOR 0.4, 95% CI: 0.2–0.79,  $p < 0.05$ ) were found to be significantly associated with ART patient satisfaction. Overall patients were Satisfied with antiretroviral therapy service with Structural and process components have significantly affected ART patient satisfaction*

key words: ART, Anti Retroviral Therapy, Patient satisfaction, HIV, Donebidean Model, Ethiopia

# Contents

CHAPTER ONE .....	1
1. INTRODUCTION .....	1
1.1. Background of the study .....	1
1.2. Statement of the Problem .....	3
1.3 Hypothesis.....	3
1.4. Objectives.....	4
1.4.1. General Objectives .....	4
1.4.2. Specific objectives.....	4
1.5. Significance of the study .....	4
1.6. Scope of the Study.....	5
1.7 Organization of the Paper.....	5
1.7. Limitations of the study.....	5
Chapter 2.....	6
2. Literature review .....	6
2.1. Theoretical Review .....	6
2.1.1 Introduction .....	6
2.1.2. HIV and AIDS .....	6
2.1.3. Antiretroviral therapy (ART) program .....	8
2.1.4. ART Program monitoring.....	9
2.1.5. Patient satisfaction.....	10
2.1.6. The Donebidean model .....	11
Medical record.....	12
Facility .....	13
Triage.....	13
Patient Privacy. ....	14
Health professional and patient interaction .....	15
2.2. Empirical review .....	15
2.2.1. Structure and patient satisfaction .....	15
2.2.2. ART service patient satisfaction rate, Process, and sociodemographic character .....	16
2.3. Conceptual framework.....	17
Chapter Three.....	18

3. Methods.....	18
3.1. Study Design .....	18
3.2. Target population.....	18
3.3. Study population .....	18
3.4. Sampling procedure.....	18
3.5. Methods of data collection .....	19
3.6. Inclusion Exclusion criteria.....	20
3.7. Data Analysis Methods.....	20
3.8. Ethical Considerations.....	21
3.9. Operational definition .....	21
Chapter four .....	22
4. Result.....	22
4.1. Socio-demographic and determinate factors .....	22
4.2. Process component.....	23
4.2.1. Triage .....	23
4.2.2. Health professional and patient interaction.....	25
4.2.3. Health care quality .....	26
4.2.4. Privacy and respect .....	27
4.3. Structure component .....	27
4.4. patient satisfaction (Outcome) .....	29
4.5. Qualitative Thematic Analysis .....	31
4.6. Integration of Results .....	34
Discussion.....	35
CHAPTER FIVE .....	38
5. Conclusion.....	38
Recommendation .....	38
References.....	40
ANNEX.....	i

## List of Tables

Table 1: Reliability test .....	21
Table 2: sociodemographic and determinant factor .....	22
Table 3: Reasons for long waiting time .....	24
Table 4: Triage component of Donabedian Framework.....	25
Table 5: Health professional communication and service delivery .....	26
Table 6: Health care quality .....	26
Table 7: Privacy and respect .....	27
Table 8: Structure component .....	27
Table 9: Mann-Whitney U Test.....	28
Table 10: Overall mean level of patient satisfaction.....	29
Table 11: Multivariable binary logistic regression analysis.....	30

## List of Figures

Figure 1: Donabedian Framework of ART patient satisfaction .....	17
Figure 2: Carvalho's Sample size determination .....	19
Figure 3: Waiting time .....	23
Figure 4: Lost of card at triage in ART patient. ....	24
Figure 5: consultation time .....	25
Figure 6: Over all patient satisfaction and type of medical record used.....	28
Figure 7: Overall patient satisfaction .....	29
Figure 8: Thematic analysis .....	33

## **Acronym**

AIDS: Acquired Immunodeficiency Syndrome

ART: Anti-Retroviral Therapy

ARV: Anti-Retro-Viral

CD4: Cluster of Differentiation 4

CDR: Clinical Data Repository

EMR: Electronic Medical Record

EPHI: Ethiopian Public Health Institute

HIV: Human Immunodeficiency Virus

ID: Identification

IT: Information Technology

MPI: master patient index

NGO: Non-Governmental Organization

PMR: Paper-Based Medical record

UPS: Uninterrupted Power Supply

WHO: World Health Organization

# **CHAPTER ONE**

## **1. INTRODUCTION**

### **1.1. Background of the study**

HIV/AIDS is a global issue that has received significant attention from both the local and international community. Access to antiretroviral therapy (ART) for people in low- and middle-income nations has been one area of concern (Gebre-Mariam et al., 2012; WHO, 2021).

HIV/AIDS is the most severe and critical public health problem, which has claimed 40.1 million lives since the beginning of the epidemic. At the end of 2021, more than 38.4 million people are living with HIV/AIDS, of which 28.7 million people were accessing ART. Sub-Saharan African countries, including Ethiopia, carry the most of the burden accounting for 75% of AIDS-related deaths (Belete et al., 2023).

Antiretroviral therapy (ART) is a group of medications that is taken lifelong to treat HIV. This Drugs cannot eradicate or treat the infection. Nevertheless, when combined, they can stop the infection from spreading. Antiretro-viral therapy (ART) is a great public health success that improved the survival of HIV-infected people. In 2016, the World Health Organization (WHO) strongly advised starting antiretroviral therapy (ART) for all adult HIV-positive individuals, irrespective of their CD4 cell count or WHO clinical stage. Due to the "treat-all" suggestion, antiretroviral therapy (ART) has been expanded to over 130 countries worldwide, and treatment monitoring is now more widely available (IAPAC, March 2021; WHO, 2021).

Governments and international, bilateral, and non-governmental organizations are currently strongly committed to ensuring that ART is accessible, which necessitates the establishment of clinical teams at several HIV treatment and ART locations. The development of a system to support this care administratively as well as through clinical mentoring, training, monitoring, and other quality assurance inputs following training is equally crucial (WHO, 2006). Hence the need for accurate and reliable data (Abiy et al., 2018).

In Ethiopia, HIV/AIDS infection has claimed 1.3 million lives since the very beginning of the epidemic. The prevalence of HIV/AIDS in Ethiopia was 1.16%, despite a significant regional difference of 1.2% in the Amhara region and 4.2% in the Gambella region(Belete et al., 2023).

In Ethiopia Because of the non-affordability of ART by most HIV-infected individuals, the Ministry of Health launched free National ART program access in January 2005 and have evolved since, and now In response to WHO's advice there is a rapid ART initiation since November 2016. ART services are provided in more than 1,500 public, private and NGO health facilities within a strong program with good referral and registration systems (Belete et al., 2023; Minister of Health, Dec 2023).

Monitoring and evaluation of HIV care and treatment helps program managers to assess the effectiveness and uptake of interventions and establishes links between services and care for HIV and associated conditions (WHO, 2021).

As national Programs, ART Program needs to be accountable for funding and results reporting. In order to address this, A number of multilateral and bilateral organizations and initiatives have collaborated to develop a tool to assess M&E Plans and Systems. Hence, The M&E Systems Strengthening Tool is designed as a generic tool to assess the data collection, reporting and management systems to measure indicators of Program and project success. This tool is designed to be compatible with National HIV/AIDS Monitoring and Evaluation Capacity Tool. In this tool, there are various checklist to Assess Program/Projects M&E Plan. Among this checklists are: confidentiality of sensitive data, and client satisfaction with services delivered by the Program/project(s) among others ((USAID), 2007).

Satisfaction in healthcare is an attitude influenced by feelings that needs to be quantified by a diverse, subjective evaluation of all aspects related to the healthcare experience (Setyadi & Nadjib, 2023). Patient's satisfaction occurs when patients feel their needs and expectations are being meet by the service delivery they receive in health institutions(Atsebeha & Chercos, 2018).

The Donebidean model is a conceptual framework for investigating health services and assessing healthcare quality. The approach divides quality of care information into three categories: "structure", "process", and "outcomes"(Halili et al., 2024).

## 1.2. Statement of the Problem

Even though there is a governmental effort to increase ART services and the number of clients enrolled in chronic care is increasing, patient loss to follow-up and ensuring adherence to ART regimens remain major challenges of the ART program in Ethiopia, and little has been done to evaluate patient satisfaction (Gezahegn et al., 2021). This implies that The quality of ART services in terms of client satisfaction remains a challenge (Tiruneh & Woldeyohannes, 2022).

Much effort has been put into the scaling up of access to ART in Ethiopia. With this scale up, the efficacy of ART which depends largely on compliance with treatment regimens. Poor compliance is a direct result of Poor patient satisfaction which is intern associated with poor virological and immunological response, It is also responsible for the development of resistant strains (Doyore & Moges, 2016).

With this regard, Maintaining patient satisfaction is a critical component of Ethiopia's ART program monitoring. But, there is little evidence on the input, process, and output components of the Donebidean model such as the medical recording system, difference in hospital setup, tirage, privacy and confidentiality, health workers interaction, and ultimately patient satisfaction In Ethiopia. That is why the Donebidean model was applied to look into the factors affecting patient satisfaction with ART services. Therefore, the study aimed to assess the patient satisfaction with antiretroviral therapy services in selected Hospitals of Addis Ababa, Ethiopia, using the Donebidean Model (Halili et al., 2024).

## 1.3 Hypothesis

**Null Hypothesis 1 (H<sub>0</sub>):** There is no significant difference between structure component of the Donebidean model and the mean level of ART patient satisfaction (Outcome) in Selected Anti-Retroviral Therapy (ART) Service providing Hospitals of Addis Ababa, Ethiopia.

**Null Hypothesis 2 (H<sub>0</sub>):** There is no significant difference between process component of the Donebidean model and the mean level of ART patient satisfaction (Outcome) in Selected Anti-Retroviral Therapy (ART) Service providing Hospitals of Addis Ababa, Ethiopia.

In this study, the null hypothesis will be tested against the alternative hypothesis using statistical methods. If the results of the statistical test are statistically significant ( $p \leq 0.05$ ), then the null hypothesis would be rejected in favor of the alternative hypothesis. If the results are not statistically significant, then the null hypothesis would not be rejected.

## **1.4. Objectives**

### **1.4.1. General Objectives**

To assess patient satisfaction with Antiretroviral Therapy Services in selected hospitals of Addis Ababa Using the Donebidean Model from May 1 to May 30, 2024.

### **1.4.2. Specific objectives**

- To determine the overall mean level patient's satisfaction of Antiretroviral Therapy Services in selected hospitals of Addis Ababa Using the Donebidean Model from May 1 to May 30, 2024.
- To identify the mean level of patient satisfaction of the structure component of Donebidean Model in selected hospitals of Addis Ababa from May 1 to May 30, 2024.
- To identify the mean level of patient satisfaction of the process component of Donebidean Model in selected hospitals of Addis Ababa from May 1 to May 30, 2024.
- To determine the association between structure and process component of Donebidean Model with mean level patient's satisfaction of Antiretroviral Therapy Services in selected hospitals of Addis Ababa from May 1 to May 30, 2024.

## **1.5. Significance of the study**

The significance of this study is to fill the gaps in literature, moreover Conducting this research provides a significant contribution to policy makers by indicating areas of weaknesses, enabling to take timely measures of adjustment, realigning to ensure a successful strategy to fight HIV/AIDS and encourage patient centered health service programs.

This study can also be used to enhance appropriate communication and building of stronger health worker patient relationship based on identified gaps and barriers to effective performance of

HIV/AIDS prevention and control programs from the patients' perspective. On top of that, it will also give us a local understanding of the current patient satisfaction rate

## **1.6. Scope of the Study**

The study is limited to ART program implementation sites in Government Hospitals of Addis Ababa, Ethiopia. Despite this, the conclusions will make an effort to generalize the findings to Regions across Ethiopia and Non-Governmental Organizations.

## **1.7 Organization of the Paper**

There are five chapters that are linked to this research. The work's introduction, comprising a problem statement, hypothesis, the objective, background, scope, and limitations of the study, is covered in the first chapter. The second chapter's primary focus was a review of the literature on the topic of this study. The third chapter covers the study approach, procedures, and methodologies used for data collecting and analysis. The fourth chapter presents the overall study findings. The fifth and final chapter discusses the study's findings, conclusion and recommendations. We will make some inferences from the previous chapter so that we can provide a few recommendations.

## **1.7. Limitations of the study**

There are a number of study limitations that should be taken into account. Initially, the utilization of convenient sampling could result in selection bias, restricting the applicability of findings beyond the particular sample. Secondly, the cross-sectional design prevents causal inferences by capturing data at a single time point.

Third, sampling only two Hospitals under Addis Ababa health beuro and not including Federal Hospitals, health center, and other regional states; the results may not be as applicable to do inference to all facilities offering ART services are located in Addis Ababa and other regions of Ethiopia. Fifth, Due to questioners being asked by healthcare professionals during data collection, there is a possibility of social desirability bias. However, measure were taken to minimize this, patients were informed that their care would not be affected by their responses, and the study objectives were explained.

## **Chapter 2**

### **2. Literature review**

#### **2.1. Theoretical Review**

##### **2.1.1 Introduction**

The main focus of this chapter is to review the literature on the subject being studied, specifically ART patient satisfaction. It will emphasize the global, African, Ethiopian, and Addis Ababa burden of HIV, as well as the evolution and current situation of ART programs, and how patient satisfaction is an integral part of monitoring and evaluation. Additionally, the chapter will explore the Donebidean Model and how it can be used to assess patient satisfaction, as well as relevant input and process components for the model. The reviewed literature will include books, articles, theses, reports, guidelines, and international journals relevant to the research topic. The majority of the literature reviewed is based on research conducted in various nations, environments, and eras to assess ART patient satisfaction in different contexts, countries, and worldwide.

##### **2.1.2. HIV and AIDS**

HIV (human immunodeficiency virus) and AIDS (acquired immunodeficiency syndrome) are two related but distinct conditions. HIV is a virus that attacks cells in the immune system, making a person more vulnerable to infections and diseases. AIDS is the late stage of HIV infection where the immune system is severely damaged, leading to life-threatening infections and illnesses (Minister of Health, Dec 2023; WHO, 2006, 2021).

HIV is a virus that attacks cells in the immune system, making a person more susceptible to infections. Still, effective and diseases. It is spread through contact with bodily fluids of an infected person, primarily during unprotected sex or through sharing injection drug equipment. Once a person has HIV, it cannot be cured, but effective treatment with antiretroviral therapy (ART) can reduce the viral load to undetectable levels, allowing people with HIV to live long and healthy lives without transmitting the virus to others through sex (Minister of Health, Dec 2023; WHO, 2006, 2021).

AIDS is the late stage of HIV infection where the immune system is severely damaged. It is characterized by a CD4 cell count below 200 cells per cubic millimeter of blood or the development of opportunistic infections regardless of CD4 count. Effective treatment with antiretroviral therapy (ART) can reduce the viral load to undetectable levels, allowing people with HIV to live long and healthy lives without transmitting the virus to others through sex. People living with HIV can significantly reduce their risk of passing the virus on to others by taking effective HIV treatment and achieving an undetectable viral load (Minister of Health, Dec 2023; WHO, 2006, 2021).

There is an international commitment to stop new HIV infections and to ensure that everyone with HIV has access to treatment. Since the beginning of the epidemic, 84.2 million people have acquired HIV and approximately 40.1 million people have died from the disease. There were 38.4 million HIV-positive people on the globe as of the end of 2021, among whom 36.7 million adults and 1.7 million children under the age of 15 are HIV-positive, 25.6 million of whom are in the African Region. In the world, 0.7% of adults between the ages of 15 and 49 are estimated to have HIV, yet the intensity of the epidemic continues to vary widely between various countries and regions. Based on WHO reports, 3.4% of the population in the African region, or more than two-thirds of all HIV-positive people worldwide, are still infected with the virus (Yilema et al., 2024).

Although only 11% of the world's population lives in sub-Saharan Africa, this region is the epicenter of the HIV/AIDS epidemic. A pattern investigation of the HIV/AIDS prevalence in Ethiopia between 1982 and 2000 revealed a consistent increase followed by a decline after 2000. According to reports from the Ethiopian DHS, the prevalence of HIV among adults was 0.2% in 1985, 3.2% in 1995, 3.3% in 2000, 1.4% in 2005, 1.5% in 2011, and 0.9% in 2016. The HIV prevalence was unevenly distributed among Ethiopia's regions, with Gambella, Addis Ababa, Central Oromia, Dire Dawa, Harari, and Afar being the most seriously affected regions (Yilema et al., 2024).

HIV/AIDS quickly became a pandemic after the first AIDS case was reported in Ethiopia in 1986. Ethiopia, one of the most severely affected nations, has made significant investments in HIV/AIDS prevention and care since the 1990s. Ethiopia adopted the global target, which was originally introduced in 2014 by the Joint United Nations Programme on HIV/AIDS, as one of the tactics

intended to end the AIDS and HIV epidemics by 2030. Ethiopia has committed to lowering HIV infections and is working hard on a number of projects, including a national roadmap for HIV prevention and control in 2018 and a national strategic plan for HIV/AIDS from 2021 to 2025 with the goal of having AIDS free Ethiopia by 2030 (Yilema et al., 2024).

### **2.1.3. Antiretroviral therapy (ART) program**

Antiretroviral therapy (ART) is a critical and incredibly effective treatment for individuals living with HIV. It consists of a combination of medications that need to be taken for the rest of the patient's life. While the drugs cannot completely eliminate the HIV infection, when used together, they can effectively suppress the virus, preventing it from spreading throughout the body. ART has been a defining success in public health, significantly enhancing the life expectancy and quality of life for people with HIV (IAPAC, March 2021; WHO, 2021). It reduces HIV replication, infection of new cells, and improves the immune system function (4), quality of life and survival (Abdulwadud et al., 2011).

In 2016, the World Health Organization (WHO) issued a strong recommendation for all HIV-positive adults to begin antiretroviral therapy, regardless of their CD4 cell count or clinical stage according to the WHO guidelines. This "treat-all" approach has led to the expansion of ART availability to over 130 countries worldwide, making treatment monitoring more widely accessible. This broader access to treatment helps improve the prognosis and quality of life for individuals living with HIV, while also contributing to the global effort to control the spread of the virus (IAPAC, March 2021; WHO, 2021).

In Ethiopia, The expansion of antiretroviral treatment (ART) free of charge since 2003 could be instrumental in reducing the incidence and mortality rates of HIV/AIDS. Some studies show that the mortality decline among individuals living with HIV/AIDS in Ethiopia is consistent with ART coverage and uptake. However, the ART coverage in adults (59%) and children (23%) is still very low in Ethiopia (Deribew et al., 2019). In this regard, Support services are crucial for increasing the use of ART services and improving retention in care by increasing patient satisfaction which could lead to increasing adherence to medication and, ultimately reducing early mortality due to HIV/AIDS in Ethiopia (Deribew et al., 2019).

HIV/AIDS retention rate is Percentage of adults and children known to be on treatment 12 months after initiation of antiretroviral therapy. It is one the monitoring and evaluation indicator used in ART program. This indicator measures the proportion of adults and children with HIV known to be on treatment 12 months after initiation of antiretroviral therapy and it is one important measure of program success and is a proxy for overall quality of program. The higher the patient satisfaction rate, the higher the retention rate (Ethiopia, 2018).

#### **2.1.4. ART Program monitoring**

The OECD (2002a) defines monitoring and evaluation as follows:

Monitoring is a continuous function that uses the systematic collection of data on specified indicators to provide management and the main stakeholders of an ongoing development intervention with indications of the extent of progress and achievement of objectives and progress in the use of allocated funds (Kusek & Rist, 2004).

Evaluation is the systematic and objective assessment of an on- going or completed project, program, or policy, including its design, implementation, and results. The aim is to determine the relevance and fulfillment of objectives, development efficiency, effectiveness, impact, and sustainability. An evaluation should provide information that is credible and useful, enabling the in- corporation of lessons learned into the decision-making process of both recipients and donors (Kusek & Rist, 2004).

The careful monitoring and evaluation of HIV care and treatment play a crucial role in enabling program managers to thoroughly assess the effectiveness and adoption of interventions. Additionally, it helps to establish vital links between services and care for HIV and associated conditions (WHO, 2021).

National ART Programs are held accountable for funding and results reporting, making it essential for them to address these responsibilities. In response to this need, numerous multilateral and bilateral organizations and initiatives have collaborated to develop an elaborate tool aimed at assessing M&E Plans and Systems. This tool, known as the M&E Systems Strengthening Tool,

stands as a generic instrument designed to evaluate the data collection, reporting, and management systems utilized to measure the indicators of program and project success ((USAID), 2007).

It is worth noting that this tool is meant to be fully compatible with the National HIV/AIDS Monitoring and Evaluation Capacity Tool. Furthermore, within this tool, an array of checklists has been introduced to assess the M&E Plan of Program/Projects. Notable elements within these checklists include the confidentiality of sensitive data and client satisfaction with services delivered by the Program/project(s), among various other crucial areas ((USAID), 2007).

### **2.1.5. Patient satisfaction**

satisfied patient is more likely to develop a longer lasting relationship with their health care provider, leading to better compliance and continuity of care. Patient satisfaction is considered to be a health care out-come and predictor of treatment utilization and adherence to the care and support. The relationship between health care providers and patients (interpersonal skills) has also assumed to be the most influential factor for patient satisfaction (Gezahegn et al., 2021).

Patient satisfaction towards services has become a tool to gain attention and value amongst the patients as well as health care providers. Satisfied patients are more likely to comply with prescribed treatment and advice from doctors; they are also more likely to return for additional care especially for those on long term treatment like HIV/AIDS. Patients' satisfaction with health care services reflects the quality of services from the patients' perspective that supplements traditional indicators such as survival outcomes or processes of care (Gezahegn et al., 2021).

Determining patient satisfaction will enhance appropriate communication and building of stronger health worker patient relationship based on identified gaps and barriers to effective performance of HIV/AIDS prevention and control programs from the patients' perspective (Gezahegn et al., 2021).

Patient satisfaction assesses the relationship of patient-physician, the health institution environment, and the accessibility of the health service, especially for patients with chronic disease follow-up (Belete et al., 2023). Provider-client interaction in counselling, testing, managing opportunistic infections, documentation, and related services improve client satisfaction with HIV

services and enrolment and retention in the HIV services cascade (Tiruneh & Woldeyohannes, 2022)

### **2.1.6. The Donebidean model**

The Donebidean model is a conceptual framework for investigating health services and assessing healthcare quality. The approach divides quality of care information into three categories: “structure”, “process”, and “outcomes”. The model represents the concept of input, process, and output elements that influence patient satisfaction. In the paradigm, input components refers to the attributes of the settings in which care occurs. It includes the physical and organizational infrastructure, such as facilities, equipment, human resources, and the administrative structure of the healthcare organization. while process factors encompasses the methods and procedures of care delivery. It involves the interactions between healthcare providers and patients and the actual delivery of healthcare services. Whereas, output factors are the result of the input and process factors (Halili et al., 2024).

The framework is connected by unidirectional arrows in that order of “structure”, “process”, and “outcomes”. The model is however criticised for its sequential and linear progression from structure to process and outcome. Some suggest that there are other critical factors such as patient characteristics and environmental factors that need to be incorporated for a more holistic evaluation of quality care. Donabedian reiterates that the three spheres have within them linkages that allow researchers to develop conceptual frameworks for understanding their own health systems (Fenny et al., 2014).

In this study “structure”, “process”, and “outcomes” are framed as :

structure: Type of medical record used and Health facility where care was given

Process: Triage, Health professional patient interaction, Privacy and respect, and Health care quality

Output: patient satisfaction.

In the following sub sections, components of structure and process are discussed.

## **Medical record**

According to an Ethiopian study, there was a high risk of confidentiality breaches with the paper recording methods. Patient chart folders were stacked in the ART visit rooms so that patients and onlookers could view the several available confidential files. Additionally, runners who move these records from one department to another could quickly access private patient history. This was particularly useful when a patient's medical record needed to be transferred. Most participants thought that by allowing password security, which would limit access to personal patient data to authorized physicians, an EMR would increase the confidentiality of a patient's medical record (Gebre-Mariam et al., 2012).

According to some of the clinicians, a system that relies mostly on paper has difficulties for completeness, timely access, and legibility. Physicians brought out a number of issues with the lab request procedure, such as lengthy wait times at the lab. They also mentioned how time-consuming it was to fill out the paperwork and how occasionally lab results would disappear. Furthermore, there was no feedback system in place to alert doctors of unfinished lab findings (Gebre-Mariam et al., 2012).

The intended outcomes of an EMR, based on the effects that participants perceived, include enhanced continuity of care, prompt access to patients' full medical records, enhanced patient care efficiency, increased productivity and efficacy of work for clinicians, decreased medication errors, enhanced patient privacy and confidentiality, automation across hospital departments, enhanced clinician-to-clinician communication, availability of decision support, integration of HIV programmes, enhanced data entry and retrieval efficiency, and increased job satisfaction (Gebre-Mariam et al., 2012).

Currently in Hospitals under the administration of Addis Ababa Health beuro, patient on ART service are given care using both ERM and PMR system due to the fact that the service is not integrated into the existing EMR server. EMR is used when HIV patient came with a compliant and need care other than the follow-up, they are seen in the same manner as regular patient in outpatient service. While PMR is used for HIV patient who came for follow-up and has no compliant.

This creates a multiple and fragmented patient information and medical history, long waiting time to see a doctor due to confusion created by the system at triage, long time to retrieve patient card, loss of patient card, breach of privacy and confidentiality, and shorter consultation time for the patient. This has led to dissatisfaction with ART service and ultimately could lead to adherence issues. Health professionals also face problem due to multiple entry of patient information, crowded working space due pilling of patients and cards caused by long waiting time for retrieval of patient card. This ultimately decreases consultation time and compromise of case need to be given to patients (Abiy et al., 2018; Adissu et al., 2020; Atsebeha & Chercos, 2018; Belete et al., 2023; Doyore & Moges, 2016; Gebre-Mariam et al., 2012; Gezahegn et al., 2021; Halili et al., 2024; Nigussie et al., 2020; Nikitha & Sushant, 2021; Sekandi et al., 2023; Tiruneh & Woldeyohannes, 2022; Wali et al., 2020).

## **Facility**

Health facility where care is given has a potential to affect patient satisfaction through Problems in the availability, infrastructure, and shortage of trained human power (Tiruneh & Woldeyohannes, 2022). Study done in Mizan tepi also suggests Problems in the availability and quality of diagnostic facilities, infrastructure and shortage of trained human power (Nigussie et al., 2020).

The ART centre should ideally be located near the Medicine OPD. If this is not feasible, a suitable place should be identified within the same campus which is accessible to patients keeping in mind cross-referral to and from various departments. Signage depicting directions to the ART centre should be clearly placed in the institution at strategic locations ("Operational guidelines for ART services," 2012)

## **Triage**

Triage is Sorting of patients into priority groups according to their needs and the resources available. Triage is an important organizing principle for any health centre that manages large numbers of patients. Making HIV services available at health centre level both increases the patient load and brings in more patients with severe illness from opportunistic infections. In addition, quality management of HIV patients requires a special 'HIV triage' to be sure that patients at high risk receive priority interventions rapidly, both for treatment and prevention of transmission, as

well as to prioritize tracing and tracking of patients lost to follow-up. Some deaths can be prevented by quickly identifying very sick children and adults on arrival at a centre and starting treatment without delay ("WHO Guidelines Approved by the Guidelines Review Committee," 2008).

Waiting times at the facility during consultation are frequently high, especially in settings with a high burden of HIV infection. Reorganizing triage services , by implementing a systems for appointment, separating clinical consultation visits from visits to pick up medicine, integrating and linking services and family-focused care may reduce waiting times at the health facility(Ethiopia, 2018).

### **Patient Privacy.**

Unfortunately, profound stigma continues to surround HIV infection, which means that attention to patient confidentiality is very important. It is important for health centres to maintain the privacy of HIV clinics and ensure that a person's HIV status is not identifiable to others in any way. As an example:

Sign that is discreet, as well as clear and helpful. Patients may be more likely to attend a clinic labelled 'family care clinic,' 'comprehensive care clinic,' or even 'infectious diseases clinic' than one labelled 'HIV/AIDS clinic'. The second is Appointment systems that shield patient's names from view (of the public/or other providers). Appointment books need to be considered private medical records, and whenever possible health centre staff need to avoid calling out patients' names in public areas such as waiting rooms. HIV-positive and HIV negative patients need to be processed in the same manner (e.g. their names called out in the same way) so that their status is not identified by others in the waiting room ("WHO Guidelines Approved by the Guidelines Review Committee," 2008).

The third is Medical records that minimize accidental or involuntary disclosure of HIV infection. A patient's HIV status needs to be clearly indicated on their medical charts; however, this marking needs to be discreet to avoid unnecessary disclosure. Patient medical records need to be secured at all times. Color-coding or obvious marks that designate HIV status on patient-held records need to be avoided. In addition, written referrals to services such as radiology and laboratory testing

need to look as much like referrals from other areas of the health centre as is feasible ("WHO Guidelines Approved by the Guidelines Review Committee," 2008).

These concerns need to be balanced with the efforts to normalize HIV infection as a chronic disease and to emphasize the confidentiality that applies to all clinical care within a health centre.

Finally health professionals should seek feedback from PLHIV on the issues of privacy and stigma. The ability to gain PLHIV input will vary from facility to facility. In some cases, including PLHIV on community advisory boards will be the best way to obtain information, while in others, focus groups or less formal methods may be equally revealing ("WHO Guidelines Approved by the Guidelines Review Committee," 2008).

## **Health professional and patient interaction**

Patient management is the relationship between providers on a clinical team and the individual patient over time. The success of individual patient management (including survival) and of the ART program depends on keeping patients on a first-line regimen as long as possible. There must therefore be a serious commitment by the patient, treatment supporter, clinical team and the community to almost perfect adherence and to remaining on a first-line regimen as long as possible. And one of the critical predictor for perfect adherence is patient satisfaction (WHO, 2006).

## **2.2. Empirical review**

### **2.2.1. Structure and patient satisfaction**

According to a Malaysian study involving 321 patients, healthcare facilities that use electronic medical records (EMR) have higher average patient satisfaction scores 4.08 versus 3.81 (P-value  $0.03 < 0.05$ ) than those that do not use EMR or manual patient records. According to a study conducted on Chinese hospital patients, patient satisfaction was impacted by the use of EMR in hospitals ( $b = .162, p = .000 < 0.01$ ) (Setyadi & Nadjib, 2023).

In a study done Indonesia found that, In order for patients to feel satisfied with the usage of EMR when doctors perform examination services, doctors' EMRs use of improve communication and

engagement between doctors and patients. The majority of patients (76.6%) who felt satisfied with how their doctors used EMR had a positive perception of EMR. The results has a significant correlation ( $p\text{-value} < \alpha = 0.05$ ;  $r = 0.689$ ) between patients' perceptions of the utilization of EMR and patient satisfaction. Patient satisfaction is more closely correlated with the way EMR communication is perceived (72%) than it is with the way the clinical function of the EMR is perceived (48.2%) (Lubis et al., 2023).

In a study done in Saudi Arabia revealed that overall patient satisfaction with the EMR was statistically significant compared with the PMR. the physician's attention to the patient during the consultation improved and the physician's explanation of the reasons for ordering tests and medication improved. The time spent with the patient during the consultation also improved, active listening improved, the patients' perception that there is time to ask about their health improved, and patients feeling that the physician is more interested in the medical records improved. In line with this the physician-patient relationship in general has improved and reduced the waiting time, there was more efficient prescription dispensing, improved appointment booking, and an improved referral system (Wali et al., 2020). Effective physician-patient communication can significantly enhance patient satisfaction, compliance, and adherence to the treatment plan. Numerous studies have indicated that information technologies may play a role in facilitating the exchange of understanding between healthcare providers and patients (Wali et al., 2020).

### **2.2.2. ART service patient satisfaction rate, Process, and sociodemographic character**

A study done in Urban Uganda found that the overall mean score of general ART patient satisfaction was 66% and was affected by Technical & interpersonal skills of health professionals and quality of Health care service factors (Sekandi et al., 2023).

The overall patient satisfaction of ART at Gondar town health centers, Midre-Genet referral hospital, and Hossana town was 75.4%, 75.2%, and 70.1% respectively. Factors such as age, marital status, educational status, occupation, income, information provision and guidance, privacy, absence of signs and directions to ART clinic, Health facility, interpersonal communication, perceived availability of the services, perceived patient provider interaction,

perceived privacy during examination, and perceived confidentiality of medical record, were determinant factors for patient satisfaction (Adissu et al., 2020; Atsebeha & Chercos, 2018; Doyore & Moges, 2016).

A higher satisfaction rate was seen in a study done on Addis Ababa, Jimma town, and University of Gondar with 86.4%, 89.6%, 92.6% respectively were satisfied with ART clinical services provided. Among the factors; months of ART follow-up, age, consultation time, measures taken by health care providers to keep confidentiality, location of the clinic in the facility, duration of stay on ART ,and waiting time to get service were associated (Gezahegn et al., 2021; Nikitha & Sushant, 2021; Tiruneh & Woldeyohannes, 2022).

While a lower satisfaction rate was seen in a study done at Mizan-Tepi university, The overall level of clients’ satisfaction with HIV and AIDS services was 55.2%. Educational status , duration of advice/ consultation time, and duration of treatment/ follow-up were identified as factors significantly associated (Nigussie et al., 2020).

### 2.3. Conceptual framework

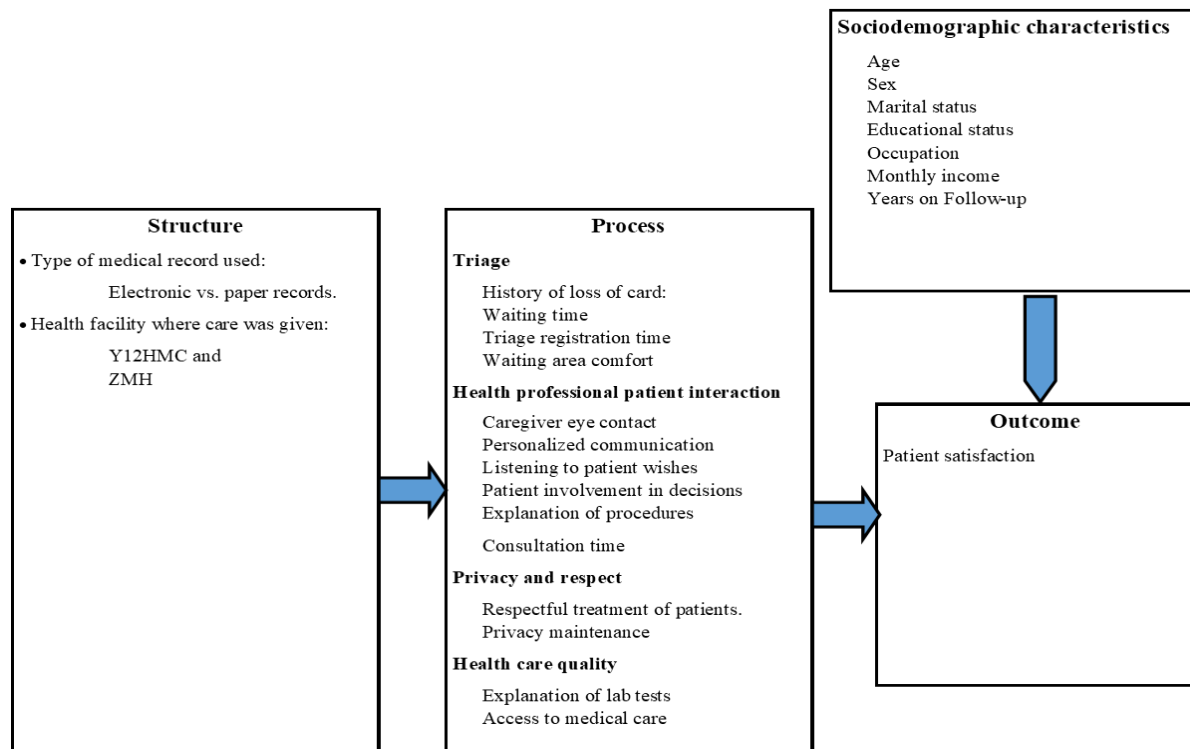


Figure 1: Donabedian Framework of ART patient satisfaction

## **Chapter Three**

### **3. Methods**

#### **3.1. Study Design**

This study employed a mixed study design with Donabedian's structure–process–outcome model of health care quality as a framework. Both quantitative and qualitative data were collected simultaneously (Tiruneh & Woldeyohannes, 2022)

The study used Cross sectional study design for quantitative analysis be used to assess patient satisfaction level. Key informant interviews was used for Qualitative analysis, and then triangulation of the finding was done. The data source was be primary data from the primary users such as (physicians and nurses) and patient on ART program that have got service from either paper based or EMR.

#### **3.2. Target population**

The target population of this study includes All Adults HIV patients that are currently on ART therapy and all staffs who are currently working at Anti-Retroviral Therapy ART sites Government Hospitals of Addis Ababa. According to EPHI's 2023 report there are currently 107,496 Adults living with HIV (Institute, May 2023).

#### **3.3. Study population**

All Adults HIV patients that are currently on ART therapy at Government Hospitals under the administration of Addis Ababa health who fulfil the inclusion criteria

#### **3.4. Sampling procedure**

Out of the Six Government Hospital under Addis Ababa city health beuro administration, since all have implemented EMR System for clinical services except ART service purposive sampling technic will be used to select two hospital with most HIV patient on ART therapy. This Hospitals are Zewditu memorial Hospital, Zewditu Hospital is Ethiopia's leading hospital in the treatment of ART patients and currently treats over 6,000 each month (contributors, 26 November 2023 09:24 UTC), and Yekatit 12 Hospital medical collage.

A sample size of 200 was drawn using Carvalho Method as shown in Fig 1, this is done using EPHI's 2023 report that states there are 107,496 Adults living with HIV in Addis Ababa (Institute, May 2023). Convenient sampling was used until satisfactory sample is collected from both sites,

<b>Population size</b>	<b>Small</b>	<b>Medium</b>	<b>Large</b>
51-90	5	13	20
91-150	8	20	32
151-280	13	32	50
281-500	20	50	80
501-1200	32	80	125
1201-3200	50	125	200
3201-10,000	80	200	315
10,001-35,000	125	315	500
35,001-150,000	200	500	800

Source: Carvalho (1984)

Figure 2: Carvalho's Sample size determination

Key informant indicators were selected using purposive sampling technique from Hospital's physicians and nurses until satisfactory result is obtained.

### **3.5. Methods of data collection**

A Structured questionnaire of 15 Questions using a 5-point Likert scale (5= Strongly Agree, 4= Agree, 3 Neutral, 2= Disagree, 1= Strongly disagree) to find ART services patient satisfaction Level and additional 14 supplementary questions of structure and process were used to collect quantitative data. Key informant interviews will be used to collect qualitative data using open-ended questionnaires. Data collection techniques such as client exit interviews, and in-depth interviews were used.

The questionnaire was adapted and developed based on the Donebidean Model framework through a review of various relevant literatures (Doyore & Moges, 2016; Gebre-Mariam et al., 2012; Gezahegn et al., 2021; Halili et al., 2024; Kitesa et al., 2021; Nigussie et al., 2020; Tiruneh & Woldeyohannes, 2022; Wali et al., 2020). Checklists were used for in-depth interviews. Questionnaires were translated into the local language and then back translated to English by another person to maintain internal consistency.

Data was collected by 6 medical professionals using a data abstraction sheet, which was prepared on the Kobo toolbox. Data collectors were trained on the study objective and the use of the Kobo toolbox.

All interviews from KII data were translated, transcribed, and coded for software analysis. Data was collected from May 1 to May 30, 2024.

### **3.6. Inclusion Exclusion criteria**

Inclusion criteria

- Patient must have experienced both paper-based and EMR system during ART follow-up.
- Age  $\geq$  18 years

### **3.7. Data Analysis Methods**

Before the actual data collection, a pre-test was performed. The purpose of the pre-test was to ascertain patients' understanding of the items by asking about the appropriateness of responses and the time required to fill out the questionnaire. Finally, ambiguous and unclear questions were addressed. The supervisor and principal investigator conducted daily supervision during data collection fieldwork and the data were checked for completeness daily. Data were checked for proper collection then downloaded in Excel format. In Excel, the data was coded separately, cleaned, and then exported to SPSS windows version 26 for analysis. Qualitative data were transcribed, translated and analysed using the MAXQDA Version 20 software program and used to complement the quantitative findings.

Descriptive statistics such as frequency, proportion, mean, and median of the variables were used to report the descriptive results. A reliability estimate was conducted and Cronbach's alpha was 0.81 for the client satisfaction measurement tools as shown in table 1 below.

Each response was categorized and scored as follows: 'strongly disagree' = 1, 'disagree' = 2, 'uncertain' = 3, 'agree' = 4, and 'strongly agree' = 5. Furthermore, each study participant's sum of each score was converted to a percentage score (computed using SPSS), and conversion to percentage was done as 1 to 1.99 = (0% to 24.99%), 2 to 2.99 = (25% to 49.99%), 3 to 3.99 = (50% to 74.99%), and 4-5 = (75% to 100%). The overall satisfaction was considered the sum of a percent satisfaction score of 75% and above as satisfied (Badacho et al., 2023; Kitesa et al., 2021). Bivariate logistic regression analysis was conducted and variables that satisfied the assumption of

$p \leq 0.25$ , which is the commonly used cutoff in our research community were considered as candidates for multivariate analysis and multivariate analysis was used to check statistical significance at  $p < 0.05$ .

Table 1: Reliability test

<b>Reliability Statistics</b>	
Cronbach's Alpha	N of Items
.812	15

### **3.8. Ethical Considerations**

This study will follow ethical guidelines accordance with the requirements of Addis Ababa University, school of commerce Institutional Review Board. Ethical approval from Addis Ababa Health bureau and Yekatit 12 Hospital Medical collage was obtained prior to the study. The data collection has adhere to the principles of beneficence, non-maleficence, respect for autonomy, justice, and maintain respect for participants' autonomy and decision.

The study has prioritized the protection of participants' rights, safety, and confidentiality. During data collection, informed consent from all study participants will be obtained, providing detailed information about the research, and explaining that there are no risks by participating in the survey. Additionally, the data collected will be stored in a secure and confidential manner to ensure participants' privacy and confidentiality. This study has ensured equity in participant selection and data collection, avoiding any potential for bias and discrimination.

### **3.9. Operational definition**

**Waiting time-** is “the length of time from when the patients registered at reception by EHR or manually to the time the patient sees Doctor for evaluation at ART clinic, 1hr is cut off point for OPD”(Kitesa et al., 2021)

## Chapter four

### 4. Result

The results section is organized into four specific subsections: sociodemographic, Donabedian's process, structure, and overall satisfaction. Each subsection contains a detailed description of the findings, which are presented using tables, written explanations, and visual representations such as figures or graphs. This comprehensive approach allows for a thorough and multifaceted presentation of the results.

In total, 199 participants 114 (57.3%) from Yekatit 12 Hospital Medical collage, and 85 (42.37%) from Zewditu Memorial Hospital were included in this study with a respondent rate of 99.5%.

#### 4.1. Socio-demographic and determinate factors

Almost two third 126 (63.3%) of the participants were female. The mean age of the participant was  $43 \pm 13.6$  years. Half 101 (50.8%) were married, while just a little over one third of the participants 71 (35.7%) have diploma or above education. One third 67 (33.7%) are private employees with one fifth 40 (20.1%) are unemployed and around 60 (30.2%) had income of less than 1500 birr per month (Table 1). Majority of the participants 116 (58.3%) had ART follow-up for more than 10 years. Moreover, substantial number of participant's medical record 73 (36.7%) were lost at one point in their follow-up (Table 1).

Table 2: sociodemographic and determinant factor

Socio-demographic Variables	Total
Hospital	Yekatit 114(57.3%)
	Zewditu 85(42.7%)
Sex	Female 126(63.3%)
	Male 73(36.7%)
Age	$\leq 34$ years 55(27.6%)
	35-54 years 99(49.7%)
	$\geq 55$ years 45(22.6%)
Marital status	Single 75(37.7%)
	Other 23(11.6%)
	Married 101(50.8%)
Education status	0-4 27(13.6%)
	5-8 32(16.1%)
	9-12 69(34.7%)

	Diploma and above	71(35.7%)
Occupation	Government Employee	38(19.1%)
	Private	67(33.7%)
	Mechant	11(5.5%)
	daily laborer	9(4.5%)
	student	18(9.0%)
	Unemployed	40(20.1%)
	Other	16(8.0%)
Income	≤ 1500	60(30.2%)
	>1500	139(69.8%)
Years on ART Follow-up	≤ 10 years	83(41.7%)
	≥ 11 years	116(58.3%)

**4.2. Process component**

**4.2.1. Triage**

In this results triage factors subcomponents are: History of loss of card, Waiting time at Triage, registration time, and other triage components.

**Waiting time**

In this study, around 34% of participant waited more than an hour to get care.

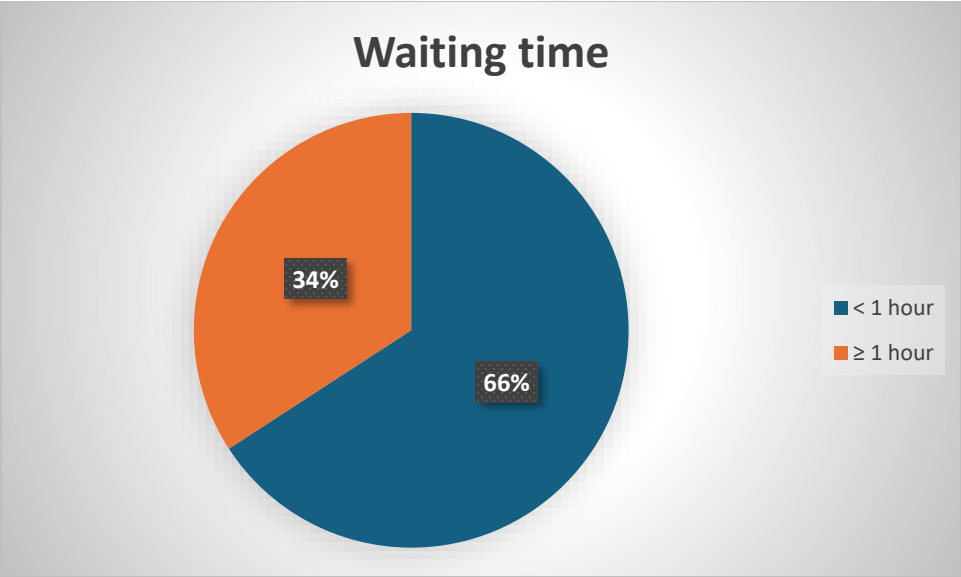


Figure 3: Waiting time

Of the study participants 52 (26.1%) felt they have waited long to get service (Table 1). The main reasons for this are; late arrival of health professional, Searching Patient medical record takes longer, Large numbers of patients with few doctors, Patients jumping queue, and Sign and direction indicators were available to ease ways (Table 3).

Table 3: Reasons for long waiting time

		count	percentage
Did Doctor/ Health professional arrived late?	No	46	88.5%
	Yes	6	11.5%
Searching Patient medical record takes longer?	No	28	53.8%
	Yes	24	46.2%
Large numbers of patients with few doctors/ Health professional	No	27	51.9%
	Yes	25	48.1%
Patients jumping queue	No	35	67.3%
	Yes	17	32.7%
Sign and direction indicators were available to ease ways	No	20	38.5%
	Yes	32	61.5%

### History of loss of card

More than a third 73 (36.7%) of patients had lost their card at some point in their follow-up.

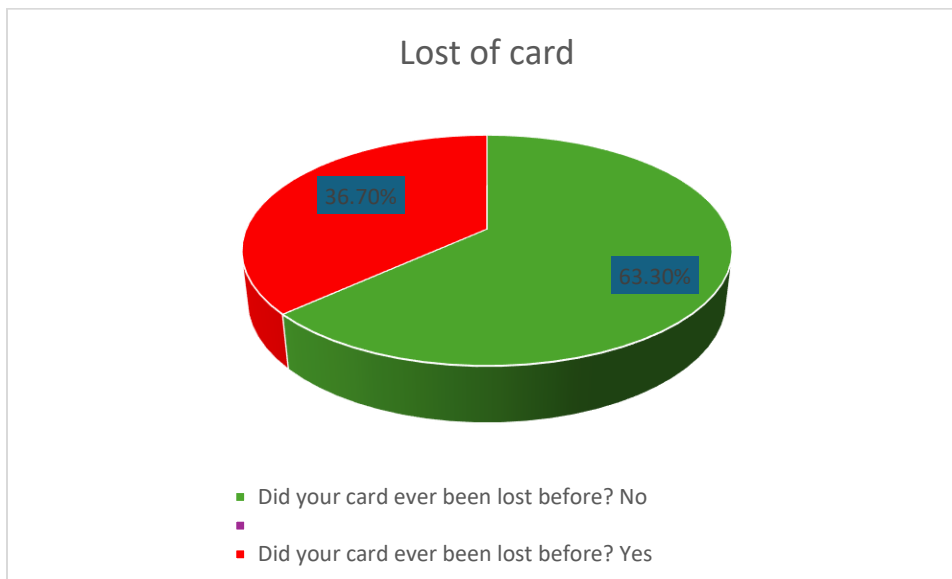


Figure 4: Lost of card at triage in ART patient.

### Other Triage components

This studies participant were not satisfied the overall triage service 71.83%, especially with the overall registration 71%. But was satisfied and were comfortable with the overall waiting area service 77.25%.

Table 4: Triage component of Donabedian Framework

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean score
Is the Registration of general information at triage is shorter?	1 (0.5%)	25 (12.6%)	18 (9%)	116 (58.3%)	39 (19.6%)	3.84 (71%)
Are you Comfortable with Over all waiting area of services?	1 (0.5%)	14 (7%)	8 (4%)	119 (59.8%)	57 (28.6%)	4.09 (77.25%)
Do you think Patient waiting time could be shortened ?	6 (3%)	28 (14.1%)	23 (11.6%)	106 (53.3%)	36 (18.1)	3.69 (67.25%)
Overall triage score						3.87 (71.83%)

#### 4.2.2. Health professional and patient interaction

In this subsection of the study, the interaction factors between health professionals and patients were analyzed and broken down into several subcomponents. These subcomponents include the amount of time spent during consultations, the level of eye contact made by caregivers, the degree of personalized communication, the extent to which patient wishes were listened to, the level of patient involvement in decision-making, and the thoroughness of procedure explanations.

##### Consultation time

Is the amount of time care is given to patients by health professionals. In this study around 38% had less than 10 minutes spent consulting at health professionals' offices for care as seen in Figure below.

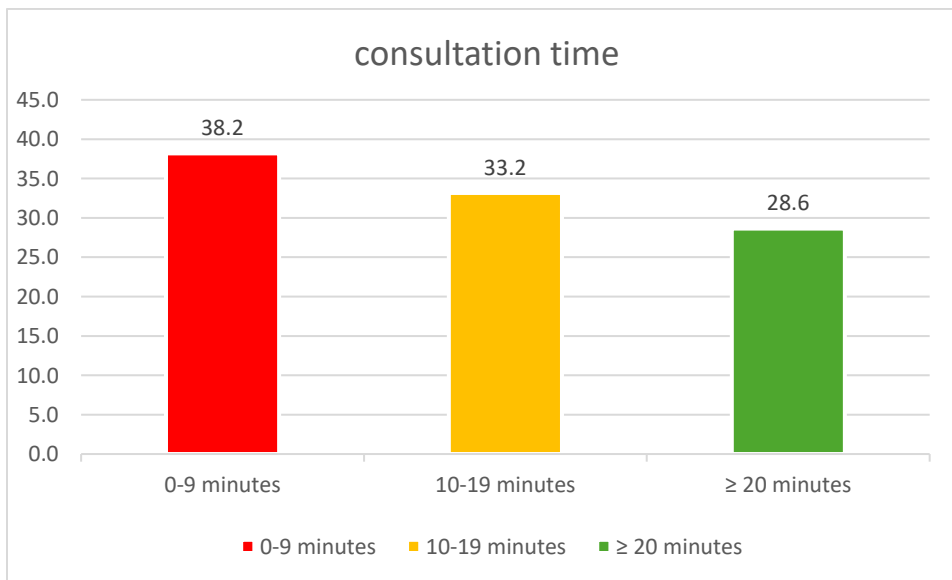


Figure 5: consultation time

## Health professional communication and service delivery

The study found that, overall, patients expressed satisfaction with various aspects of their interactions with healthcare providers 77.85%. Specifically, they were pleased with the level of eye contact, personalized communication, attentiveness to their wishes, and explanations of medical procedures. However, the study also revealed that patients felt dissatisfied with their level of involvement in the decision-making process regarding their medical care

Table 5: Health professional communication and service delivery

health professional communication and service delivery	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean score
Does the care giver have eye contact during the examination	1 (0.5%)	16 (8%)	8 (4%)	118 (59.3%)	56 (28.1%)	4.07 (76.75%)
Health care workers communicated me by calling my name	0	7 (3.5%)	12 (6%)	115 (57.8%)	65 (32.7%)	4.20 (80%)
Health care workers Listened to my personal wishes with regard to my care.	0	12 (6%)	21 (10.6%)	112 (56.3%)	54 (27.1%)	4.05 (76.25%)
Explanation of medical procedures is good	0	8 (4%)	10 (5%)	123 (61.8%)	58 (29.1%)	4.16 (79%)
Health care worker helped me take part in decisions concerning my care.	0	13 (6.5%)	21 (10.6%)	123 (61.8%)	42 (21.1%)	3.97 (77.25%)
Over all professional communication and service delivery						4.11 (77.85%)

### 4.2.3. Health care quality

In this specific sub section of the study, The various components of healthcare quality, including access to medical care whenever it was needed and the quality of laboratory services. The findings indicated that the participants expressed satisfaction with the quality of ART service, with 78% and 76.5% reporting satisfaction and overall satisfaction with quality of care 77.6%.

Table 6: Health care quality

healthcare quality	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean score
Did you have Access to medical care whenever you need?	0	8 (4%)	9 (4.5%)	134 (67.3%)	48 (24.1%)	4.12 (78%)
How was the Laboratory service?	0	15 (7.5%)	13 (6.5%)	111 (55.8%)	60 (30.2%)	4.09 (77.25%)
Over all Healthcare quality						4.10 (77.6%)

#### 4.2.4. Privacy and respect

The participants expressed their satisfaction with the level of privacy and respect displayed by healthcare workers. They felt that their privacy was well-maintained 79.5% and that they were treated with the utmost respect 79.25.

Table 7: Privacy and respect

Privacy and respect	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean score
Respect is shown by Health care workers	2 (1%)	6 (3%)	4 (2%)	132 (66.3%)	55 (27.6%)	4.17 (79.25%)
My privacy was maintained	0	6 (3%)	18 (9%)	109 (54.8%)	66 (33.2%)	4.18 (79.5%)
Overall privacy and respect						4.175 (79.37%)

#### 4.3. Structure component

The structure component of Donabedian’s framework contains the type of medical record that the patient was served and the facility where care was given.

Of the study participants, almost half 49.5% of them were unsatisfied with paper based medical record, while two third of the participants were satisfied with Electronic medical record 66.7%. vast majority of participant at who were cared at Yekatit 12 HMC 68.1% were satisfied with ART service while majority of participants at Zewditu MH 57.8% were unsatisfied with ART service.

Table 8: Structure component

Structure component		unsatisfied	satisfied
Medical Record	Paper-based MR	51 (49.5%)	52 (50.5%)
	EMR	32 (33.3%)	64 (66.7%)
Hospital	Yekatit	35 (42.2%)	79 (68.1%)
	Zewditu	48 (57.8%)	37 (31.9%)

### Medical Record

#### Independent sample T-test

In order to test the hypothesis: Null Hypothesis (H<sub>0</sub>): There is no significant difference between structure component of the Donebidean model and the mean level of ART patient satisfaction (Outcome) in Selected Anti-Retroviral Therapy (ART) Service providing Hospitals of Addis Ababa, Ethiopia. Independent sample T-test was performed but failed to fulfill all assumption.

Levene's Test for Equality of Variances was 0.29 which is  $>0.05$ . so non parametric Mann-Whitney U Test was performed.

### Mann-Whitney U Test

Based on this finding of the table below, we rejected the null hypothesis. We accepted the alternate hypothesis:

Table 9: Mann-Whitney U Test

Hypothesis Test Summary				
	Null Hypothesis	Test	Sig.	Decision
1	The distribution of overall Mean satisfaction is the same across categories of Type of Medical Record used.	Independent-Samples Mann-Whitney U Test	.044	Reject the null hypothesis.
Asymptotic significances are displayed. The significance level is .050.				

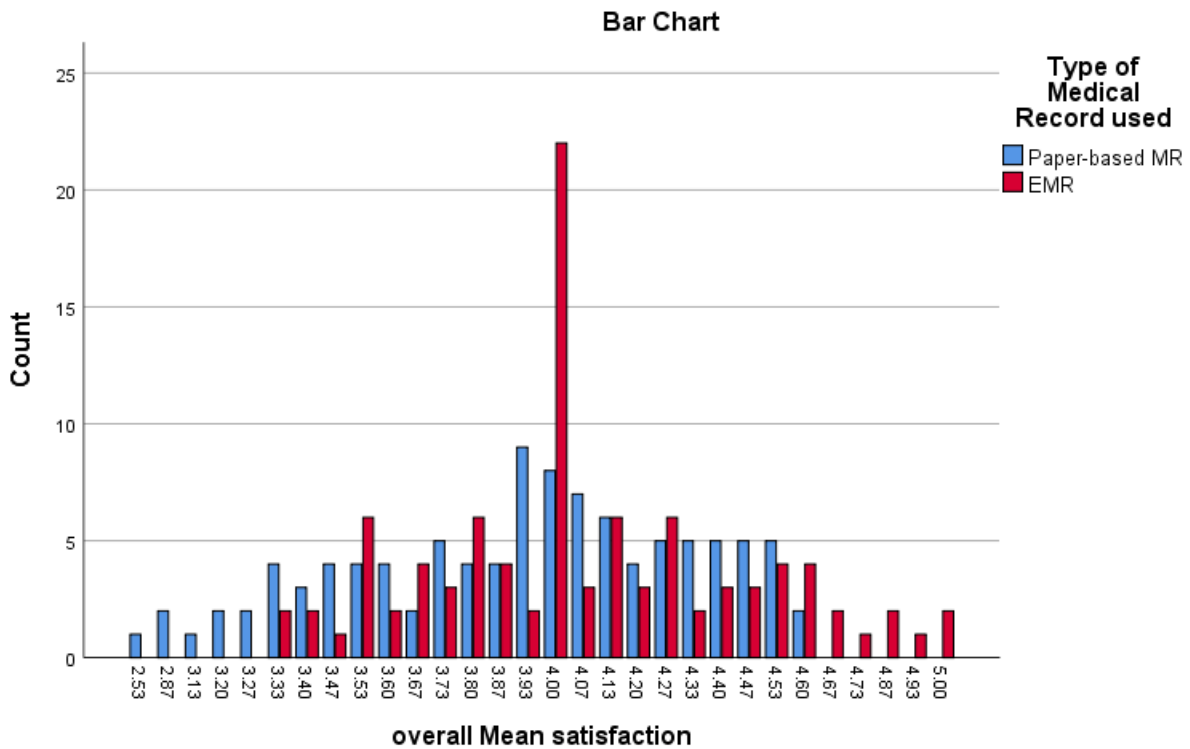


Figure 6: Over all patient satisfaction and type of medical record used.

#### 4.4. patient satisfaction (Outcome)

In this study majority 61.3% of Patients on ART are satisfied with the service as seen in the fig below with an overall mean level of satisfaction of 76.25%.

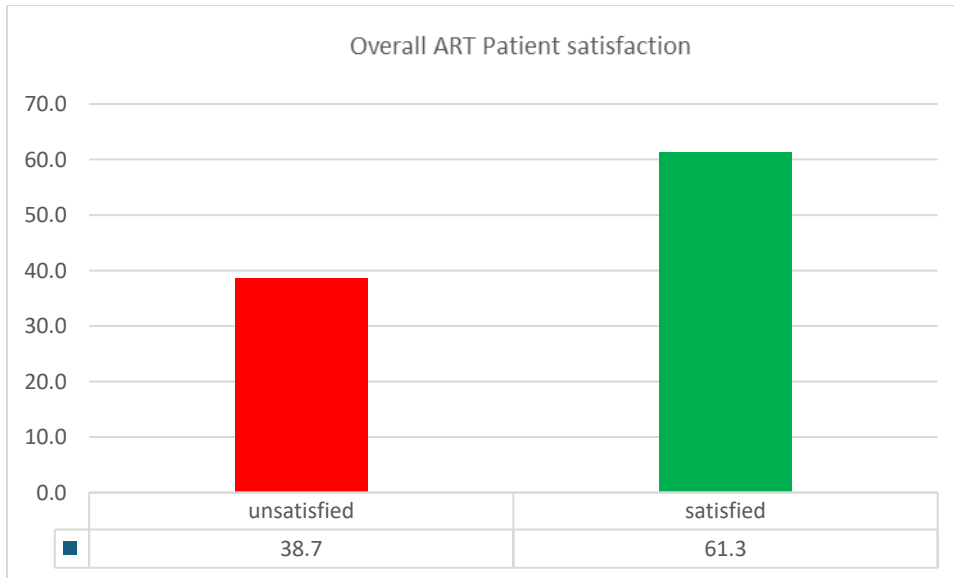


Figure 7: Overall patient satisfaction

Table 10: Overall mean level of patient satisfaction.

Report		
Over all mean level of satisfaction		
Mean	N	Std. Deviation
4.0511	199	.41520

To determine the association between structural and process component and the outcome of the Donebidean model one to one binary logistic regression was performed and variable of P-value <0.25 were computed using multiple binary logistic regression models. The association was declared significant at  $p < 0.05$ , and odds ratio with its 95% confidence intervals.

The overall patient satisfaction disaggregated by the different factors included in the final model is presented in Table 11 below . Up on one-to-one binary logistic regression analysis occupation, Hospital (Facility), waiting time, consultation time, and history of loss of card had P value of < 0.25. On multiple binary logistic regression analysis participants who received care at Zewditu

memorial Hospital were more than four time more likely to be satisfied compared to Yekatit 12 Hospital medical collage (AOR 4.30, 95% CI: 2.2–8.42,  $p<0.05$ ). ART patient waiting for less than one hours to get service are two times more likely to be satisfied compare to those who waits for more than an hour (AOR 2.03, 95% CI: 1.03–3.99,  $p<0.05$ ). while patients who spent more than 20 minutes with health professional consulting about care are more than two and half time more likely to be satisfied than those who had consultation time of less than 10 minutes (AOR 2.66, 95% CI: 1.18–5.97,  $p<0.05$ ). And finally patient on ART program who had history of loss of card are 60% less likely to be satisfied compared to patient who has not lost their card (AOR 0.4, 95% CI: 0.2–0.79,  $p<0.05$ ).

Table 11: Multivariable binary logistic regression analysis

		Unsatisfied	Satisfied	COR	P value	AOR	P-value
Age	≤34 years	19 (24.7%)	36 (29.5%)	1	1		
	35-54 years	42 (54.5%)	57 (46.7%)	1.05 (0.46-2.39)	0.916		
	≥55 years	16 (20.8%)	29 (23.8%)	0.75 (0.36-1.55)	0.437		
Sex	Female	46 (59.7%)	80 (65.6%)	1	1		
	Male	31 (40.3%)	42 (34.4%)	1.28 (0.71-2.31)	0.40		
Marital status	Single	25 (32.5%)	50 (41%)	1	1		
	Other	44 (57.1%)	57 (46.7%)	1.07 (0.39-2.85)	0.89		
	Married	8 (10.4%)	15 (12.3%)	0.69 (0.27-1.77)	0.44		
Educational status	0-4	99 (11.7%)	18 (14.8%)	1	1		
	5-8	15 (19.5%)	17 (13.9%)	1.38 (0.54-3.5)	0.490		
	9-12	24 (31.2%)	45 (36.9%)	0.78 (0.34-1.81)	0.560		
	Diploma and above	29 (37.7%)	42 (34.4%)	1.30 (0.65-2.57)	0.460		
Occupation	working	58 (75.3%)	85 (69.7%)	1	1	1	
	unemployed	15 (19.5%)	25 (20.5%)	0.50 (0.15-1.60)	0.23*	0.63 (0.17-2.43)	0.50
	others	4 (5.2%)	12 (9.8%)	0.56 (0.15-2.04)	0.37	0.87 (0.19-3.84)	0.85
Income	≤ 1500	22 (28.6%)	38 (31.1%)	1			
	>1500	55 (71.4%)	84 (68.9%)	1.13 (0.60-2.11)	0.7		
Years on Follow-up	≤ 10 years	32 (41.6%)	51 (41.8%)	1			
	≥ 11 years	45 (58.4%)	71 (58.2%)	1.01 (0.57-1.8)	0.97		
Hospital	Yekatit 12HMC	30 (39%)	84 (68.9%)	1	1	1	
	Zewditu MH	47 (61%)	38 (31.1%)	3.46 (1.9-6.3)	<0.001*	4.30 (2.2-8.42)	<0.001**
Medical Record	PMR	36 (46.8%)	67 (54.9%)	1	1		
	EMR	41 (53.2%)	55 (45.1%)	1.39 (0.78-2.46)	0.26		
Waiting time	< 1 hour	43 (55.8%)	88 (72.1%)	1	1		

	≥ 1 hour	34 (44.2%)	34 (27.9%)	2.05 (1.12-3.72)	0.01*	2.03 (1.03-3.99)	0.03**
consultation time	0-9 minutes	25 (32.5%)	51 (41.8%)	1	1		
	10-19 minutes	24 (31.2%)	42 (34.4%)	1.69 (0.82-3.47)	0.1*	2.01 (0.92-4.37)	0.07
	≥ 20 minutes	28 (36.4%)	29 (23.8%)	1.97 (0.97-3.99)	0.06*	2.66 (1.18-5.97)	0.01**
Did your card ever been lost before?	No	56 (72.7%)	70 (57.4%)	1	1	1	
	Yes	21 (27.3%)	52 (42.6%)	0.50 (0.27-0.93)	0.03*	0.4 (0.2-0.79)	0.01**

N.B \* indicates association of one to one analysis , \*\* indicates a significant association with patient satisfaction

## 4.5. Qualitative Thematic Analysis

The thematic analysis of the 14 interviews revealed several key themes related to patient experiences and preferences regarding healthcare services. These themes were Patient Experience and Satisfaction, Medical Staff Interaction and Care, System-Based Service vs. Paper-Based Service, and Triage System and Queuing Experience.

### **Patient Experience and Satisfaction:**

This theme encompassed aspects such as ease of access, waiting area comfort, patient privacy, and service quality. Patients appreciated respectful and polite treatment during registration and expressed satisfaction with the efficiency of the process. Concerns are raised regarding patient confidentiality and the stigma associated with accessing healthcare services. Patients express discomfort over encounters with acquaintances in healthcare settings, emphasizing the need for privacy:

*It exposes those people on ART to other patients. For instance, I met one of my friends while waiting for my name to be called by the doctor. [IDI\_Y12H\_04]*

Health professionals also asserted that EMR promotes transparency and accountability in healthcare delivery. It reduces errors associated with manual record-keeping, ensures medication availability, and enhances decision-making processes:

*The electronic medical record will solve problems like handwriting errors, dosages, etc. This system helps incorporate all the details of a prescription, creating clarity. [KII\_ZMH\_05]*

### **Health professionals Interaction and Care:**

Patients emphasized the importance of effective communication, involvement in decision-making, and respect from medical staff. Respondents expressed satisfaction with the quality of care received, emphasizing the positive attitude of healthcare professionals towards them, and patients felt that their opinions were considered and their privacy maintained. Patients feel valued and involved in their care. The engagement between healthcare providers and patients extends to health education and communication efforts. Patients appreciate the effort made by clinics and hospitals in explaining medications and addressing their concerns.

*They listen to our concerns. They give us good health education around my care and have a good attitude toward us. [IDI\_ZMH\_03]*

### **Electronic-Based medical system vs. Paper-Based medical record system:**

Patients generally favored Electronic-based medical reporting due to its advantages in accessibility and organization. Electronic systems are praised for decreasing medication prescription errors and streamlining processes. One of the respondents mentioned:

*The electronic system improves the quality of care better than the paper based system. For example, medication prescription errors have decreased with the introduction of electronic medical systems. It also reduces the time we spend in the hospital. [KII\_ZMH\_01]*

There are some concerns and inconvenience encountered by patients on EMR: One of the respondents mentioned:

*They told me the machine is not working properly, so they perform one test per day. I will get my results next week. [IDI\_ZMH\_01]*

### **Triage System and Queuing Experience:**

Both patients and Health professionals highlight improvements in triage services facilitated by EMR. Most respondents noted that the system ensures clarity in patient records, reduces human error, and enhances the overall triage experience. A respondent iterated:

*The advantage of the system is that your files can be found easily. I have not encountered a case in which my file was said to be lost after introducing this system. [IDI\_Y12H\_03]*

But Patients and Health professionals also highlighted the importance of efficiency in triage processes and suggested improvements such as additional space for queuing and better communication regarding medication availability. Health professionals' express frustration over delays in service delivery due to networking issues and emphasize the need for backups. Patients voice concerns regarding waiting times and schedule disruptions due to prolonged prolonged waiting time at triage. They emphasize the importance of efficient time management and the impact in their overall experience. Both study participants and informants resented:

*There are delays in obtaining the medical record, and the queues get mixed up at times. Sometimes, you can be here first but get the service last. [IDI\_Y12H\_02]*

*The waiting area isn't very problematic, but the clinic's infrastructure has some problems. [KII\_Y12H\_01]*

*Even though we have a good system, if the networking is bad, similar problems I faced today will continue. There should always be a backup for such times. So, the electronic system alone made all this difficult." [KII\_Y12H\_02]*

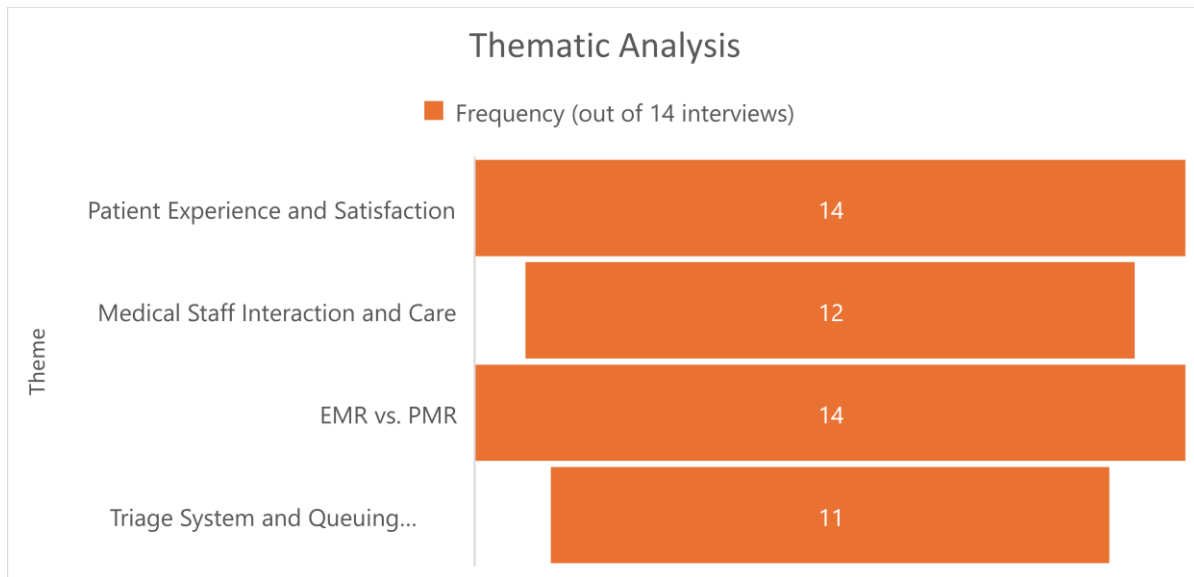


Figure 8: Thematic analysis

## 4.6. Integration of Results

Qualitative data from key informant interviews and quantitative results show that majority of patient on ART are satisfied with the service 63.1%. Patients are more satisfied on key informant interviews and on qualitative analysis with Electronic medical record 66.7 % than paper-based record 50.5%.

Participants where not satisfied with the triage service they have received 71.83%, Health professionals express frustration over delays in service delivery due to networking issues and emphasize the need for backups while Patients voice concerns regarding waiting times and schedule disruptions due to prolonged waiting time at triage.

when is comes to Health care system patients had a mean satisfaction score of 77.6% indicating they were satisfied with the quality of care. Concerns were raised regarding accessing healthcare services on KII.

High level of satisfaction was seen towards Health professionals communication was seen 77.85%. Key informants in an interview expressed satisfaction with the quality of care received, emphasizing the positive attitude of healthcare professionals towards them, and patients felt that their opinions were considered and their privacy maintained.

over all privacy and care has satisfactory level with 79.37% . This was supported by respondents from Key informants Interview, but some informants raised there concern regarding patient confidentiality, privacy, and the stigma.

## Discussion

This study assessed the Patient Satisfaction with Antiretroviral Therapy Services in selected hospitals of Addis Ababa Using the Donebidean Model. Both Qualitative and Quantitative data was used in this study. According to the findings, Majority of patients on ART were satisfied with the service. Using Donebidean Model, It was found that factors such as Facility and type of medical record used from structure component; and factors from process components waiting time, consultation time, and history of loss of card were found to have significant association with patient satisfaction of Antiretroviral Therapy Services.

The mean age of the participants was 43 years which is comparable to a study done in Gondor Ethiopia and Eastern Ugandan study, but much higher than a study in Hossana town southern Ethiopia, Mizan-Tepi Ethiopia (Baleeta et al., 2023; Doyore & Moges, 2016; Nigussie et al., 2020; Nikitha & Sushant, 2021). Female participant were dominant in this study with 63.3%, this finding is similar with a study in Jimma Ethiopia and Addis Ababa (Gezahegn et al., 2021; Tiruneh & Woldeyohannes, 2022). In this study 58.3% patients had ART follow-ups for over 10 years this is almost the same as a study in East central Uganda(Baleeta et al., 2023).

In the process component, Triage is one area that needs major improvement. This study found that 34% of participants waited more than an hour for care, with significant dissatisfaction related to waiting times. This is consistent with a study by (Gezahegn et al., 2021; Halili et al., 2024; Nikitha & Sushant, 2021), which identified long waiting times as a major barrier to patient satisfaction in ART clinics. The reasons for long waits, such as late arrival of health professionals and inefficient record searching method, among others. The other area that need improvement at triage is loss of card, which is a significant factor that contributes for dissatisfaction in ART care.

The high satisfaction rates with healthcare provider interactions in this study align with findings from research by (Atsebeha & Chercos, 2018; Doyore & Moges, 2016; Halili et al., 2024; Sekandi et al., 2023), which reported similar levels of patient satisfaction with perceived patient provider interaction. The consultation time was found to have significant association with patient satisfaction and this is supported by similar studies (Nigussie et al., 2020; Nikitha & Sushant, 2021; Tiruneh & Woldeyohannes, 2022) implying the advantage spending more time consultation patients have an impact in their satisfaction. However, the noted dissatisfaction with patient

involvement in decision-making that suggests a need for enhanced training and protocols to foster shared decision-making.

The study coined that there is a high satisfaction with privacy and respect which are comparable to studies like (Atsebeha & Chercos, 2018; Doyore & Moges, 2016; Halili et al., 2024), who reported similar satisfaction levels in ART clinics. This consistency suggests that interpersonal aspects of care are generally well-handled in these settings, though continuous training on patient confidentiality and respect should be maintained to prevent any decline in standards.

Patient were satisfied with the overall healthcare quality. However, ongoing efforts are needed to maintain these high standards, particularly in expanding access and reducing service disparities between the two hospitals.

Based on this result, there are sufficient evidence to reject the null hypothesis of Null: There is no significant difference between process component of the Donebidean model and the mean level of ART patient satisfaction (Outcome) in Selected Anti-Retroviral Therapy (ART) Service providing Hospitals of Addis Ababa, Ethiopia. So the alternate hypothesis is accepted.

In the structural component, The preference for EMRs over paper-based records in our study is consistent with global trends toward digitalization in healthcare. Studies by (Kitesa et al., 2021) have shown that EMRs improve patient satisfaction by reducing errors and wait times. However, our findings that more than half 49.5% of participants were unsatisfied with paper-based records suggest a pressing need to transition fully to EMRs to improve patient experiences.

Facilty or in this case hospital where care was given has also influenced patient satisfaction this is consistent with similar studies (Adissu et al., 2020; Kitesa et al., 2021) highlighting the need to have experience sharing symposiums and other platform where facilities can share with each other.

Based on this result, there are sufficient evidence to reject the null hypothesis of Null: There is no significant difference between structure component of the Donebidean model and the mean level of ART patient satisfaction (Outcome) in Selected Anti-Retroviral Therapy (ART) Service providing Hospitals of Addis Ababa, Ethiopia. So the alternate hypothesis is accepted.

In the outcome component study majority 61.3% of Patients on ART are satisfied with the service as seen in the fig below with an overall mean level of satisfaction of 76.25% which is above 75%.

This level is Higher compared to a study in Urban Uganda and a study done at Mizan-Tepi university (Nigussie et al., 2020; Sekandi et al., 2023). But, it is comparable to studies done in Gondor town health center, Midre-Genet referral Hospital Tigray, and a study in Hossana (Adissu et al., 2020; Atsebeha & Chercos, 2018; Doyore & Moges, 2016). However, studies done in Addis Ababa selected Hospital, Jimma Town, and University of Gondor showed a higher ART patient satisfaction rate than this study.

In Key informants interview analysis of the 14 interviews revealed four major themes with varying frequencies. "Patient Experience and Satisfaction" and "System-Based Service vs. Paper-Based Service" were the most frequently mentioned themes, each appearing in all 14 interviews. This indicates that patients are highly concerned with the overall quality of ART service. This finding is supported by similar study done in Addis Ababa(Tiruneh & Woldeyohannes, 2022).

## **CHAPTER FIVE**

### **5. Conclusion**

This study assessed the Patient Satisfaction with Antiretroviral Therapy Services in selected hospitals of Addis Ababa Using the Donebidean Model. The results indicated that Structural and process components have significantly affected ART patient satisfaction and reveal both strengths and areas needing improvement. one area of improvement is with a lost medical records, indicating a need for better record management. While the interactions with healthcare professionals were generally positive, long waiting times and inefficiencies in the triage process were major sources of dissatisfaction. Patients expressed a clear preference for electronic medical records and noted higher satisfaction with the quality of care at Zewditu Memorial Hospital compared to Yekatit 12.

### **Recommendation**

The result of this study shows that although patients on ART are satisfied with the care provided, there needs to be a room for improvement to reach the levels of satisfaction reached in the above studies.

One of the areas for Improvement is enhancing Record Management Systems through Transition fully to EMRs across all hospitals to reduce record loss and improve efficiency. And, Implement regular training sessions for staff on the use and management of EMRs.

Second are of improvement is to Reduce Waiting Times by Introducing more efficient queue management systems. Increase staffing levels during peak hours to handle the patient load more effectively. And, Streamline the triage process to ensure quicker registration and consultation.

The third area is to Improve Patient Involvement in Decision-Making through Training healthcare providers on shared decision-making practices. Develop protocols that encourage active patient participation in their care plans. Moreover, Maintaining High Standards of Privacy and Respect by Regularly conduct workshops on patient confidentiality and respectful communication; and Implement feedback mechanisms where patients can anonymously report any breaches in privacy or disrespect.

Additionally, by Address Infrastructure and Resource Disparities through Ensuring that all hospitals have adequate resources and infrastructure to provide consistent quality of care; and Allocate funds and resources based on the specific needs of each hospital to address gaps.

Finally, Continuous Monitoring and Evaluation by Establish a monitoring and evaluation framework to regularly assess patient satisfaction and service quality; and Use patient feedback to make data-driven improvements in service delivery.

By addressing these areas, healthcare providers can significantly enhance the quality of ART services, leading to higher patient satisfaction and better health outcomes.

## References

- (USAID), t. U. S. A. f. I. D. (2007). Monitoring and Evaluation Systems Strengthening Tool. In.
- Abdulwadud, O., Admassu, K., Endale, A., Tesfaye, N., Teshome, G., Akalu, A., & Woldemichael, D. (2011). Retrospective review of antiretroviral therapy program data in accredited private hospitals in Addis Ababa City Administration, Ethiopia. *Ethiopian Journal of Health Development*, 25(2), 110-115.
- Abiy, R., Gashu, K., Asemaw, T., Mitiku, M., Fekadie, B., Abebaw, Z., Mamuye, A., Tazebew, A., Teklu, A., Nurhussien, F., Kebede, M., Fritz, F., & Tilahun, B. (2018). A Comparison of Electronic Medical Record Data to Paper Records in Antiretroviral Therapy Clinic in Ethiopia: What is affecting the Quality of the Data? *Online J Public Health Inform*, 10(2), e212. <https://doi.org/10.5210/ojphi.v10i2.8309>
- Adissu, G., Biks, G. A., & Tamirat, K. S. (2020). Patient satisfaction with antiretroviral therapy services and associated factors at Gondar town health centers, Northwest Ethiopia: an institution-based cross-sectional study. *BMC Health Services Research*, 20(1), 93. <https://doi.org/10.1186/s12913-020-4934-z>
- Atsebeha, K. G., & Chercos, D. H. (2018). High antiretroviral therapy service delivery satisfaction and its' associated factors at Midre-genet hospital; Northwest Tigray, Ethiopia. *BMC Health Services Research*, 18(1), 223. <https://doi.org/10.1186/s12913-018-3055-4>
- Badacho, A. S., Chama, A., Darebo, T. D., & Woltamo, D. D. (2023). Client satisfaction with antiretroviral treatment services in South Ethiopian public health facilities: an institution-based cross-sectional survey. *Global Health Action*, 16(1), 2212949. <https://doi.org/10.1080/16549716.2023.2212949>
- Baleeta, K., Muhwezi, A., Tumwesigye, N., Kintu, B. N., Riese, S., Byonanebye, D., Mbonye, M., Mwehire, D., Iriso, R., Ayebazibwe, B., Bailey, L., Lopez, D., McGough, L., Etukoit, M., Nantamu, D., Nakitende, L., Tibengana, B., & Wasswa, J. (2023). Factors that influence the satisfaction of people living with HIV with differentiated antiretroviral therapy delivery models in East Central Uganda: a cross-sectional study. *BMC Health Services Research*, 23(1), 127. <https://doi.org/10.1186/s12913-023-09114-2>
- Belete, T. M., Tadesse, S. A., Atnafu, K., Kelemu, M., & Asrie, A. B. (2023). Patient satisfaction with antiretroviral therapy service provided by pharmacists in Dembia district health institutions, Northwest Ethiopia. *AIDS Research and Therapy*, 20(1), 38. <https://doi.org/10.1186/s12981-023-00533-z>
- contributors, W. (26 November 2023 09:24 UTC). *Zewditu Hospital*. Wikipedia, The Free Encyclopedia. [https://en.wikipedia.org/w/index.php?title=Zewditu\\_Hospital&oldid=1186922099](https://en.wikipedia.org/w/index.php?title=Zewditu_Hospital&oldid=1186922099)
- Deribew, A., Biadgilign, S., Deribe, K., Dejene, T., Tessema, G. A., Melaku, Y. A., Lakew, Y., Amare, A. T., Bekele, T., Abera, S. F., Dessalegn, M., Kumsa, A., Assefa, Y., Glenn, S. D., Frank, T., Carter, A., Misganaw, A., & Wang, H. (2019). The Burden of HIV/AIDS in Ethiopia from 1990 to 2016: Evidence from the Global Burden of Diseases 2016 Study. *Ethiop J Health Sci*, 29(1), 859-868. <https://doi.org/10.4314/ejhs.v29i1.7>
- Doyore, F., & Moges, B. (2016). Client satisfaction to antiretroviral treatment services and associated factors among clients attending ART clinics in Hossana Town, Southern Ethiopia.
- Ethiopia, F. (2018). National consolidated guidelines for comprehensive HIV prevention, care and treatment. *Addis Ababa: Fmoh*, 1-238.
- Fenny, A. P., Enemark, U., Asante, F. A., & Hansen, K. S. (2014). Patient satisfaction with primary health care - a comparison between the insured and non-insured under the National Health Insurance Policy in Ghana. *Glob J Health Sci*, 6(4), 9-21. <https://doi.org/10.5539/gjhs.v6n4p9>
- Gebre-Mariam, M., Borycki, E., Kushniruk, A., & Purkis, M. E. (2012). An Electronic Medical Record (EMR) implementation framework for HIV care and treatment facilities in Ethiopia.

- Gezahegn, M., Wolde, D., Ejigu, Y., Tolessa, F., & Fufa, D. (2021). Patient Satisfaction with Antiretroviral Therapy Service and Associated Factors at Jimma Town Public Health Facilities, Southwest, Ethiopia. *HIV AIDS (Auckl)*, 13, 691-697. <https://doi.org/10.2147/hiv.S300840>
- Halili, A., Lubago, B. E., & Agide, F. D. (2024). Patient Satisfaction with Antiretroviral Therapy Services in Hadiya Zone, Central Ethiopia Using the Donebidean Model: A Time-Motion Study. *Patient Relat Outcome Meas*, 15, 93-103. <https://doi.org/10.2147/prom.S452389>
- IAPAC. (March 2021). *Antiretroviral Therapy (ART)*.
- Institute, E. P. H. (May 2023). HIV Related Estimates and Projections in Ethiopia for the Year 2022- 2023. In.
- Kitesa, G., Mamo, E., Teshome, A., Binu, W., Abi, H., & Abdisa, F. (2021). *Effect of Electronic Health Records on Patient Satisfaction and Waiting Time at Selected Hospitals, in Addis Ababa*. <https://doi.org/10.21203/rs.3.rs-1005135/v1>
- Kusek, J. Z., & Rist, R. C. (2004). *Ten steps to a results-based monitoring and evaluation system: a handbook for development practitioners*. World Bank Publications.
- Lubis, I. K., Ningtyas, A. M., & Nurfillaeli, N. (2023). Patient Perceptions of Electronic Medical Record Use by Doctors in GMC Health Center Clinic. *Contagion: Scientific Periodical Journal of Public Health and Coastal Health*, 5(1), 204-215.
- Minister of Health, E. (Dec 2023). Ethiopian HIV NATIONAL STRATEGIC PLAN 2023/24-2026/27. In.
- Nigussie, T., Aferu, T., Mamo, Y., & Feyisa, M. (2020). Patient Satisfaction with HIV and AIDS Services in Mizan-Tepi University Teaching Hospital, Southwest Ethiopia. *HIV AIDS (Auckl)*, 12, 403-410. <https://doi.org/10.2147/hiv.S254744>
- Nikitha, O. S., & Sushant, M. K. (2021). Client Satisfaction of Antiretroviral Therapy Service Delivery: A Cross-Sectional Study at an Antiretroviral Therapy Center. *Int J Appl Basic Med Res*, 11(1), 14-20. [https://doi.org/10.4103/ijabmr.IJABMR\\_46\\_20](https://doi.org/10.4103/ijabmr.IJABMR_46_20)
- Operational guidelines for ART services. (2012). In.
- Sekandi, J. N., Castellanos, M. E., Woldu, H., Kakaire, R., Mutembo, S., & Mutanga, J. N. (2023). Patient satisfaction among persons living with HIV/AIDS and receiving antiretroviral therapy in urban Uganda: A factor analysis. *PLoS One*, 18(2), e0280732. <https://doi.org/10.1371/journal.pone.0280732>
- Setyadi, D., & Nadjib, M. (2023). The Effect of Electronic Medical Records on Service Quality and Patient Satisfaction: A Literature Review. *Journal Research of Social Science, Economics, and Management*, 2, 2780-2791. <https://doi.org/10.59141/jrssem.v2i12.500>
- Tiruneh, C. T., & Woldeyohannes, F. W. (2022). Antiretroviral Therapy Service Quality and Associated Factors at Selected Public Hospitals, Addis Ababa, Ethiopia, 2021. *HIV AIDS (Auckl)*, 14, 129-142. <https://doi.org/10.2147/hiv.S348254>
- Wali, R. M., Alqahtani, R. M., Alharazi, S. K., Bukhari, S. A., & Quqandi, S. M. (2020). Patient satisfaction with the implementation of electronic medical Records in the Western Region, Saudi Arabia, 2018. *BMC Fam Pract*, 21(1), 37. <https://doi.org/10.1186/s12875-020-1099-0>
- WHO. (2006). PATIENT MONITORING GUIDELINES FOR HIV CARE AND ANTIRETROVIRAL THERAPY (ART).
- WHO. (2021). <WHO consolidatird ART guideline-eng.pdf>.
- WHO Guidelines Approved by the Guidelines Review Committee. (2008). In *Operations Manual for Delivery of HIV Prevention, Care and Treatment at Primary Health Centres in High-Prevalence, Resource-Constrained Settings: Edition 1 for Fieldtesting and Country Adaptation*. World Health Organization

Copyright © World Health Organization 2008.

Yilema, S. A., Shiferaw, Y. A., Belay, A. T., & Belay, D. B. (2024). Mapping the spatial disparities of HIV prevalence in Ethiopian zones using the generalized additive model. *Scientific Reports*, 14(1), 6215. <https://doi.org/10.1038/s41598-024-55850-8>

## ANNEX

Annex 1.

The Cover Letter for the Questionnaire is as follows

Dear Participant

You are invited to participate in a research study titled “Challenges of integrating Anti-Retroviral Therapy (ART) paper-based record into (Electronic Medical Record) EMR and its effect on patient satisfaction In selected Hospitals of Addis Ababa, Ethiopia”. Dr. Dawit Bekele is conducting this study as a partial fulfilment Masters of project Managment program at Addis Ababa University, school of commerce. The purpose of this study is to identify Challenges of integrating Anti-Retroviral Therapy (ART) paper-based record into (Electronic Medical Record) EMR and its effect on patient satisfaction in our Addis Ababa through qualitative and quantitative survey.

In this study, you will be asked a standardized Questionnaire. Your participation in this study is voluntary and you are free to withdraw your participation from this study at any time. The questionnaire should take only 10 minutes for quantitative and around 30 to 40 minute for qualitative to complete. This study has an approval of Institutional Review Board of Addis Ababa University, school of commerce, Addis Ababa Health beuro, and the hospital. There are no risks associated with participating in this study.

The study collects no identifying information of any respondent. All of the responses will be recorded anonymously. While you will not experience any direct benefits from participation, information collected in this study may benefit in the future clients, healthcare providers, and Hospitals. The study contents and findings are the sole responsibility of the individual conducting it. If you have any questions regarding this research in general, please contact me Dr. Dawit at [ddawitb@gmail.com](mailto:ddawitb@gmail.com) or my advisor Dr. Mahir at [mahir.jibril@gmail.com](mailto:mahir.jibril@gmail.com). By completing and submitting this questionnaire, you are indicating your consent to participate in the study. Your participation is highly appreciated.

Dr. Dawit Bekele, MA Candidate, Addis Ababa University, school of commerce

Advisor Dr. Mahir Jibril

Annex 2

**Questioner 1: Compare Patient Satisfaction and Determinant Factors between Paper-Based Medical Records Versus Electronic Medical Records in Selected Anti-Retroviral Therapy (ART) Service providing Hospitals (Quantitative Questioner)**

**Part One: Respondent social-demographic information**

101. Your Age እድሜ \_\_\_\_\_ years

102. Sex ጾታ 1. Male ወንድ 2. Female ሴት

103. Marital status

1. Single (ያላገባ)

2. Married (ያገባ)

104. Education status (የትምህርት ደረጃ) :

105. Occupation (ስራ) \_\_\_\_\_ 1) Gov. employee (የመንግስት ሰራተኛ) 2) private employed (የግል ስራ)

3) student ተማሪ 4) Merchant ነጋዴ

5) Daily

Laborer በየቀን ሠራተኛ 6) unemployed ሥራ አጥ 7) other ሌላ \_\_\_\_\_

106. How much is your monthly income? የወር ገቢዎ ምን ያህል ነው? (መጠኑን ይግለጹ) \_\_\_\_\_ EB (specify the amount)

107. How long have you been on follow-up? በከትትል ላይ ምን ያህል ጊዜ ቆይተዋል? \_\_\_\_\_ years (ዓመታት)

108. Time of arrival at triage ወደ ሐኪም ቤት ስንት ሰዐት ደረሱ \_\_\_\_\_ (local time)

109. Time of arrival at physician አርሶዎ ሐኪምን ለማየት ስንት ሰዐት ገቡ \_\_\_\_\_ (local time)

110. Time of exit from physician ስንት ሰዐት ወጡ \_\_\_\_\_ (local time)

111. Did you wait longer time than your expectation? 1. YES 2. NO ከጠበቁት በላይ ጊዜ ቆይተዋል? 1. አዎ 2. አይ

If “YES” to Q12, go to table, if no pass to part 2 “አዎ” ከሆነ፣ ወደ ክፍል 2 አለፉ

112.	Did Doctor arrived late? ሐኪም ዘግይተው መጡ?	1. YES 1 አዎ	2. NO 2. አይ	3. Don't know 3 አላስታውስም
113.	Searching Patient medical record takes longer? የሕክምና መዝገብን መፈለግ ረዘም ያለ ጊዜ ወስዷል?			
114.	Large numbers of patients with few doctors ጥቂት ሐኪሞች ግን ብዙ ቁጥር ያላቸው ታካሚዎች አሉ (በቂ ያልሆነ የጤና ባለሙያዎች ነበሩ)			
115.	Patients jumping queue ታካሚዎች ወረፋ ሳይጠብቁ ይገባሉ			
116.	Sign and direction indicators were available to ease ways ምልክቶች እና የአቅጣጫ ጠቋሚዎች በቀላሉ እየመሩን ነበር።			
117.	Inadequate health personnel			

118. Did your card ever been lost before? 1 yes 2. NO 3 Don't recall ካርድዎ ከዚህ በፊት ጠፍቶ ያውቃል? 1 አዎ 2. አይ 3 አላስታውስም

**Part two: - Respondents Perceptions and Satisfaction about Paper based system**

ምላሽ ሰጪዎች በወረቀት ላይ የተመሰረተ ስርዓት ያላቸው ግንዛቤ እና እርካታ (አማርኛ ትርጉም)

Code No	Statement	Strongly agree(5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly disagree(1)
		በጣም እስማማለሁ (5)	እስማማለሁ (4)	ገለልተኛ (3)	አልስማማም (2)	በጣም አልስማማም (1)
201.	የህክምና መዝገብ በወረቀት ላይ በተመሰረተ ስርዓት ሲስተናገዱ፣ በፈለግኩት ጊዜ አስፈላጊውን የሕክምና እርዳታ አግኝታችኋል? In a paper-based system, Did you have Access to medical care whenever you need?					
202.	የህክምና መዝገብ በወረቀት ላይ በተመሰረተ ስርዓት ሲስተናገዱ፣ የልዩታ ስርዓት ላይ አጠቃላይ የህክምና መረጃ መመዝገብ አጠር ያለ ነው? In a paper-based system, Is the Registration of general information at triage is shorter.					
203.	የህክምና መዝገብ በወረቀት ላይ በተመሰረተ ስርዓት ሲስተናገዱ፣ ወረዳ መጠባበቂያ ቦታው ምቹ ነው? In a paper-based system, Comfortable with Over all waiting area of services					
204.	የህክምና መዝገብ በወረቀት ላይ በተመሰረተ ስርዓት ሲስተናገዱ፣ በምርመራው ወቅት ህክምና ባለሙያው የዓይን ዓይን ግንኙነት ያደርጉ ነበር? In a paper-based system, Does the care giver have eye contact during the examination					
205.	የህክምና መዝገብ በወረቀት ላይ በተመሰረተ ስርዓት ሲስተናገዱ፣ የህክምና ባለሙያው ስምትን እየጠሩ አስተናግደዋቸዋል? In a paper-based system, Health care workers communicated me by calling my name					
206.	የህክምና መዝገብ በወረቀት ላይ በተመሰረተ ስርዓት ሲስተናገዱ፣ በህክምና ባለሙያው የእኔን እንክብካቤ በተመለከተ የግል ምኞቴን አዳመጡ። Health care workers Listened to my personal wishes with regard to my care.					
207.	የህክምና መዝገብ በወረቀት ላይ በተመሰረተ ስርዓት ሲስተናገዱ፣ በህክምና ባለሙያው ክብርን በጠበቀ ሁኔታ ተስተናግደዋል? Respect is shown by Health care workers					

208.	የህክምና መዝገብ በወረቀት ላይ በተመሰረተ ሥርዓት ሲስተናገዱ፣ ሚስጥራዊ እና ግላዊነትቴ ተጠብቆ ነበር ብለው ያምናሉ? My privacy was maintained					
209.	የህክምና መዝገብ በወረቀት ላይ በተመሰረተ ሥርዓት ሲስተናገዱ፣ የሕክምና ሂደቶ በጥሩ ሁኔታ ተብራራቶልኛል። Explanation of medical procedures is good					
210.	የህክምና መዝገብ በወረቀት ላይ በተመሰረተ ሥርዓት ሲስተናገዱ፣ የላብራቶሪ ምርመራዎች የታዘዘበት ምክንያት እና ውጤቱም በሚገባ ተብራርቶሎታል? Explanation of Laboratory tests is good					
211.	የህክምና መዝገብ በወረቀት ላይ በተመሰረተ ሥርዓት ሲስተናገዱ፣ የህክምና ባለሙያው የእኔን እንክብካቤ በሚመለከቱ ውሳኔዎች ላይ እንድሳተፍ ረድቶኛል። Health care worker helped me take part in decisions concerning my care.					
212.	በወረቀት ላይ የተመሰረተ የህክምና መዝገብ አያያዝ እና አሰራር፣ ለታካሚ የሚሰጠውን የእንክብካቤ እና የአገልግሎት ጥራት ያሻሽላል ብለው ያስባሉ? Does a paper-based system improve the quality of care and services delivered to the patient.					
213.	በወረቀት ላይ የተመሰረተ የህክምና መዝገብ አያያዝ እና አሰራር ፣ መድሃኒት እና የመድሃኒት ማዘዣ ስህተቶችን ይቀንሳል ብለው ያስባሉ? Does a paper-based system reduces medication and prescription errors.					
214.	በወረቀት ላይ የተመሰረተ የህክምና መዝገብ አያያዝ እና አሰራር፣ አገልግሎት አንኪያገኙ ወረፋ የሚጠብቁበትን ጊዜን ይቀንሳል ብለው ያስባሉ? Do you think a paper-based system reduces waiting time.					
215.	በወረቀት ላይ የተመሰረተ የህክምና መዝገብ አያያዝ እና አሰራር፣ የእርሶን ከህክምና ባለሙያው ጋር ያሉትን ግንኙነት የሚያሻሽል ይመስሎታል? Does a paper-based system improve Patient interaction with health care practitioners.					

**Part Three: - Respondents Perceptions and Satisfaction about EMR system**

ምላሽ ሰጪዎች በ Electronic ላይ የተመሰረተ ስርዓት ያላቸው ግንዛቤ እና እርካታ (አማርኛ ትርጉም)

Code No	Statement	Strongly agree(5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly disagree(1)
		በጣም እስማማለሁ (5)	እስማማለሁ (4)	ገለልተኛ (3)	አልስማማም (2)	በጣም አልስማማም (1)
301.	የህክምና መዝገብ በ Electronic ላይ በተመሰረተ ስርዓት ሲስተናገዱ፣ በፈለጋችሁ ጊዜ አስፈላጊውን የህክምና እርዳታ አግኝታችኋል?  In an EMR system, Did you have Access to medical care whenever you need?					
302.	የህክምና መዝገብ በ Electronic ላይ በተመሰረተ ስርዓት ሲስተናገዱ፣ የልዩታ ስርዓት ላይ አጠቃላይ የህክምና መረጃ መመዝገብ አጠር ያለ ነው ?  In an EMR system, Is the Registration of general information at triage is shorter.					
303.	የህክምና መዝገብ በ Electronic ላይ በተመሰረተ ስርዓት ሲስተናገዱ፣ ወረፋ መጠባበቂያ ቦታው ምቹ ነው?  In an EMR system, Comfortable with Over all waiting area of services					
304.	የህክምና መዝገብ በ Electronic ላይ በተመሰረተ ስርዓት ሲስተናገዱ፣ በምርመራው ወቅት ህክምና ባለሙያው የዓይን ለዓይን ግንኙነት ያደርጉ ነበር?  In an EMR system, Does the care giver have eye contact during the examination					
305.	የህክምና መዝገብ በ Electronic ላይ በተመሰረተ ስርዓት ሲስተናገዱ፣ የህክምና ባለሙያው ስምትን እየጠሩ አስተናግደዋቸዋል?  In an EMR system, Health care workers communicated me by calling my name					
306.	የህክምና መዝገብ በ Electronic ላይ በተመሰረተ ስርዓት ሲስተናገዱ፣ In an EMR system, Health care workers Listened to my personal wishes with regard to my care.					
307.	የህክምና መዝገብ በ Electronic ላይ በተመሰረተ ስርዓት ሲስተናገዱ፣ በህክምና ባለሙያው ክብርን በጠበቀ ሁኔታ ተስተናግደዋል?  ≤ ≥					

	In an EMR system, Health care workers Respect is shown by Health care workers					
308.	የህክምና መዝገብ በ Electronic ላይ በተመሰረተ ሥርዓት ሲስተናገዱ፣ ሚስጥሬ እና ግላዊነትቴ ተጠብቆ ነበር ብለው ያምናሉ?  In an EMR system, My privacy was maintained					
309.	የህክምና መዝገብ በ Electronic ላይ በተመሰረተ ሥርዓት ሲስተናገዱ፣ የሕክምና ሂደቶ በጥሩ ሁኔታ ተብራራቶልኛል።  In An EMR system, Explanation of medical procedures is good					
310.	የህክምና መዝገብ በ Electronic ላይ በተመሰረተ ሥርዓት ሲስተናገዱ፣ የላብራቶሪ ምርመራዎች የታዘዘበት ምክንያት እና ውጤቱም በሚገባ ተብራርቶሎታል?  In an EMR system, Explanation of Laboratory tests is good					
311.	የህክምና መዝገብ በ Electronic ላይ በተመሰረተ ሥርዓት ሲስተናገዱ፣ የህክምና ባለሙያው የእኔን እንክብካቤ በሚመለከቱ ውሳኔዎች ላይ እንድሳተፍ ረድቶኛል።  In an EMR system, Health care worker helped me take part in decisions concerning my care.					
312.	በ Electronic ላይ የተመሰረተ የህክምና መዝገብ አያያዝ እና አሰራር፣ ለታካሚ የሚሰጠውን የእንክብካቤ እና የአገልግሎት ጥራት ያሻሽላል ብለው ያስባሉ?  Does EMR improve the quality of care and services delivered to the patient.					
313.	በ Electronic ላይ የተመሰረተ የህክምና መዝገብ አያያዝ እና አሰራር፣ መድሃኒት እና የመድሃኒት ማዘዣ ስህተቶችን ይቀንሳል ብለው ያስባሉ?  Does EMR system reduces medication and prescription errors.					
314.	በ Electronic ላይ የተመሰረተ የህክምና መዝገብ አያያዝ እና አሰራር፣ አገልግሎት አንኪያገኙ ወረፋ የሚጠብቁበትን ጊዜን ይቀንሳል ብለው ያስባሉ?  Do you think Patient waiting time Will be shortened by the EMR system.					
315.	በ Electronic ላይ የተመሰረተ የህክምና መዝገብ አያያዝ እና አሰራር፣ የእርሶን ከህክምና ባለሙያው ጋር ያሎትን ግንኙነት የሚያሻሽል ይመስሎታል?  Do you think EMR systems improve Patient interaction with health care practitioners.					

**Questionnaire 2: Key Informant indicator: patient Qualitative questioner**

**1. አገልግሎት ያግኙበት የህክምና መዝገብ አይደለም እና አሰራር፤**

- በ Electronic ላይ የተመሰረተ የህክምና መዝገብ አይደለም እና አሰራር (Electronic based medical Record)
- የህክምና መዝገብ በወረቀት ላይ በተመሰረተ ሥርዓት ሲስተናገዱ (paper based medical Record)
- **Years on Treatment:** How many years have you been on treatment?

በህክምና ላይ ስንት አመት ቆይተዋል? \_\_\_\_\_

**2. How did you find the triage system? የልዩ ቦታ ስርዓት እንዴት አገኙት?**

**Probe questions**

- ካርድ ለማውጣት የነበረውን ስሪት አስረዱኝ
  - ጥሩ ጎኑ ምን ምን ነበር?
  - መሻሻል አለባቸው የሚሉት ነገር ካለ ?
- የልዩ ቦታ ጋር እና አገልግሎት እስኪያግኙ ያለው የወረፋ መጠበቂያ እንዴት ነበር?
  - ጥሩ ጎኑ ምን ምን ነበር?
  - መሻሻል አለባቸው የሚሉት ነገር ካለ ?

**3. በህክምና ባለሙያው የተሰጡት አገልግሎት እንዴት ነበር?**

**Probe questions**

- ጥሩ ጎኑ ምን ምን ነበር? መሻሻል አለባቸው የሚሉት ነገር ካለ ? ከ
  - እንክብካቤ አንጻር?
  - የዓይን ለዐይን እየተያዩ አገልግሎት ከማግኘት አንጻር?
  - የእርሶን አስተያየት ከመቀበል አንጻር?
  - እርሶን በህክምና ውሳኔ ውስጥ ከማሳተፍ አንጻር?

4. አጠቃላይ የህክምና አሰጣጥ ውቅት ጥሩ ጎኑ ምን ምን ነበር? መሻሻል አለባቸው የሚሉት ነገር ካለ ? ከ

**Probe questions**

- ከብሮትን ከመጠብብቅ አንጻር?
- ሚስጥሬ እና ግላዊነትቴ ከመጠብብቅ አንጻር?
- የህክምና ሂደትን ከማብራራት አንጻር?

5. በወረቀት ላይ የተመሰረተ የህክምና መዝገብዎ አያያዝ እና አሰራር ወይም (በ Electronic ላይ የተመሰረተ የህክምና መዝገብዎ አያያዝ እና አሰራር)፤

**Probe questions**

ለታካሚ የሚሰጠውን የእንክብካቤ እና የአገልግሎት ጥራት ያሻሽላል ብለው ያስባሉ? ከ

- መድሃኒት እና የመድሃኒት ማዘዣ ስህተቶችን ከመቀነስ አንጻር?
- ወረፋ ከመቀነስ አንጻር?
- ልዩታ ከማቀላጠፍ አንጻር?
- ከህክምና ባለሙያው ጋር ያሉትን ግንኙነት ከማሻሻል አንጻር?

6. ተጨማሪ አስተያየት ወይም ጥቆማ ካሉት

**እናመሰግናለን!!!!!!!**

**2: Key Informant indicator: health professionals**

**1. Role for professional:** Please specify your role (e.g., doctor, nurse, department head).

የባለሙያ ሚና፣ እባክዎን ሚናዎን ይግለጹ. (ለምሳሌ፡ ዶክተር፣ ነርስ፣ የመምሪያው ኃላፊ)።

- **Years of Experience at ART Clinic:** How many years have you worked in healthcare or related fields?  
የስራ ልምድ፡ በዚህ ስራ ላይ ምን ያህል ዓመታት ሠርተዋል? \_\_\_\_\_

**2. How is the triage system for ART clinic? የክሊኒክ ታካሚዎች የልዩታ ስርዐቱን እንዴት ?**

**Probe questions**

- ካርድ ለማውጣት ያለው ስሪዐትን አስረዱኝ
  - ጥሩ ጎኑ ምን ምን ነበር?
  - መሻሻል አለባቸው የሚሉት ነገር ካለ ?
- ታካሚዎች የልዩታ ቦታ ጋር እና አገልግሎት እስኪያገኙ ያለው የወረፋ መጠበቂያ እንዴት ነበር?
  - ጥሩ ጎኑ ምን ምን ነበር?
  - መሻሻል አለባቸው የሚሉት ነገር ካለ ?

**3. አርሶዎ ለታካሚ የሚሰጡት አገልግሎት እንዴት ነበር?**

**Probe questions**

- ጥሩ ጎኑ ምን ምን ነበር? መሻሻል አለባቸው የሚሉት ነገር ካለ ? ከ
  - እንክብካቤ ሲሰጡ?
  - የዓይን ለዐይን እየተያዩ አገልግሎት ከማግኘት አንጻር?
  - የታካሚዎችን አስተያየት ከመቀበል አንጻር?
  - ታካሚዎችን በህክምና ውሳኔ ውስጥ ከማሳተፍ አንጻር?

4. አጠቃላይ የህክምና አሰጣጥ ውቅት ጥሩ ጎኑ ምን ምን ነበር? መሻሻል አለባቸው የሚሉት ነገር ካለ ? ከ

**Probe questions**

- የታካሚዎችን ክብር ከመጠብብቅ አንጻር?
- የታካሚዎችን ሚስጥር እና ግላዊነት ከመጠብብቅ አንጻር?
- ለታካሚዎችን የህክምና ሂደትን ከማብራራት አንጻር?

5. በወረቀት ላይ የተመሰረተ የህክምና መዝገብ አይደለም እና አሰራር ወይም (በ Electronic ላይ የተመሰረተ የህክምና መዝገብ አይደለም እና አሰራር)፤

ለታካሚ የሚሰጠውን የእንክብካቤ እና የአገልግሎት ጥራት ያሻሽላል ብለው ያስባሉ? ከ

**Probe questions**

- መድሃኒት እና የመድሃኒት ማዘዣ ስህተቶችን ከመቀነስ አንጻር?
- ወረፋ ከመቀነስ አንጻር?
- ልዩታ ከማቀላጠፍ አንጻር?
- የታካሚዎች ጋር ያሉትን ግንኙነት ከማሻሻል አንጻር?

6. ተጨማሪ አስተያየት ወይም ጥቆማ ካሉት

**እናመሰግናለን!!!!!!!**