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Assessment of Patient satisfaction towards Clinical laboratory services among Strengthening Laboratory Management towards Accreditation (SLMTA) Program Implementing Hospital Laboratories under Addis Ababa City Administration, Ethiopia

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This is to certify that the thesis prepared by Zigba Tefera, entitled:

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I. Acknowledgement

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Finally, I am grateful to the study participants for voluntarily participating in this study and Addis Ababa City Administration Health Bureau and the respective health facilities for facilitating the study.

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IV. Abbreviations

AAU	Addis Ababa University
CDC	US Centers for Disease Control and Prevention
ENAO	Ethiopian National Accreditation Office
ISO	International Organization for Standardization
IEC	International Electro-technical Commission
LQMS	Laboratory Quality Management System
SLIPTA	Step wise Laboratory Quality Improvement Process towards Accreditation
SLMTA	Strengthening Laboratory Management towards Accreditation
WHO	World Health Organization
WHO AFRO	World Health Organization Regional office for Africa

V. Operational definitions

- **Patient Satisfaction**: clients' opinion of service received from hospital laboratory services or staff is acknowledged as an outcome indicator of quality of service. In this study mean of summary satisfaction scores was taken as cut point to categorize respondents in to satisfied and not satisfied (patients are said to be satisfied when the result of their mean score is above or equal to the mean).
- **Accredited laboratory**: Is a laboratory accredited by Ethiopian National Accreditation Office (ENAO) to perform tests in accordance with the scope of accreditation in one or more medical testing field with the requirements of ISO/IEC, medical laboratory requirements for quality and competence.
- **Turnaround time:** is defined as the usual amount of time between the times a specimen is received within the laboratory and the result is available.
- **SLMTA:** Strengthening Laboratory Management towards Accreditation is a structured quality improvement program, teaches laboratory managers how to implement practical quality management systems in resource-limited settings using available resources. With a series of short courses and work-based improvement projects supported by site visits and mentoring, SLMTA is designed to achieve immediate, measurable improvement in laboratories.
- **Availability of requested laboratory tests**: is defined that presence of all requested laboratory tests which are requested by hospital clinician or service provider.

VI. Abstract

Introduction: Patient satisfaction is a major component of a quality management system, and a significant requirement in the ISO standards. It is also an important and useful quality improvement tool for clinical laboratory, health care organizations, and business in general. Most clinical laboratories are required to assess their patients satisfaction in order to maintain their accreditations.

Objectives: To assess patient satisfaction on selected laboratory services and determine associated factors among SLMTA program implementing Hospital laboratories in Addis Ababa.

Methods: Hospital based cross sectional study was conducted to assess patient satisfaction on laboratory services among SLMTA program implementing hospital laboratories at Zewditu memorial, Ras Desta Damtew memorial, Yekatit 12, Terunesh-Bejieng, Gandi memorial and Minilik II hospitals in Addis Ababa. A structured questionnaire was used to interview a total of 596 laboratory services user patients by trained data collectors. Data was entered and analyzed using SPSS version 20. Patient satisfaction was determined based on mean score cutoff.

Result: Out of the 596 patients, 317 (53%) were satisfied with the laboratory services given in the six hospitals under Addis Ababa City Administration. There was significant association between educational status of respondents, SLMTA program laboratory STAR grade and turnaround time with level of satisfaction of patients (P- value < 0.05). In Likert Scale, the overall mean rate of satisfaction of patients with laboratory services was 3.92 out of the 5 points. The mean rate of satisfaction for different aspects of laboratory services ranged from 3.18 to 4.34. The highest mean rate of satisfaction were given for location of laboratory and measures taken to assure privacy during specimen collection with mean rating of 4.34 and 4.32 respectively. Patient satisfaction was lowest with the adequacy of sitting arrangement in waiting area, Cleanness of Latrine and Time spent waiting to get the laboratory result.

Conclusion: The overall degree of patients' satisfaction with the clinical laboratory services was not satisfactory. Therefore, hospital administration and the laboratory department of each Hospitals should strive more to enhance patients' satisfaction by addressing the identified gaps.

Key Words: Assessment, Patient satisfaction, Hospital, clinical laboratory service, Ethiopia

1. Introduction

1.1 Background

Medical laboratory services are essential in the diagnosis and assessment of the health of patients. The services encompass arrangements for requisition, patient preparation, patient identification, collection of samples, transportation, storage, processing and examination of clinical samples, together with subsequent result validation, interpretation, reporting and advice. Medical laboratory services should therefore meet the needs of all patients, clinical personnel responsible for patient care and any other interested parties. The laboratory's aim is not only to provide accurate results, but to do so to the right patient within a meaningful timeframe as regards clinical management, using appropriate laboratory procedures and with a respect for ethics, confidentiality and the safety of the patient [1].

The strengthening laboratory management towards accreditation (SLMTA) program was created in response to the observed need for structured laboratory management training and quality improvement. It is a competency-based management training program which uses a series of short didactic courses and work-based applied learning projects with the goal of achieving immediate and measurable laboratory improvements. It also provides a practical approach to addressing everyday challenges using available resources, while empowering laboratory managers to implement practical quality management systems to ensure better patient care [2].

Ethiopia has implemented the WHO-AFRO Stepwise Laboratory Quality Improvement Process towards accreditation, SLIPTA, in 2009 in order to help laboratories with stepwise recognition of evolving fulfillment of the ISO 15189 standard instead of a grading system of pass-fail [3]. After the launching of WHO-AFRO Stepwise Laboratory Accreditation Process in Ethiopia 2009, from the laboratories selected for accreditation program Addis Ababa Health Research Laboratory was the only laboratory that scores four stars based on WHO AFRO assessment checklist (November 2011) up from a baseline of 0-star [4].

The assessment finding outcome of SLMTA on laboratory quality management system indicate that at the end of SLMTA implementation, 3 laboratories score 3 star, 6 laboratories were at 2 star, 11 were at 1 star level. The most important contributing factor for not scoring star in the final outcome of SLMTA were not conducting their customer satisfaction survey, poor staff motivation, and lack of regular equipment service maintenance. Mentorship, onsite and offsite

coaching and training activities had shown a great improvement on laboratory quality management system in most laboratories [5].

Customer satisfaction is a major component of a quality management system, and a significant focus in the ISO standards. Ultimately, the laboratory produces a product – the test result–for its customers. If the customer is not well served, the laboratory is not achieving its primary function. Satisfaction is the extent to which the clients feel their needs are fulfilled and their expectations are being met by the service provider. Furthermore, understanding the level of client satisfaction and identifying the factors hindering it are the most important baselines to improve the quality of service being delivered [6].

The findings of some previous studies have assessed patient satisfaction on clinical laboratories in Ethiopia [8, 9, 17, 19] revealed that cleanliness of facility, location of the laboratory, latrine accessibility and availability, latrine cleanness and comfort, maintenance of privacy and confidentiality, the cost of the laboratory service, the whole availability of requested tests, availability of place in blood drawing room to put personal things, and waiting time for specimen collection were reasons for patients satisfaction related with clinical laboratory services.

1.2 Statement of the problem

Medical laboratories play an essential role in determining clinical decisions and providing clinicians with information that assists in the prevention, diagnosis, treatment, and management of diseases. Presently, the laboratory infrastructure and test quality for all types of clinical laboratories remain in nascent stages. It is also an urgent need to strengthen laboratory systems and services [7].

Improving patient satisfaction has become a major goal in all healthcare settings [1]. SLMTA implementing clinical laboratories can play an important role in improving patient satisfaction and provide quality laboratory services through meeting patient satisfaction [6]. Moreover while evaluating accreditation systems, patient satisfaction remains a vital outcome to be assessed but the impact of SLMTA program of clinical laboratories on patient satisfaction is less explored [1,3, 6].

Previous studies done on patient satisfaction [8, 9, 17, 18, 19, 33] focuses on factors affecting patient satisfaction and level of patient satisfaction on clinical laboratory services but not related with SLMTA or accreditation program. Other studies done on SLMTA program were not related with patient satisfaction rather they focus on SLMTA program implementation and outcome [4, 5, 10].

Hence, this study will focus assessment of patient satisfaction level at SLMTA program implementing hospital laboratories in Addis Ababa. Therefore to my knowledge, this is one of the first studies to investigate the relationship between hospital level SLMTA program implementation and patient satisfaction at selected SLMTA program implementing government hospitals in Addis Ababa Ethiopia.

1.3 Significance of the study

This study will provide information of patient satisfaction on clinical laboratory services among SLMTA program implementing Public Hospitals Laboratories in Addis Ababa, Ethiopia. More over this study will try to identify factors affecting patient satisfaction and generate evidences of the current Ethiopian accreditation process addressing patient satisfaction and its relation with accreditation to determine quality of services. There are different studies in the country which focuses on patient satisfaction on general health care services and laboratories services but there are no published studies in the study area which focuses on patient satisfaction in relation with SLMTA program implementing laboratories.

The finding of this study, therefore, will help to identify how much patients are satisfied with the quality of laboratory service as well as factors affecting satisfaction for appropriate action. This will benefit patients and other clients by improving service to their level of satisfaction. National SLMTA program experts, Laboratory managers and other policy makers could also benefit from this study as the findings will contribute to identify patient satisfaction level and factors for focused intervention.

Any laboratory should have a written policy focusing on customer's satisfaction, and should periodically measure and evaluate their customer's satisfaction [6, 11, 12]. This study may assist in the evaluation of SLMTA program implementation at laboratories from patients' point of view. It also facilitates the identification of problem areas and generates ideas for resolving these problems. In clinical laboratory monitoring, patients satisfaction is an important and useful tools required for quality improvement as well as to maintain their accreditation

2. Literature Review

2.1. Patient satisfaction towards Clinical Laboratory Services

Patient satisfaction is the patient's perception of care received compared with the care expected [13]. Evaluating to what extent patients are satisfied with health services is clinically relevant, as satisfied patients are more likely to comply with treatment. On the other hand, clients who are not satisfied with a service may have worse outcomes than others because they miss more appointments, live against advice or fail to follow through treatment plans [14].

Patient satisfaction is a major component of a quality management system, and a significant focus in the ISO standards [6]. Hospital laboratories are essential component and one of the most important departments at any healthcare services where medical tests and investigations done in order to generate reliable and accurate information regarding patient's health. Patient who are coming to laboratory services and their perception of the provided services is considered an important measure of quality assurance [11].

Hospital based study at Lebanese patients revealed that the majority of patients (76.34%) were dissatisfied with the quality of services delivered in the six hospitals they studied. Results did not show significant associations between patient satisfaction, the hospital's geographic location, and any of the patient's socio-demographic characteristics. Although not statistically significant, the study results supported the trend identified in the literature, namely that educational level and monthly income are inversely proportional to patient satisfaction, whereas age is directly proportional to patient satisfaction [16].

Patients Satisfaction survey conducted on Clinical Laboratory Services in Nekemte referral Hospital, Oromia region, Ethiopia shows among the 422 patients, 255 (60.4%) were satisfied, 75 (17.8%) were neutral and 92(21.8%) were dissatisfied with the laboratory services. In Likert Scale, the overall mean rate of satisfaction of patients with laboratory services in Nekemte referral hospital was 3.65 out of the 5 points. The lowest mean rating of satisfaction were given for Cleanness of latrine and location of the laboratory in the hospital with mean rating of 2.15 and 2.17, respectively [9].

A study which involved 210 patients at Tikur Anbesa Specialized Hospital, Addis Ababa, Ethiopia on Patient satisfaction with clinical laboratory services resulted 59.7% of patients satisfied on the hospital clinical laboratory services [17]. While another cross-sectional hospital based study on Perceived patient satisfaction with in-patient services at Jimma University Specialized Hospital, Southwest Ethiopia revealed that the satisfaction level was 61.9% [18].

Apart from the previous studies Minadye T & Taye B has found that level of patient satisfaction on a Hospital based descriptive cross sectional study of ART patient's with laboratory services were 85.5% satisfied at antiretroviral therapy clinics in public hospitals, Addis Ababa, Ethiopia [8]. Whereas Teklemariam Z. *et al* who studied on clients and clinician satisfaction with laboratory services at selected government hospitals was 87.6% were satisfied from 429 patients and 54 service providers at eastern Ethiopia [19]. Moreover a similar study on HIV/AIDS patients' satisfaction on ART laboratory service in selected governmental hospitals, sidamma zone, southern Ethiopia by Belay M. *et al* showed that the overall HIV/AIDS patient satisfaction on ART laboratory service was 85.8% and 95.7% in Hawassa University Referral Hospital and Yirg-Alem Hospital respectively [20].

2.2. Status of SLMTA Program Implementation

Laboratory accreditation is used widely in developed countries to encourage and document improvements in the quality and reliability of test results. However, for laboratories in developing countries accreditation is a daunting challenge that only a handful of public laboratories in Africa have surmounted [7].

The SLMTA program is a large-scale effort to improve the quality of laboratories in resource-limited countries. Since its introduction in 2009, SLMTA has been implemented in 47 countries worldwide, including 23 countries in Africa, 12 in the Caribbean Region, 10 in Central and South America, and two in Southeast Asia [21].

As a result, the WHO AFRO has suggested that member countries improve the performance standards of their laboratories by implementing LQMS, establishing intermediate quality level goals and working toward accreditation in a stepwise manner [12].

SLMTA is a large-scale effort aimed at improving the quality of laboratory services and patient care in resource limited settings by developing competent laboratory managers. SLMTA provides an innovative training curriculum on implementing practical Quality Management Systems (QMS) using existing resources with built-in accountability and evaluation that focuses on result-oriented outcome measures [2]. Launched in 2009 in Kigali, Rwanda, this program seeks to engage laboratories in continuous quality improvement and to accelerate their preparations toward accreditation to international standards [11, 12].

A study which explores the association of the outcome of SLMTA with different variables showed that, there are a statically significant association between the outcomes of SLMTA with regular staff meeting, getting adequate training on how to implement SLMTA, coaching and mentoring, assessment of customer satisfaction, availability of enough equipment, servicing of equipment routinely, and workload. Based on the finding of this study none of the socio demographic variables showed statically significant association with the outcome of SLMTA. Performing customer satisfaction survey, timely and adequate mentorship, enough and routinely serviced equipment were statically significantly associated with the outcome of star level of SLMTA at P-value less than 0.05. Concerning to customer satisfaction survey, those laboratory which did not perform their customer satisfaction survey were 2.261 times more likely to get less final result than laboratories which are conducting their customer satisfaction survey (AOR= 2.261, 95% CI= 1.851-6.007) [5].

Consumer-oriented healthcare need increases in relation with seeking affordable quality-assured healthcare. In order to meet this demand, both SLMTA and SLIPTA will need to be rolled out in developing countries so as to stimulate healthcare service providers to focus on a systematic work flow for quality services rendered to patients, resulting in increased efficiency and quality whilst lowering waste and cost and improving safety. Critically, a patient-centered continuous quality improvement approach will become indispensable [22].

Yao *et al* reported data from SLMTA implementing 617 laboratories in 47 countries in Africa, the Caribbean, Latin America and Southeast Asia. Country-level data were collected and compiled globally. Performance was measured at baseline and after (exit) SLMTA implementation using an audit checklist which results in a percentage score and a rating of zero to five stars. Eighteen per cent of the 617 laboratories were at the national level, 27% at regional

or provincial levels, 38% at district or primary levels, 10% belonged to non-governmental, faith-based or private organizations, 5% were military laboratories and 2% were blood banks. Of these laboratories, 302 (49%) completed the SLMTA program and conducted an exit audit, whilst the remaining 315 (51%) were still going through the program at the time of this analysis. At the baseline audit, the mean score for all 617 SLMTA-enrolled laboratories was 39% (median 37%) and 84% received zero stars (i.e., score < 55%) on the SLIPTA five-star scale. For the 302 laboratories that had completed the program and conducted an exit audit, mean scores increased from 39% at baseline to 64% at exit ($p < 0.001$). Whilst 85% had received zero stars at baseline, only 30% remained at zero stars at exit [21].

Another Ethiopian study shows improvements, ranging from < 1 to 51 percentage points, in 42 laboratories, whilst decreases were recorded in two. The average scores at the baseline and exit audits were 40% and 58% for cohort I ($p < 0.01$); and 42% and 53% for cohort II ($p < 0.01$), respectively. The p-value for difference between cohorts was 0.07. At the exit audit, 61% of the first and 48% of the second cohort laboratories achieved an increase in star rating. Poor awareness, lack of harmonization with other facility activities and the absence of a quality manual were challenges identified. The study concluded that improvements resulting from SLMTA implementation are encouraging. Continuous advocacy at all levels of the health system is needed to ensure involvement of stakeholders and integration with other improvement initiatives and routine activities [23].

2.3. Factors Affecting Patient Satisfaction

A Hospital based study at Finland in clinical laboratory services found out that factors affecting customer satisfaction at hospital laboratories were missing test results, Laboratory information system, Turnaround times, and instructions from the laboratory. The highest dissatisfaction rates were recorded for computerized test requesting and reporting, turnaround times of tests, and the schedule of phlebotomy rounds were also among the factors dissatisfied laboratory customers [24].

Patient satisfaction is one of the vital aspects to consider when evaluating the impact of accreditation. Accreditation is an effective tool that can be used by hospitals to introduce continuous quality improvement programs and to create new leadership for continuous quality improvement initiatives. Ideally, accreditation ensures that standards have been achieved while

fostering continuous quality improvement. One means by which this is achieved is by healthcare providers submitting to periodical accreditation processes in order to test the quality of care provided to patients. Thus, accreditation not only fosters but necessitates continuous improvement [25].

Client satisfaction reflects provider's ability to successfully deliver care that meets clients' expectations and needs [26, 27]. A number of factors have been shown to influence clients' satisfaction with health care services including clients' socio-demographic characters, physical health status, clients' personal understanding and expectations from various health care services. The general physical appearance of the hospital as well as the general environment of the premises also influences the overall Satisfaction of the client [28, 29].

Customer satisfaction with clinical laboratory services is one of the most important quality indicators in laboratory medicine. Measuring and improving customer satisfaction with clinical laboratory services are essential aspects of laboratory medicine management [26].

A Tanzanian study at public and private laboratories on patient satisfaction showed, the percentage of dissatisfaction with both public and private laboratory services, ranged from 4.3% to 34.8%, with most of variables being more than 15%. Patients who sought private laboratory services were less dissatisfied with the cleanness (3/72, 4.2%) and the privacy (10/72, 13.9%) than those sought public laboratory service for the same services of cleanness (41/222, 18.5%) and privacy (61/222, 27.5%), and proportional differences were statistically significant ($X2 = 8.7$, $p = 0.003$ and $X2 = 5.5$, $p = 0.01$, respectively). Patients with higher education were more likely to be dissatisfied with privacy (OR= 1.8, 95% CI: 1.1–3.1) and waiting time (OR = 2.5, 95% CI: 1.5 – 4.2) in both private and public facilities. Patients with secondary education were more likely to be dissatisfied with the waiting time (OR = 5.2; 95%CI: 2.2–12.2) and result notification (OR = 5.1 95%CI 2.2–12.2) than those with lower education [30].

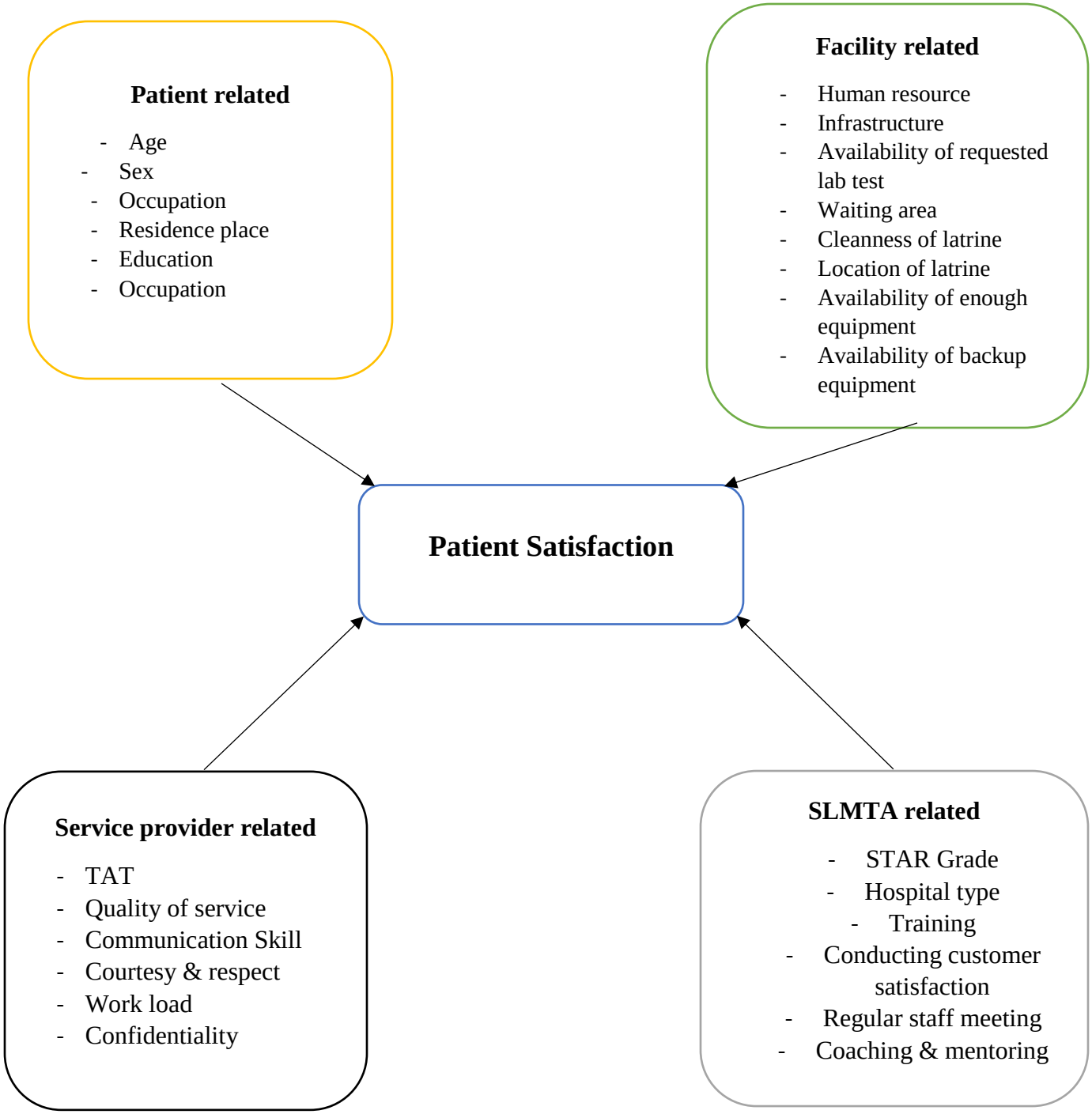
A study on HIV/AIDS patients' satisfaction on ART laboratory service at Southern Ethiopia shows the rate of satisfaction of patients was statistically different among the study hospitals (p-value = 0.00). The Likert scale results of patient satisfaction of the laboratory services revealed that the mean rating values ranged from 3.07 (±0.96) to 4.25 (±0.56) out of a possible 5. While the patients were satisfied with the quality of laboratory in general and cleanliness and attractiveness of the laboratory room, they were dissatisfied with the location and cleanliness of

the latrines used for specimen collection and information provided to patients during specimen collection [20].

An antiretroviral therapy clinics study on patients satisfaction with laboratory services at Addis Ababa hospitals shows overall satisfaction of clients toward ART monitoring laboratory services has statistically significant association with waiting time to get blood drawing service, availability of place in blood drawing room to put client personal things, provision of information regarding bruise due to blood drawing, availability of ordered laboratory tests ($p<0.05$). Variables that have statistically significance associations were waiting time to get blood drawing service, availability of ordered laboratory tests and waiting time to get laboratory result with ($p<0.05$). Clients who waited less than 30 minutes to get blood drawing services were 7.5 times more likely to be satisfied than those who waited more than 30 minutes (AOR = 7.59: CI: 3.92–14.70). Moreover those clients who waited less than two hours to get laboratory results were five times more likely to be satisfied than those who waited more than two hours (AOR = 5.52; CI: 1.58–19.23) and clients who got all requested laboratory tests were 2.3 times likely to be satisfied than those who did not got the information (AOR = 2.36; 95CI: 1.26–4.44) [8].

As reviewed above, the studies carried out in Ethiopia did not address patients' satisfaction with regards to SLMTA implementation hence this study tries to address this gap.

Figure 1 Conceptual frame work showing factors associated with patient satisfaction on laboratory clinical services



3 Objectives

3.1. General Objective

The overall objective of this study is to assess patient satisfaction on selected clinical laboratory services and determine associated factors among SLMTA Program implementing hospital laboratories under Addis Ababa city administration.

3.2. Specific objectives

- ✓ To assess patient satisfaction level on clinical laboratories service requested for clinical chemistry, hematology, parasitology and urine analysis tests among SLMTA program implementing Hospital laboratories
- ✓ To assess factors associated with patient's satisfaction level among SLMTA implementing Hospital laboratories

Hypothesis

The level of patient satisfaction and their associated factors are not different from those reported by other studies in Ethiopia regardless of SLMTA implementation.

4 Materials and Methods

4.1. Study area

The study was conducted in Addis Ababa which is the capital city of Ethiopia. Located at the heart of the country with the area of about 540 square kilo meters, it is the biggest city in the country having 10 sub cities and 116 woredas, with a total population size of 3,273,001 with annual growth rate of 2.1[31].

The city has 11 public hospitals and 75 health centers with a health facility to population proportion of 1:283,818 and 1:50,355 respectively. Moreover it has 79% primary health coverage and 100% geographical health coverage. Of those 11 public hospitals, 6 hospitals are under Addis Ababa Health Bureau, 4 are referral Hospitals under the federal Ministry of Health and 1 referral and teaching hospital is under Addis Ababa University [32]. There are also two federal uniformed hospitals in the city.

This study focused on public hospital laboratories which have been implementing SLMTA program. Among the 6 hospitals found under Addis Ababa city administration health bureau all of the hospitals were included on the study purposively, because all are implementing SLMTA program. The hospitals which have four star grade were Zewditu memorial hospital, Ras Desta Damtew memorial hospital and Yekatit 12 hospital medical college. Likewise Tirunesh-Bejing hospital was with a 3 star grade and the rest hospital laboratories, Gandi memorial and Minilik II, were at 2 star grade.

4.2. Study design and Study period

A facility based cross sectional study design was used to assess patient satisfaction level on clinical laboratory services among SLMTA program implementing hospital laboratories. The study period was from April to June, 2017.

4.3. Population

4.1 Source population

Patients visiting laboratories of Zewditu memorial, Yekatit 12 hospital medical college, Ras Desta Damtew memorial, Terunesh-Bejing, Gandi memorial and Minlik II Hospitals in Addis Ababa were the source population.

4.2. Study population

Patients who visited clinical laboratory of Zewditu memorial, Yekatit 12 hospital medical college, Ras Desta memorial, Terunesh-Bejing, Gandi memorial and Minlik II hospital laboratories who fulfill inclusion criteria and willing to participate were the study population.

4.3. Inclusion and exclusion criteria

4.4.1 Inclusion criteria

Outpatients who were greater or equal to 18 years old and requested for clinical chemistry, hematology, parasitology and urine analysis tests were included in this study.

4.4.2 Exclusion criteria

Those who were critically ill and/or had psychiatry problem were excluded from the study

4.5. Study variables

4.5.1 Dependent variables

Patients' satisfaction was dependent variable of this study.

4.5.2 Independent Variables

In this study, socio-demographic characteristics (sex, age, marital status, level of education, occupation, estimated monthly income and others), convenience of service hours, hospital SLMTA star grade, waiting time to get services (Turnaround time), availability of requested lab tests, type of visit and type of hospital were the independent variables.

4.6 Measurement and data collection

4.6.1 Sample size determination

Sample size was calculated for each specific objectives to get the maximum using single population for objective one and using open epi calculation for objective two. The largest sample size was calculated using a formula for estimating single population proportion for cross-sectional studies. Taking the assumptions, proportion of customers' satisfaction 60.4% [9] at 95% confidence level and with margin of error of 4.1 %, and 10% non-respondent rate, the calculated sample size was 602. This also helped to have a better sample size of study participants to be included in the study and increase accuracy. The total sample size was distributed to the units of the hospital laboratories based on the average patient flow per month.

The following formula was used for calculating the sample size:

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

Where:

n = the desired sample size

P = Assuming patient satisfaction on clinical laboratories at Nekemte = 60.4%

Z α**/2** = Critical value at 95% confidence level of certainty (1.96)

d = Assuming the margin of error between the sample and the population = 4.1%

The calculated result is 547 and the total sample size required for the study with a non-response rate of 10% was found to be **602**.

4.6.2. Sampling method

Purposive sampling technique was used in order to select the 6 SLMTA program implementing hospitals under Addis Ababa city Administration Health Bureau. Sample size was allocated proportionally for each hospital according to patient load of hospital's laboratories. The average patient load per month from the last quarter calculated was 8000, 3200, 2800, 6500, 4500, 3000 for Zewditu memorial, Minlik II , Gandi memorial, Ras Desta Damtew, Yekatit 12 and Terunesh- Beijing hospitals, respectively. Based on previous quarter client flow data, number of clients were allocated to the institutions proportionally and stratified to laboratory services. The study participants were selected from source population using systemic random sampling. Using the registry book for laboratory services from the clients in the waiting room, every k^{th} client was interviewed.

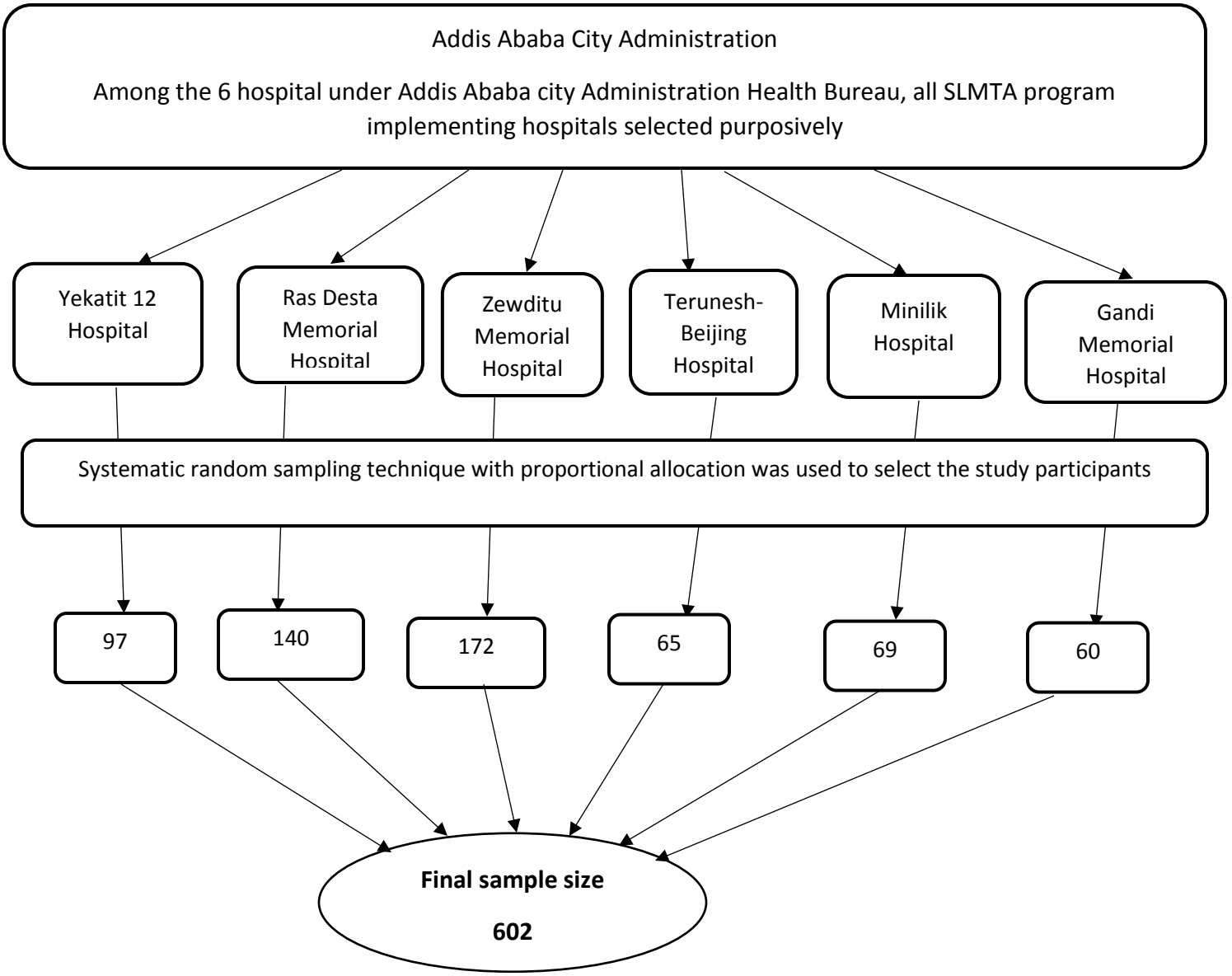


Figure 2: Schematic presentation of sampling technique for assessment of patient satisfaction towards clinical laboratory services under Addis Ababa city administration hospital laboratories, 2017

4.6.3. Data collection procedure

Data was collected by using structured, pre-tested and interviewer-administered questionnaire initially prepared in English and then translated to local language Amharic. The Amharic versions of the questionnaire was used for data collection. Data was collected by 6 trained nurses. Besides their socio-demographic characteristics, study participants were asked to rate

each aspect of the laboratory service on a five-point Likert scales (very dissatisfied, dissatisfied, Neutral, Satisfied, and very satisfied).

The questionnaire contains of satisfaction indicators which are related to socio-demographic characteristics of the patients and different dimensions of laboratory services such as waiting time (Turnaround time), availability of requested laboratory tests, convenience of service hours, type of laboratory visit, time taken to arrive hospital, type of hospital, privacy, respect, courtesy and confidentiality.

4.7. Data Quality assurance

Pre-tested structured questionnaire was used for data collection by trained data collectors. The questionnaire was originally prepared in English and its final version was translated into Amharic, and then back translated to English to check its consistency. Six individuals that were trained for one day on data collection were engaged on data collection. The data collectors interviewed the study participants interchangeably in different hospital at different times during the study period.

Questionnaires were pre-tested at hospital laboratories of 2 health facilities which are not included in the main study namely ALERT and St. Paul's Millennium Medical College Hospitals. Based on the pretest, questions were revised, edited, and those found to be unclear or confusing were removed. The pre-test of the questionnaire was carried out on 5% of total sample size and each data collector had an opportunity to be acquainted with the interview technique.

The principal investigator collected the completed questionnaire every day and checks each for inconsistencies and omissions. Any format with a defect was rejected from the study. The principal investigator and supervisors re-interview three percent of the clients on each health facility to check the validity of the data; moreover, double data entry was done to check for data entry errors and be correct as needed. The principal investigator was responsible for co-ordination and supervision of the overall quantitative data collection process. Data cleaning and editing was taking place by using SPSS 20 statistical package. Two supervisors were trained for one day to supervise the data collectors. Phone calls, direct visits to health facility as well as weekend discussion among data collectors, supervisors and the researcher was used as a way for supervision during the study. During these supervisory activities quality and completeness of

gathered information by the data collectors was checked. Timely correction was made which helped in improving the quality, consistency and completeness of data of subsequent interviews.

4.8. Data analysis and interpretation

Quantitative data was entered, cleaned and analyzed using SPSS 20 statistical packages. A 5 point Likert scale rating of very dissatisfied (1-point), dissatisfied (2-points), neutral (3-points), satisfied (4 points) and very satisfied (5 points) were used. The mean Likert scale score or weighted average was used to categorize the satisfaction level as satisfied when the score is greater or equal to the mean score while the value below the mean score was taken as dissatisfied. Frequencies, proportions and measures of dispersions were estimated to describe variables. The degree of association between dependent and independent variables was also measured using odds ratio with 95% confidence interval. Bivariate analysis was engaged to explain the dependent variable based on the independent variables and multivariate logistic regression was used to control confounder.

4.9. Ethical considerations

Ethical clearance was obtained from Addis Ababa University College of Health Sciences, School of Allied Health Science, Department of Medical Laboratory Science research and ethics committee, Letters of cooperation was written to Addis Ababa health bureau which in wrote support letter to each hospitals under its administration. Permissions was obtained from each hospital to conduct the study. Verbal and written consent was also obtained from the study participants before administering the questionnaire.

4.10. Dissemination of the result

After public defense at the Department of Medical Laboratory Sciences, the findings of the research will be submitted to Addis Ababa University, Addis Ababa City Administration Health Bureau and respective hospitals. The result will be presented on different seminars, meetings and workshops. Manuscript will be submitted for publication on local or international peer reviewed journal.

5 Results

5.1. Socio-demographic characteristics of study population

A total of 596 patients were involved in this study with the response rate of 98 %. Of 596 respondents, one hundred and sixty three (27.3%) were from two star Hospital laboratories, sixty (10.1%) were from three star Hospital laboratories while three hundred and seventy three (62.6%) were from four star hospital laboratories. Concerning to residence location, majority (89.8%) of study participant were from Addis Ababa city, 31(5.2%) were out of Addis Ababa city with in 50 km radius and the rest 33 (5.5%) were from out of Addis Ababa city greater than 50 km.

The mean age of study participants was 37 years (SD = ±14.7 years) with median average monthly income of 1000 Ethiopian birr from a minimum of 0 birr (dependent on family income) to maximum 15000 birr. Besides, 180 (30.2%) of the study participant were in the age group between 18 and 27. Majority (64.4%) of study participants were females and out of 596 participants 422 (70.8%) of the participants were married.

Regarding occupational status, quarter (25.7%) of study participants were working in private organizations. Out of 596 study participants, 281 (47.1%) and 136 (22.8%) had 7-12 and college and above level of education, respectively (see Table 1).

Table 1 Socio-Demographic characteristics of Hospital laboratory service users at Addis Ababa City Administration, Ethiopia, 2017 (n=596)

Variable	Frequency (n=596)	Percent
Laboratory Star Grade		
Two Star	163	27.3
Three Star	60	10.1
Four Star	373	62.6
Age of respondents		
18-27	180	30.2
28-37	179	30.0
38-47	86	14.4
48-57	72	12.1
≥58	79	13.3

Mean age ± SD(yr)	37(yr) ± 14.7	
Sex of respondents		
Male	212	35.6
Female	384	64.4
Marital Status		
Single	119	20.0
Married	423	71.0
Divorced	15	2.5
Widowed	39	6.5
Occupation		
Student	40	6.7
Housewife	123	20.6
Unemployed	83	13.9
Merchant	83	13.9
Government	86	14.4
Private	153	25.7
Retired	28	4.7
Average monthly income		
<2000	412	69.1
2001-4000	110	18.5
4001-6000	38	6.4
6001-8000	17	2.9
>8000	19	3.2
Mean + SD(birr)	1582	
Residential place		
Addis Ababa city	535	89.8
Out of A.A (≤50km)	29	4.9
Out of A.A (>50km)	32	5.4
Educational status of respondents		
Can't read	82	13.8
Only read & write	15	2.5
Primary	82	13.8
Secondary	281	47.1
College & above	136	22.8

5.2. General services parameters and pre-laboratory services satisfaction level

When the overall satisfaction of pre laboratory services received was assessed, 74.3% of the respondents were satisfied with the services they got while 23.2% of the respondents were not satisfied with the overall services preceding the laboratory services.

Respondents were asked to indicate the type of transport used to come to hospital and 92.3% of the respondents use taxi and/ public transport. Besides 47.8% of the respondents need half to an hour time to come hospital from their residential place. Majority of the study participants 68.8% of them were paying patients while one third (31.2%) of the respondents were free users of the laboratory. Regarding laboratory request, 96.1% (573) of the total respondents were from different departments of the same hospital whereas 3.9% of them were referred from other facilities.

Nearly three fourth (73.2%) of the total respondents have got all the requested laboratory tests that the clinicians ordered. More than half of (56.9%) of the patients are first time service users at the hospital laboratory. When the respondents were asked if they come again to get services at the hospital laboratory, 87.9% of them were interested to come again. (Table 2).

Among the reason to come again the same hospital laboratory to get service were convenience of working hour(81.5%), get service early(23.5%), good quality of service (22.7%), availability of many service (7.2%), cheap service fee(20.8%), immunization & follow up (41.4%). In contrary to the previous, the reasons for not coming again to the same hospital to get laboratory services were inconvenience working hour (9.4%), long waiting time (5.9%), poor quality of services (2%), in availability of services (3.4%).

Table 2 General services parameters and pre-laboratory service satisfaction level of Hospital laboratory service users at Addis Ababa City Administration, Ethiopia 2017 (n=596)

Variable	Frequency (n=596)	Percent
Service Payment		
Paying	410	68.8
Free	186	31.2
Type of laboratory request		
Referred	23	3.9
Not referred	573	96.1
Availability of requested laboratory tests		
Yes	436	73.2
No	160	26.8
Type of laboratory visit		
First visit	339	56.9
Repeat	257	43.1
Time taken to arrive hospital		
Less than 1/2 hour	133	22.3
1/2 to 1 hour	285	47.8
1 to 2 hours	130	21.8
more than 2 hours	29	4.9
Don't know	19	3.2
Type of transport used		
On foot	26	4.4
Taxi/public	550	92.3
Personal vehicle	17	2.9
Motor or bi-cycle	3	.5
Will you come again to the hospital laboratory		
No	72	12.1
Yes	523	87.9
Overall Satisfaction of pre laboratory services received		
Dissatisfied	138	23.2
Neutral	15	2.5
Satisfied	443	74.3

Table 3 summarizes laboratory services parameters related to satisfaction level of Hospital laboratory service users. Concerning convenience of working hours of the laboratory services 55.4% of the respondents said convenient to get the services. Some of the respondents (4.4%) have got two or more needle stick attempted during blood draw. Among those 2.9% of them develop bruise after phlebotomy procedure and almost all of them did not get information how to lessen the size of bruise. Regarding place to put personal materials and cloths in blood drawing room, 87.6% of the respondents replied the hospital laboratories lack spaces or places to put personal item during blood drawing.

Table 3 Laboratory services parameters related to satisfaction level of Hospital laboratory service users under Addis Ababa City Administration, Ethiopia, 2017 (n=596)

Variable	Frequency (n=596)	Percent
Turnaround time		
< 30 minute	17	2.9
30 min-60 minute	372	62.4
1 hour-2 hours	155	26.0
>2 hours	52	8.7
Convenience of working hour		
Yes	330	55.4
No	66	11.1
I don't know	200	33.5
Needle stick attempted to draw blood (N-521)		
one vein puncture	498	95.6
Two vein puncture	20	3.8
Three vein puncture	1	0.2
four or more vein punctures	2	0.4
Develop bruise after phlebotomy (N=521)		
Yes	15	2.9
No	506	97.1
Place in blood drawing room to put personal thing (n=521)		
Yes	520	99.8
No	1	0.2

5.3 Patients' satisfaction towards clinical laboratory services

The overall patient satisfaction on laboratory service was determined by taking mean score and above for fifteen variables that were utilized to reflect satisfaction (displayed in Table 4). Accordingly, of 596 respondents, just over half (53%) of them were satisfied and the rest were dissatisfied with general clinical laboratory service provided at Addis Ababa city administration Hospitals (Figure 2).

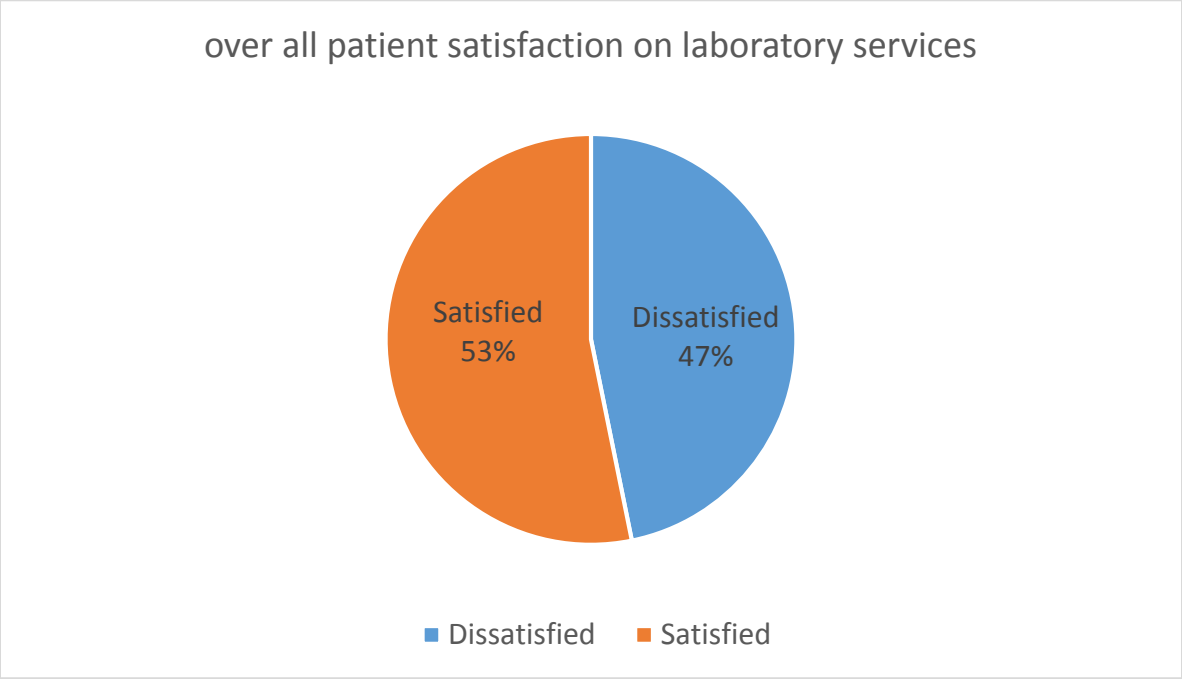


Figure 3 Overall patient satisfaction towards clinical laboratory services at Addis Ababa Hospital laboratories under Addis Ababa City Administration from April-June, 2017

Patient satisfaction disaggregation by study hospitals showed that 70% of patients who were getting clinical laboratory services at "C hospital" were satisfied and only 30% of them were dissatisfied. "D and E Hospitals" patients were 68% & 64% satisfied with the clinical laboratory services given by the hospitals respectively. Whereas "Hospital A" patients were equally satisfied and dissatisfied with the services given by the hospitals laboratory. On the other hand three-quarter (75%) of "F hospital" and 73% of "B hospital' patients were dissatisfied by clinical laboratory services provided at the hospital.

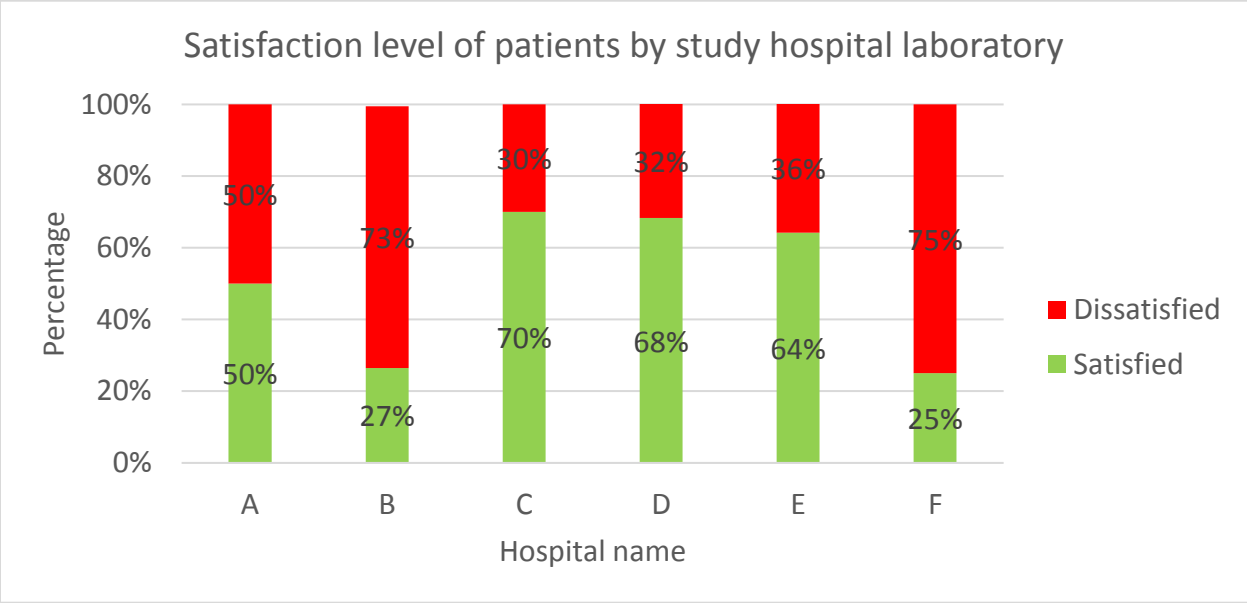


Figure 4 Patient satisfaction towards clinical laboratory services by each study hospital at Addis Ababa Hospital laboratories under Addis Ababa City Administration from April-June, 2017

In Likert Scale, the overall mean rate of satisfaction of patients by laboratory services in Addis Ababa city administration hospitals was 3.93 out of a possible 5. The mean rate of satisfaction for different aspects of laboratory services ranged from 3.18 to 4.34. The lowest mean rating of satisfaction were given for cleanness of latrine and adequacy of sitting arrangement in waiting area with mean rating of 3.18 and 3.31, respectively. Higher mean rating of satisfaction was obtained for satisfaction on location of the laboratory (4.34) and satisfaction on measures taken to assure privacy during specimen collection (4.32) in the Hospital as indicated in Table

Table 4 Rate of patients' satisfaction determined by mean (±SD) score of responses to different satisfaction questions by patients from six hospital laboratories under Addis Ababa Health Bureau , Addis Ababa, Ethiopia, 2017 (n = 596)

Variable	Very satisfied		Satisfied		Neutral		Dissatisfied		Very dissatisfied		Mean±SD
	#	%	#	%	#	%	#	%	#	%	
Time spent waiting to get the laboratory result	70	11.7	330	55.4	17	2.9	161	27	18	3	3.46±1.10
Queue process to get service	151	25.3	379	63.6	5	0.8	57	9.6	4	0.7	4.03±0.84
Courtesy and respect of the laboratory personnel	211	35.4	307	51.5	22	3.7	47	7.9	9	1.5	4.11±0.91
Measures taken to assure privacy during specimen collection	214	35.9	368	61.7	9	1.5	2	0.3	3	0.5	4.32±0.57
Location of the laboratory	291	48.8	263	44.1	3	0.5	34	5.7	5	0.8	4.34±0.82
Availability of requested laboratory testes	207	34.7	289	48.5	11	1.8	87	14.6	2	0.3	4.03±0.99
Cleanness of waiting area of the laboratory	120	20.1	393	65.9	9	1.5	73	12.2	1	0.2	3.94±0.85
Adequacy of sitting arrangement in waiting area	57	9.6	300	50.3	11	1.8	225	37.8	3	0.5	3.31±1.09
Cleanliness of the blood drawing area	165	27.7	389	65.3	22	3.7	19	3.2	1	0.2	4.17±0.65
Completeness of Information given before &during specimen collection	170	28.5	342	57.4	31	5.2	51	8.6	2	0.3	4.05±0.84
Measures taken to assure confidentially about your test result	106	17.8	481	80.7	5	0.8	3	0.5	1	0.2	4.15±0.44
Communication skill of laboratory personnel	159	26.7	352	59.1	21	3.5	60	10.1	4	0.7	4.01±0.88
Service fee (cost) in this hospital laboratory	196	32.9	247	41.4	130	21.8	16	2.7	7	1.2	4.02±0.87
Location of Latrine	128	21.5	316	53	6	1	84	14.1	3	0.5	3.81±0.95
Cleanness of Latrine	67	11.2	225	37.8	90	15.1	17	29.2	40	6.7	3.18±1.17

5.4 Factors affecting the level of patients' satisfaction towards clinical laboratory services

Several socio demographic and general services related factors such as:-age of respondent, sex, educational status of respondent, occupation, marital status, laboratory SLIPTA program grade, patient laboratory test request type, visit type, turnaround time of tests, pre-laboratory services, convenience of opening hour were tested using binary logistic regression for the presence of association with laboratory service satisfaction.

Variables like laboratory STAR Grade, Sex of respondent, Educational status of respondents Occupation, Laboratory request, Complete service provided that the doctor requested, Type of laboratory visit, Turn-around time, Convenience of opening hour, Pre-laboratory service satisfaction were found to be significantly associated with patient satisfaction on clinical laboratory services. (Table-5)

Table 5 Chi-square analysis for predictors of patients' satisfaction towards clinical laboratory service in six hospital laboratories under Addis Ababa Health bureau, Ethiopia, 2017 (n = 596)

Variable	Dissatisfied	Satisfied	Chi-square (P value)
STAR Grade			8.5 (0.014)*
Star II	84(51.5%)	79(48.5%)	
Star III	18(30%)	42(70%)	
Star IV	177(47.5%)	196(52.5%)	
Marital Status			3.3 (0.504)
Single	60(50.4%)	59(49.6%)	
Married	195(46.2%)	227(53.8%)	
Divorced	5(33.3%)	10(66.7%)	
Widowed	18(46.2%)	21(53.8%)	
Sex of respondent			4.7 (0.029)*
Male	112(52.8%)	100 (47.2%)	
Female	167(43.7%)	217(56.3%)	
Educational status of respondents			21.6 (0.000)*
Can't read	23(28%)	59(72%)	
Only read & write	7(46.7%)	8(53.3%)	
Primary	30(36.6%)	52(63.4%)	
Secondary	144(51.2%)	137(48.8%)	
College & above	75(55.1%)	61(44.9%)	
Occupation			21.7 (0.001)*
Student	22(55%)	18(45%)	
house wife	52(42.3%)	71(57.7%)	

Un employed	26(31.3%)	57(68.7%	
Merchant	37(44.6%)	46(55.4%)	
Government employee	52(60.5%)	34(39.5%)	
Private	81(52.9%)	72(47.1)	
Retired	9(32.1%)	19(67.9%)	
Laboratory request			9.1 (0.03)*
Referred	4(17.4%)	19(82.6%)	
Not referred	275(48%)	298(52%)	
Availability of requested laboratory tests			5.8 (0.015)*
Yes	88(55%)	72(45%)	
No	191(43.8%)	245(56.2%)	
Type of laboratory visit			22.7 (0.000)*
First visit	130(38.3%)	209(61.7%)	
Repeat	149(58%)	108(42%)	
Turn-around time			144.9 (0.000)*
< 30 minute	7(41.2%)	10(58.8)	
30 min-60 minute	110(29.6%)	262(70.4)	
1 hour-2 hour	113(72.9%)	42(27.1%)	
>2 hour	49(94.2%)	3(5.8%)	
Convenience of working hour			16.8 (0.000)*
Yes	45(68.2%)	21(31.8%)	
No	136(41.2%)	194(58.8%)	
Pre-laboratory service satisfaction			16.4 (0.000)*
Dissatisfied	83(60.1%)	55(39.9%)	
Neutral	10(66.7%)	5(33.3%)	
Satisfied	186(42%)	257(58%)	

N.B -P-value <0.05 and * indicates those with significant association

These factors were further analyzed using multiple logistic regression using enter stepwise elimination method. The results of multivariable logistic regression analysis showed that patient satisfaction on clinical laboratory services was 3.1 times more likely at star grade 3 laboratories as compared with star 2 laboratories (AOR= 3.1, 95% CI :1.4, 6.9). Whereas, patients who were using star 4 hospital laboratories were 1.9 times more likely to be satisfied as compared with those who are using star 2 laboratories (AOR=1.9, 95% CI: 1.2, 3.2).

Moreover, the finding of this study revealed, statistical significant associations between the turnaround time to get lab results ($p<0.05$). Patients receiving laboratory service less than 30 minute were 25.9 times (95% CI AOR: 5.2, 129) to be more satisfied with laboratory services compared to those who underwent for more than 2 hours. Likewise those patients receiving laboratory services 30 minute to 60 minute 37.8 times (95% CI AOR: 10.7, 133.2) to be more satisfied with laboratory services compared to those who underwent for more than 2 hours.

On the other hand, patients attaining secondary school compared to those who can't read and write, not referred from other health facility, who visit the laboratory more than once, were less likely to be satisfied with the laboratory service. Whereas sex of patients, occupation, availability of all requested tests in the laboratory, pre-laboratory service satisfaction had no significant association with patients' satisfaction towards clinical laboratory service (See Table 6)

Table 6 Predictors of satisfaction towards clinical laboratory service in six hospital laboratories under Addis Ababa Health bureau, Ethiopia, 2017 (n = 596)

Variable	Satisfaction Status		Crude OR (95% CI)	Adjusted OR (95% CI)
	Satisfied	Dissatisfied		
STAR Grade				
Two star	84	79	1.00	1.00
Three Star	18	42	2.48 (1.3, 4.6)	**3.1 (1.4, 6.9) ***
Four star	177	196	1.17 (0.8, 1.7)	**1.9 (1.2, 3.2) ***
Sex of respondents				
Male	112	100	1.00	1.00
Female	167	217	1.4 (1.03, 2.0)	1.4 (0.9, 2.4)
Educational status				
Can't read	23	59	1.00	1.00
Only read & write	7	8	0.4 (0.1, 1.3)	0.6 (0.1, 2.4)
Primary	30	52	0.6 (0.3, 1.3)	0.5 (0.2, 1.1)
Secondary	144	137	0.37 (0.2, 0.6)	**0.4 (0.2, 0.8) ***
College & above	75	61	0.31(0.1, 0.5)	0.6 (0.2, 1.3)
Occupation				
Student	22	18	1.00	1.00
House wife	52	71	1.7 (0.8, 3.4)	0.8 (0.3, 2.1)
Unemployed	26	57	2.7 (1.2, 5.8)	1.6 (0.6,4.4)
Merchant	37	46	1.5 (0.7, 3.2)	1.2 (0.4, 3.2)
Government	52	34	0.79 (0.3, 1.7)	0.5 (0.2, 1.3)
Private	81	72	1.1 (0.5, 2.1)	0.7 (0.3, 1.7)
Retired	9	19	2.6 (0.9, 7.1)	1.2 (0.3, 4.2)
Lab request referred or not				
Referred	4	19	1.00	1.00
Not referred	275	298	4.3 (1.4, 13.1)	**0.2 (0.07, 0.9)***
Availability of requested laboratory test				
No	88	72	1.00	1.00
Yes	191	245	1.5 (1.1, 2.2)	1.2 (0.7, 1.9)
Type of lab visit				
First time	130	209	1.00	1.00
Repeat	149	108	0.45 (0.3, 0.6)	**0.3 (0.2, 0.4)***
Turnaround time				
< 30 minute	7	10	23.3 (5.1, 106)	**25.9 (5.2, 129)***
30 min-60 minute	110	262	38.9 (11.8, 127.5)	**37.8 (10.7, 133.2)***
1 hour-2 hour	113	42	6.1 (1.8, 20.5)	**5.3 (1.5, 19.1) ***
>2 hour	49	3	1	1
Pre-laboratory service satisfaction				
Not satisfied	83	55	1.00	1.00
Neutral	10	5	0.75 (0.24-2.32)	0.8 (0.1, 3.5)
Satisfied	186	257	2.08 (1.4-3.07)	1.3 (0.8, 2.2)

N.B:- where P-value <0.05 & Adjusted for all variables in the table; * indicates those with significant association

6 Discussion

This study was set out with the aim of assessing clinical laboratory service satisfaction of patients towards selected clinical laboratory services in those hospitals under Addis Ababa Health Bureau, implementing strengthening laboratory management towards accreditation program. Hence this study first of its kind to assess clinical laboratory service satisfaction of patients towards selected clinical laboratory services focusing on SLMTA program implementing clinical laboratories compared with Prior studies conducted in Addis Ababa, Jimma, Eastern Ethiopia, southern Ethiopia and Amhara [8,17,18,19,20,33]

The results of this study revealed that the proportion of overall patient satisfaction on clinical laboratory's services was 53 %. This is similar with the findings at Amhara North West Ethiopia 52.6% [33] which assesses satisfaction on the quality of malaria diagnostic service. But the current finding is slightly lower than a report from a study conducted in a teaching hospital in Addis Ababa (59.7%) [17]. The other studies from Eastern Ethiopia (87.6%), and Southern Ethiopia (90.8%) [19, 20] calculated satisfaction by excluding the neutral responses and resulted in higher value making comparison of satisfaction rate difficult. However, when comparing satisfaction rates obtained using same technique of 5 Likert scale, the overall mean rate of satisfaction of patients in Addis Ababa city administration hospitals was 3.93. Cleanliness of latrine was rated the lowest (mean± score= 3.18±1.17) which is also observed by other studies from Sidama zone, Southern Ethiopia (3.07 ±0.96) [20] and Eastern Ethiopia (2.48 ± 1.39) [19], and Nekemte referral hospital [9].

The study from the south identified patient communication [4.25 ±0.56] to have the highest mean score [20] where as in the current study location of the laboratory (4.34±0.82) and assurance of privacy during specimen collection (4.32±0.57) were rated the highest. These results are also similar with Tikur Anbesa Specialized hospital in which patients were highly satisfied with maintenance of privacy and confidentiality [17]. Adequacy of sitting arrangement in waiting area and time spent waiting to get the laboratory result, also accords with earlier observations, which showed that similar findings in Addis Ababa antiretroviral therapy clinics in public hospitals, Nekemte Oromiya and Southern Ethiopia [8,9, 17]. The significant relationship between waiting time to get laboratory services and laboratory results with level patients'

satisfaction toward clinical laboratory service is also consistent with the study conducted in Amhara region showing that long waiting hours were associated with dissatisfaction [31].

While cleanliness of latrine has been a shared problem, which needs attention by hospital administrators, differences in the other variables could be explained by variations in the types of services assessed for patient satisfaction.

The lowest and highest range of mean satisfaction score observed in the current study was higher as compared with studies conducted at Nekemte Hospital, Wollega Ethiopia range from 2.15 to 3.82 [9]. Apparently this finding revealed a similar result with Tikur Anbesa Specialized Hospital with a mean rating values ranged from 3.05 (±1.12) to 4.12 (±1.08) out of a possible 5 [17]. A possible explanation for these results may be the geographical difference and set up of the hospitals, SLMTA implementation differences though not mentioned by the other studies, among others.

The other studies, conducted in Addis Ababa and southern Ethiopia, were only about patient satisfaction with antiretroviral therapy (ART) monitoring laboratory services, which was a vertical program which has a due attention by government and support from different donors. Whereas in this study patients seeking for clinical chemistry, hematology, parasitology and urine analysis tests were included.

Satisfaction of patients is one of the outcome measures for health care services and it serves as a useful quality improvement tool, required by most clinical laboratories. Thus, identifying factors associated with satisfaction will help health service managers to design appropriate intervention. The current study found out that, statistically significant associations were found between the overall satisfaction of patients and turnaround time of laboratory results and STAR level of the laboratory. Based on the findings, the results of multivariable logistic regression analysis showed that patient satisfaction on clinical laboratory services at star grade 3 were 3.1 times more likely to be satisfied as compared with those who were attending star 2 laboratories (AOR= 3.1, 95% CI :1.4, 6.9). Those patients who were using at star 4 hospital laboratories were 1.9 times more likely to be satisfied as compared with those who at are star 2 laboratories (AOR=1.9, 95% CI: 1.2, 3.2). This suggests how being in the SLMTA program could have a potential to improve service provision and hence bring patient satisfaction [2,11,12] and that SLMTA program

implemented in the hospitals focuses not only on quality of services but ultimately on satisfaction of patients.

More over Patients receiving laboratory service less than 30 minute were 25.9 times (95% CI AOR: 5.2, 129) more likely to be more satisfied with laboratory services compared to those who underwent for more than 2 hours. Likewise those patients receiving laboratory services 30 minute to 60 minute 37.8 times (95% CI AOR: 10.7, 133.2) to be more satisfied with laboratory services compared to those who underwent for more than 2 hour. These findings further support the idea of Tanzanian study on patient's dissatisfaction with both the public and private laboratory services [30].

In contrary, socio-demographic characteristics, such as age group, sex, marital status and occupation of the respondents did not have any independent statistically significant association with overall satisfaction of patients towards clinical laboratory services. The findings of the current study are consistent with those of study conducted in Nekemte, Tikur Anbesa specialized Hospital and Eastern Ethiopia [9, 17, 19] documented similar findings.

The finding that patients attaining secondary school compared to those who cannot read and write were less likely to be satisfied with the laboratory service calls for giving more attention to quality improvement as educated patients are relatively aware of quality. A study from Tanzania have attested this observation where patients with higher education were more likely to be dissatisfied with laboratory services like privacy, waiting time, and result notification [30]. On the contrary, Mindaye T and Taye B [8] reported that respondents' educational status was not statistically associated with the overall satisfaction. A possible explanation for this might be that the period of the study and the previous study focuses only on ART patients.

7 Strength and Limitation of the study

7.1 Strength

- In this study, relatively larger sample size and study participants were included compared with other previous studies

7.2 Limitations

- The evidence of the study would have been enriched if it was supported by qualitative method.
- The perspectives clinicians, service providers, private hospital laboratories and those working on SLIPTA program were not included.
- Face -to- face interview of respondents at the hospital might have exposed the study for social desirability bias.

8 Conclusion and recommendation

8.1 Conclusion

The overall degree of patients' satisfaction was not satisfactory from the point of SLMTA program perspective. Patient satisfaction was relatively high with measures taken to assure confidentially about their test result, measures taken to assure privacy during specimen collection, cleanliness of the blood drawing area and location of laboratory from other department. In contrary, patient satisfaction was lowest with the Adequacy of sitting arrangement in waiting area , Cleanness of Latrine , Time spent waiting to get the laboratory result and location of latrines in the laboratory. Therefore; hospital administration and the laboratory department of each Hospitals should strive more to enhance patients' satisfaction, particularly in sanitation and location of the latrine in the hospital.

8.2 Recommendation

- Strengthening SLMTA program and upgrading star grade of hospital laboratory has a relationship with patient satisfaction; thus, the hospital laboratories should work to increase quality of laboratory service in line with accreditation program
- Patient waiting time (waiting time to give laboratory specimen, waiting time to get laboratory results, waiting time to get registration services should be reduced.
- Based on the finding, dissatisfaction of patients towards adequacy of sitting arrangement in waiting area, cleanness of Latrine, Time spent waiting to get the laboratory result and location of latrines in the laboratory could be a possible factor for the lower rate of patients' satisfaction towards clinical laboratory services. Therefore, the hospital administration and responsible body in each service should work together in improving the rate of patients' satisfaction towards respective stated areas.
- Periodic patients' satisfaction survey should be institutionalized to provide feedback for continuous quality improvement.

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10. Annex

Annex I Participant information sheet

Date of interview: _____ _____

Questionnaire number: _____ _____

Name of Hospital: _____

1. **Study title:**

Assessment of Patient satisfaction on laboratory services among Strengthening Laboratory Management towards Accreditation (SLMTA) Program Implementing Public Hospital Laboratories, Addis Ababa, Ethiopia

2. **Invitation paragraph:**

You have been invited to take part in this research study. Before you decide whether to take part it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully. Ask question if there is anything that is not clear or if you would like more information.

3. **The purpose of the study**

I am investigating the customer satisfaction on the quality of hospital laboratory service to improve the services provided by the hospital laboratories and would be interested to find out about your experience. I hope that this will help to understand more about quality of services provided by the hospital laboratory.

4. **Why you have been chosen?**

You are invited to participate in this study as a customer of the hospital laboratory. We want to understand the laboratory service quality by interviewing customers on service satisfaction. In this study a total of 602 laboratory services customers will participate.

5. **Do I have to take part?**

No. It is up to you to decide whether or not to take part. If you do, you will be given this information sheet to keep and be asked to sign consent form. You are free to withdraw at any time, without giving a reason. A decision not to take part or to withdraw at any time, will not affect the service that you are getting from the laboratory.

6. What will happen to me if I take part?

Your role in the study:

If you agree to participate, I will ask you some questions about the visit you have had and would be very grateful if you could spend some time answering these questions. If you take part in the research you will be asked to give your consent for the information you provide to be used for the study.

7. What are the possible benefits of taking part and incentives?

You will not be provided any incentive to take part in this research. However, your honest answers to those questions will help us better understand quality of laboratory service in this hospital for developing strategies and organizing future laboratory service.

8. What are the possible disadvantages and risks of taking this part?

There is no risk in participating in this research, but the interview will take about 30 minutes of your personal time.

9. Will my taking part in the study is kept confidential?

The information that we collect from this research project will be kept confidential. Information about you that will be collected from the study will be stored in a file, which will not have your name on it, but a code number assigned to it. The data will be kept separately in a protected data management file and it will not be revealed to anyone except the principal investigator. Your personal information will not be disclosed even during the reporting of the findings. Reports will be written and disclosed anonymously.

10. What will happen to the results of the study?

Data from this study will be analyzed and submitted to Addis Ababa University but your identity will not be revealed. Data will also be published in scientific journals & also presented at seminars at national meetings. No information containing your name will be disclosed.

11. Who is organizing and funding the project

The cost of this research project is covered by Addis Ababa University & principal investigator.

12. Who has reviewed the study?

This study will be given a favorable ethical opinion by the Addis Ababa university Research Ethics committee.

13. How to give my consent

If you have interest to take part in this research, the PI or the delegated person will provide you the consent form which you can sign if you agree to participate.

You will be given a copy of the information sheet and a signed consent form to keep

Thank you in advance for considering taking part in this study

Study coordinator and Principal investigator

Your names here_____

Mobile: _____

AAU, Department of Medical Laboratory Science Research and Ethical Committee

Tel: 011 275 5170

Identification Number

001 Town: _____ 004 Date of interview _____

002 Sub city: _____ __ 005 Interviewer name _____

003 Code Number: _____ 006 Supervisors _____

Annex II informed consent form

Informed consent form (English Version)

Please read this form and sign it once the above named or their designated representative has explained fully the aims and the procedures of the study to you.

- I voluntarily agree to take part in this study.
- I confirm that I have been given a full explanation by the above named and that I have read and understood the information sheet given to me which is attached.
- I have given the opportunity to ask questions and discuss the study with the investigator or their deputies on all aspects of the study and I have understood the advice and information given as a result.
- I authorize the investigator to disclose the results of my participation in the study, but not my name.
- I understand that I am free to withdraw from the study at any time
- I understand that information recorded during the study will be kept confidential.

Name:_____ Signature:_____ Date: _____

The participant is unable to sign. As a witness, I confirm that all the information about the study was given and the participant consented to taking part.

Name of Impartial Witness*(if required)*	**Signature**	**Date**

I confirm that I have fully explained the purpose of the study and what is involved to:

…….

I have given the above named copy of this form together with the information sheet.

Signature: ……. Name: ……..

Contact Address:_____ & mobile_____

Participant Information sheet Amharic version የመረጃ ቅጽ

1. <u>የጥናቱ መጠሪያ</u>

በላቦራቶሪ አገልግሎት ዙሪያ የታካሚዎችን እርካታ መዳሰስ

2. <u>በጥናቱ እንድሳተፉ ስለመጋበዝ</u>

በዚህ ጥናት ላይ እንዲሳተፉ እንጋበዘዎታለን ነገርግን በጥናቱ ከመሳተፍዎ በፊት የጥናቱ አላማና አስፈላጊነትን በቅድሚያ መረዳት ያስፈልገዎታል፡፡ እባክዎ ጊዜ ወስደው የሚከተለውን መረጃ ያንብቡ፡፡ ማንኛዉም ጥያቄ ወይም ግልፅ ያልሆነ ነገር ካለ መጠየቅ ይችላሉ፡፡

3. <u>የጥናቱ ዓላማ</u>

እኔ አሁን የማጠናዉ የደንበኞችን እርካታ በሆስፒታል ላቦራቶሪዎች ላይ ሲሆን አላማውም በሆስፒታሉ የሚሰጠውን አገልግሎት ለማሻሻል የሚረዳ ይሆናል፡፡ የዚህም ጥናት ዉጤት ስለሆስፒታል ላቦራቶሪ ጥራትና የደንበኞችን እርካታ የተሻለ እውቀት እንዲገኝ በሚደለገዉ ጥረት ጉልህ ድርሻ ይኖረዋል፡፡

4. <u>እርሶ ለምን በዚህ ጥናት እንዲሳተፉ ተመረጡ?</u>

እርሶ በዚህ ጥናት ላይ እንዲሳተፉ የተመረጡበት ምክንያት የሆስፒታሉ ላቦራቶሪ ተጠቃሚ በመሆንዎና በጥናቱ ሊካተቱ የሚችሉት የላቦራቶሪ አገልግሎት ተጠቃሚ ብቻ በመሆናቸው ነው፡፡ በዚህ ጥናት 602 የሚሆን የላቦራቶሪ አገልግሎት ተጠቃሚ ይሳተፉሉ፡፡

5. <u>በዚህ ጥናት ላይ ለመሳተፍ የግድ ያስፈልጋል?</u>

በጥናቱ ላይ ለመሳተፍ የግድ አያስፈልግም፤ በፍላጎት ላይ ብቻ የተመሠረተ ነው፡፡ በጥናቱ ላይ ለመሳተፍ ከወሰኑ ይህ መረጃና መስማማትዎን የሚገልጽ ቅጽ ይሰጠዎታል፡፡ መረጃውን ካነበቡና የሚጠይቁት ጥያቄ ካለም በመጠየቅ በሚገባ ከተረዱ በኃላ መስማማትዎን ይገልጻሉ፡፡ ከጥናቱ በፈለጉት ጊዜና ሰዓት ያለምንም ቅድመ ሁኔቴ ማቋረጥ ይችላሉ፡፡ እራስዎን ከጥናቱ በማግለልዎ ምክንያት የላቦራቶሪ አገልግሎት ከማግኘት አያግድም፡፡ እንደማንኛውም ታካሚ አስፈላጊውን አገልግሎት ያገኛሉ፡፡

6. <u>በጥናቱ ላይ ከተሳተፍኩ ከእኔ ምን ይፈለጋል?</u>

በጥናቱ ላይ ለመሳተፍ ከተስማሙ ጠያቂው እርስዎ እንዲመልሱ የሚጠበቁ ጥያቄዎች ይጠይቅዎታል፡፡ በጥናቱ ላይ ለመሳተፍ ከወሰኑ የሚሰጡት መረጃ ለጥናቱ አላማ እንዲውል የስምምነት ቅጹንበመፈረም ያረጋግጣሉ፡፡ እዚህ ጥናት ላይ ባይሳተፉም ቢሳተፉም በህጉ መሰረትአገልግሎቱን ያገኛሉ::

7. <u>በጥናቱ ላይ ቢሳተፉ ጥቅማ ጥቅም አገኛለሁኝን?</u>

በዚህ ጥናት ላይ በመሳተፍዎ የተለየ ጥቅም በግል አያገኙም፡፡ ነገር ግን በግልጽነትና በሀቀኝነት የሚሰጡን መረጃ የላቦራቶሪ አገልግሎትን ጥራት ለማሻሻል በሚደረገው ሂደት ላይ ጉልህ አስተዋጽዎ ያበረክታል፡፡ እንዲሁም የእርስዎ በጥናቱ መሳተፍ ስለላቦራቶሪው አገልግሎት ያለውን ጥሩ ግንዛቤ እንዲኖረንና ጥራቱን ለማሻሻል መረጃ በመስጠት ይጠቅመናል፡፡

8. <u>በጥናቱ ላይ በመሳተፌ የሚደርስብኝ ጉዳት አለ?</u>

ጥናቱ ላይ በመሳተፍዎ የሚደርስብዎ ምንምአይነት ጉዳት የለም፡፡ ነገር ግን ቃለምልልሱን በሚያደርጉበት ወቅት 30 ደቂቃ የሚያህል የግል ጊዜዎን ለጥናቱ ያበረክታሉ፡፡

9. <u>በዚህ ጥናት መሳተፍ በሚስጥር ይያዛልን?</u>

አዎን ለዚህ ጥናት የሚሰበሰበው መረጃና እና የመረጃ ውጤት በሚስጥር ይያዛል፡፡ ስለ እርስዎ የሚገልጽ ማንኛውም ነገር በጥናቱም ሆነ በውጤቱ ላይ አይጻፍም፡፡ ውጤት ሲገለጽ ስም አልባ ይሆናል፡፡ ለእያንዳንዱ መጠይቅ ልዩ መለያ ቁጥር ወይም ምልክት ይሰጠዋል፡፡ የትኛው ቁጥር የማን እንደሆነ ዋና ተመራማሪው ብቻ ያውቃል፡፡ የጥናቱ ውጤት የሚፃፈውናየሚገለፀው የጥናቱ ተሳታፊዎችን ስም በማያካትት ይሆናል፡፡

10. <u>የጥናቱ ውጤት?</u>

የጥናቱ ውጤት በሳይንሳዊ መፅሔት ላይ ይታተማል እንዲሁም የጥናቱ ውጤት በተለያዩ ስብሰባዎች ላይ ይቀርባል፡፡ ነገር ግን የእርስዎ ማንነት በምንም መልኩ አይገለፅም፡፡

11. <u>የጥናቱን ወጪ የሚደግፈው?</u>

የጥናቱ ወጪ የሚደገፈው በአደስአበባ ዩኒቨርሲቲና በዋናአስተባባሪ ነው፡፡

12. <u>ፈቃደኝነቴን ለመግለፅ?</u>

ጥናቱ ላይ የመሳተፍ ፍላጎት ካለዎት ከጥናቱ ዋና አስተባባሪ ወይም ከተወከለው ሰው የስምምነት ቅፅ በመውሰድ ፊርማዎትን በማሰፈር ስምምንዎትን ማረጋገጥ ይችላሉ፡፡

13. <u>ይህ ጥናት ተቀባይነትን አግኝቷል?</u>

ይህ ጥናት በአዲስ አበባ ዩንቨርስቲ የስነ-ምግባር ኮሚቴ ተገምግሞ ተቀባይነትን አገኝቶ ፀድቋል፡፡

<u>ተጨማሪ መረጃ ከፈለጉ የሚከተሉትን ባለሚያዎች ማነጋገር ይችላሉ</u>

1. የጥናቱ አስተባባሪና ዋና ተመራማሪ ዝግባ ተፈራ ፤ ስልክ ቁ. 0913062633
2. ስልክ ቁ. 0112 755170

Consent form Amharic Version

ተሳታፊየሚፈርሙት የስምምነትቅጽ

የጥናቱንአላማናሂደትበዝርዝርከተረዱ በኃላየሚከተለውንቅጽበጥንቃቄ ይፈርማሉ፡፡

- **የጥናቱንተሳታፊእንድሆንበሙሉፈቃድወስጃለሁ**
- **ከዚህ ጋር የተያያዘውን የመግለጫ ቅጽ በትክክል አንብቤተረድቻለሁ፡፡ በእኔ ላይም ስለሚደረግማንኛውም ጥናት ተገንዝቤአለሁ፡፡ በተጨማሪም አስፈለቃጊውን ገለጻና ማብራሪያ ከላይ በተጠቀሱትሰውተደርጎልኛል፡፡**
- **ጥያቄ የመጠየቅ መብት የመወያየት እድል ከላይ ከተጠቀሱት አጥኚዎች ወይም ከነሱ ተወካይ ጋር ተሰጥቶኝ በጥናቱ ላይ በቂ ምክርና ውይይት አድርጌያለሁ፡፡**
- **በተመራማሪዎቹ የጥናቱን ውጤት ይፋ እንዲያደርጉ እፈቅዳለሁ፡፡ነገር ግን ስም መጠቀስ የለበትም፡**
- **ተመራማሪዎቹ በጤናዬ ላይ ያለን ችግር እንዲነግሩኝ ፈቅጀላቸኃለሁ፡፡**
- **በማንኛውም ጊዜ ከጥናቱ እራሴን ማግለል እንደምችል አውቄያለሁ፡፡**
- **ከእኔ የሚሰበሰበው ማንኛውም መረጃ በጥንቃቄና ሚስጥራዊነቱ በተጠበቀ ቦታ እንደሚቀመጥ አውቄያለሁ፡፡**

ስም_____ ፊርማ_____ ቀን_____

ይህበጥናቱየሚሳተፈውሰውመፈረምስለማይችልከላይየተዘረዘሩትመረጃዎችለተሳታፊውየተሰጡናተሳታፊውምለመሳተፍመስማማቱን ገለልተኛታዛቢ በመሆንአረጋግጣለሁ፡፡

_____ _____ _____

የገለልተኛታዛቢስምፊርማቀን

ስለጥናቱዝርዝርመረጃስለመስጠቱአረጋግጣለሁ

……..….

የመተማመኛቅጹንከስምምነትቅጽጋርአያይዤሰጥቻለሁ

ፊርማ…… ስም……..

Annex III Questionnaire

English Questionnaire

PART I. DEMOGRAPHIC VARIABLES

No	Questions	Coding category	Skip to
101	Age of respondents	Age in years _____ Don't Know …….. 0 No answer ……1	
102	Sex of respondents	Male …….. 0 Female ……..1	
103	What is the highest level of education you completed?	Cannot read and write ……..0 Only read and write ……...1 1 to 6 grade ……... 2 7 to 12 grade ……3 Collage & above…….. 4	
104	What is Your current marital status?	Single..……0 Married …….. 1 Divorced …….. 2 Widowed …….. 3	
105	How much is your estimated monthly income?	_____ ETB	
106	Where do you live?	Addis Ababa city ……0 Out of Addis Ababa city(<=50km)…1 Out of Addis Ababa city (>50km)……2.	
107	What is Your occupation?	Student …… 0 House wife……1 Un employed…….2	

		Merchant …… 3 Government employee……. 4 Working in the family business…….5 Other specify _____ 6	

PART II. PATIENT INTERVIEW ON THE OVER ALL SERVICES

No	Questions	Coding Category	Skip to
201	Are the services you are getting in this laboratory paid or free?	In payment……0 Free…….1	
202	Are the requisition of this laboratory request referred or not referred?	Referred……0 Not Referred……..1	
203	Did you know this hospital laboratory before?	This is my first time …… 0 Have come here before ……1	
204	How long did it take to you to arrive at this hospital?	Less than ½ hour …… 0 ½ to 1 hour ……..….. 1 1 to 2 hours…… 2 More than 2 hour ……..3 Don't know ……..…….4	
205	Which transport have you used to come to this hospital?	I came on foot …….. 0 Taxi/bajaj ……1 Personal Vehicle ……2 Motorcycle/bicycle ……3 Other (specify) _____ 4	
206	How long did you wait to get a the laboratory service result?	Less than ½ hour 0 Half to one hour 1 1 hour to 2 hour 2 Above 2 hour 3	
207	Did you feel that the schedule	No …… 0	

	(opening & closing) hours of the laboratory were convenient for you?	Yes …… ..1 Don't know the opening hours……..2	
208	Would you come again to this hospital laboratory?	No …… 0 Yes 1 I do not know 2	If no skip to Q210
209	If yes, what makes you to decide to come again? (one or more answer possible)	Convenient opening hour……...0 Get the service early ……..1 Good-quality services …….. 2 Availability of many services……..3 Want to be anonymous…… 4 Have other reasons to come here (e.g., immunizations, health talks)…….…….. 5 Cheaper service fee…….. 6 Prefer provider here……7 Other (specify) _____ 8	
210	If no, what makes you to decide not to come again? (one or more answer possible)	Inconvenient opening hour ……0 Long waiting time ……..1 Poor-quality services……. 2 Availability of few services ……...3 Expensive service fee ……4 Not preferring service provider here……. 5 Other (specify) _____ 6	
211	How much needle stick attempted to draw blood?	One vein puncture = 1 Two vein puncture =2 Three vein puncture = 3 Four or more vein punctures =4	
212	Do you develop bruise after the Phlebotomy procedures (Today)?	Yes=1 No =2	

213	Do you get information on how to lessen the size of a possible bruise due to blood drawing	Yes = 1 No=2	
214	Is there a place in blood drawing room to put your personal things (jacket, bag etc)	Yes = 1 No=2	

PART III. PATIENT INTERVIEW ON CLINICAL LABORATORY SERVICES SATISFACTION

		Very satisfied	Satisfied	Neutral	Dissatisfied	Very dissatisfied	
301	How do you rate the overall Satisfaction of the services received before you get laboratory services?	1	2	3	4	5	
302	How much are you satisfied with the time spent waiting to get the laboratory result?	1	2	3	4	5	
303	How much are you satisfied with the queue process to get service?	1	2	3	4	5	
304	How satisfied are you with the courtesy and respect of the laboratory personnel during your visit?	1	2	3	4	5	
305	How satisfied are you with measures taken to assure privacy during specimen collection (e.g. during blood drawing)	1	2	3	4	5	
306	How satisfied are you with the location of the laboratory?	1	2	3	4	5	
307	How satisfied are you with the availability of requested testes in the laboratory?	1	2	3	4	5	

308	How satisfied are you with the cleanness of waiting area of the laboratory?	1	2	3	4	5	
309	How satisfied are you with the adequacy of sitting arrangement in waiting area?	1	2	3	4	5	
310	How much are you satisfied with the Cleanliness of the blood drawing area?	1	2	3	4	5	
311	How satisfied are you with the completeness of Information given before & during specimen collection outside the laboratory room	1	2	3	4	5	
312	How satisfied are you with the measures taken to assure confidentially about your test result?	1	2	3	4	5	
313	How satisfied are you with the Communication of laboratory service provider?	1	2	3	4	5	
314	How satisfied are you with the accessibility of sample Collector place from laboratory reception?	1	2	3	4	5	
315	How are you satisfied with the ability of sample collector or test performer at their job	1	2	3	4	5	
316	How satisfied are you with the service fee (cost) in this hospital laboratory?	1	2	3	4	5	

317	How satisfied are you with the Location of Latrine?	1	2	3	4	5	
318	How satisfied are you with the Cleanness of Latrine?	1	2	3	4	5	

ክፍል 1 የማህበረሰባዊ ጉዳይ መረጃ መጠየቂያ ፎርም

ተ.ቁ	ጥያቄ	አማራጭ መልስ በኮድ	ወደ ተ.ቁ----- ይለፉ
101	እድሜ(ሽ) ስንት ነው?	እድሜ በአመት _____ አላውቅም ..... 0 መልስ የለም 1	
102	ፆታ	ወንድ ..... 0 ሴት 1	
103	የትምህርት ደረጃዎ ምን ያህል ነው	መጻፍና ማንበብ የማይችል(ትችል)..... 0 መጻፍና ማንበብ ብቻ ..... 1 ከ1ኛ እስከ 6ኛ ክፍል ..... 2 ከ7ኛ እስ12ኛ ክፍል ..... 3 ኮሌጅ ዲፕሎማና ከዛ በላይከ 4	
104	የጋብቻ ሁኔታዎ----------?	ያላገባ/ ች .....1 ያገባ/ ች .....2 የፈታ/ ች .....3 ባል/ሚስት የሞተባት 4	
105	አማካኝ ወርሃዊ ገቢዎ ምን ያህል ነው?	_____ ብር	
106	በአሁን ሳአት የት ነው የሚኖሩት?	አዲስ አበባ ውስጥ .....o ከአዲስ አበባ ውጪ (<=50km).....1 ከአዲስ አበባ ውጪ(>50km).....2	
107	የስራ ሁኔታ	ተማሪ .....0 የቤት እመቤት ..... 1 ስራ የሌለው(ላት) .....2 ነጋዴ .....3 የመንግስት ሰራተኛ 4	

		የቤተሰብ ንብረት የሚያስተዳድር .....5 ሌላ ካለ ይግለጹ 6	

ክፍል 2 ተገልጋዩን ስለአጠቃላይ አገልግሎት መጠየቂያ ፎርም

ተ.ቁ	ጥያቄ	አማራጭ መልስ በኮድ	ወደተ.ቁ.ይለፉ
201	በላቦራቶሪው የሚያገኙት አገልግሎት በነጻ ነው ወይስ በክፍያ	በክፍያ .....0 በነጻ 1	
202	አሁን እያገኙት ያለው የላቦራቶሪ አገልግሎት ከሌላ ቦታ ሪፈር ተደርገው ነው ወይስ ከዚህ ሆስፒታል ነው	ሪፈር ተደርጌ .....0 ከዚሁ ሆስፒታል 1	
203	ከዚህ በፊት በዚህ ሆስፒታል ላቦራቶሪ አገልግሎት አግኝተው ያውቃሉ	ለመጀመሪያ ጊዜዬ ነው .....0 ከዚሄ በፊት መጥቼ አውቃለው ..... ነ	
204	እዚህ ሆስፒታል ለመድረስ ምን ያክል ጊዜ ይፈጅብሀል (ሻል)?	ከ30 ደቂቃ በታች .....0 ከ30 ደቂቃ እስከ አንድ ሰዓት ..... ነ ከአንድ እስከ ሁለት ሰዓት ..... 2 ከሁለት ሰዓት በላይ.....3 በትክክል አላውቀውም 4	
205	እዚህ ሆስፒታል ለመድረስ ምን አይነት መጉአጉአጓ ትጠቀማለህ?	በእግሬ መጣለው .....0 ታክሲ/ባጃጅ ..... ነ የግል መኪና ..... 2 ሞተር ሳይክል/ሳይክል ..... 3 ሌላ ካለ ይግለጹ 4	
206	አገልግሎት ለማግኘት ያለውን ቆይታ እንዴት አየኸው?	በጣም አጭር ..... 0 አጭር .....ነ ረዥም ..... 2 በጣም ረዥም..... 3	

207	የላቦራቶሪው መከፈቻና መዝጊያ ስአት ላነተ(ቺ) ምቹ ነው?	የለም ..... 0 አዎ ..... 1 መከፈቻና መዝጊያ ስዐቱን አላቅም..... 2	
208	ወደዚህ ሆስፒታል ላቦራቶሪ በድጋሚ አገልግሎት ለማግኘት ትመጣለህ?	የለም ..... 0 አዎ 1	መልሱ የለም ከሆነ ወደ ተ.ቁ 210 ይለፉ
209	አዎ ካለ(ች) ድጋሚ ለመምጣት የወሰንከበት ምክንያት? (ከአንድ በላይ መልስ መስጠት ይቻላል)	ምቹ በሆነ ሰዐት ስለሚከፈት .....0 አገልግሎቱን ቶሎ ስለማገኝ ..... 1 ጥራት ያልወ አገልግሎት ስላለ ..... 2 ብዙ አገልግሎት ስላለ ..... 3 ከሰዎች ጋር ለመመሳሰል ..... 4 ሌላ የመጣሁበት ምክንያት ስላለ(ለምሳሌ ክትባት፣የጤና ውይይት ወዘተ) ..... 5 ክፍያው እርካሽ ስለሆነ ..... 6 እዚህ ያሉ በለሙያዎችን ስለምመርጥ ..... 7 ሌላ ካለ ይግለጹ _____ 8	
210	የለም ካለ(ች) አዚህ ላለመምጣት የወሰንከበት ምክንያት? (ከአንድ በላይ መልስ መስጠት ይቻላል)	ምቹ ባልሆነ ሰዐት ስለሚከፈት ..... 0 አገልግሎቱን ቶሎ ስለማላገኝ ..... 1 ጥራት ያልወ አገልግሎት ስለ ሌለ ..... 2 ብዙ አገልግሎት ስለ ሌለ ..... 3 ክፍያው እርካሽ ስለሆነ ..... 4 እዚህ ያሉ በለሙያዎችን ስለማልመርጥ ..... 5 ሌላ ካለ ይግለጹ_____ 6	
211	የ ደም ናሙና ሲወሰድልዎ በመርፌ ስንት ጊዜ ተወጉ?	አንድ ጊዜ ተወግቻለሁ=1 ሁለት ጊዜ ተወግቻለሁ= 2 ሦስት ጊዜ ተወግቻለሁ=3 አራት ጊዜና ከዚያ በላይ ተወግቻለሁ = 4	
212	ደም ከተቀዱ በኋላ ብልዘት አጋጥምዎታል	አላጋጠመኝም =1 አጋጥሞኛ = 2	

213	ደም በሚቀዳበት ሰዓት በእጅዎ አካባቢ ሊያጋጥም የሚችለው ብልዘት መጠኑ እንዳይጨምር መረጃ አግኝተዋል?	አዎ =1 አይደለም = 2					
214	በደም ናሙና መሰብሰቢያ ክፍል ውስጥ የ ግል መገ ልገ ያ ዕቃዎች ማስቀመጫ ቦታ አለ (ጃኬት፣ ቦርሳ፣ ወዘተ...)	አዎ =1 የ ለም = 2					
ክፍል 3 ተገልጋዩን ስለአገልግሎት እርካታ መጠየቂያ ፎርም							
		በጣም እረክቻለሁ	እረክቻለው	ምንም	አልረካሁም	በጣም አልረካሁም	
301	በአጠቃላይ ላቦራቶሪ ከመምጣትዎ በፊት በተሰጠዎት አገ ልግሎት ምን ያህል ረክተዋል	1	2	3	4	5	
302	የላብራቶሪ አገልግሎት ለማግኘት በሚኖረው ቆይታ ምን ያክል እረክተሀል (ሻል)?	1	2	3	4	5	
303	አገልግሎቱን ለማግኘት በሚኖረው ወረፋ ምን ያክል እረክተሀል(ሻል)?	1	2	3	4	5	
304	አገልግሎት የሚሰጡት የላብራቶሪ ባለሙያዎች በሚያሳዩት ከበሬታ እና ጥሩ አቀባበል ምን ያክል እረክተሃል(ሻል)?	1	2	3	4	5	
305	የሚሰጠው አገልግሎት ሚስጥራዊነቱን እንዲጠብቅ በሚደረገው እርማጃ ምን ያክል እርካታ አግኝተሀል (ሻል)? ለምሳሌ የግል ክፍል የተከለለ ቦታ ወዘተ.....	1	2	3	4	5	
306	የላቦራቶሪ ክፍል በሚገኝበት ቦታ ምን ያህል እረክተሃል(ሻል) ?	1	2	3	4	5	
307	የታዘዙትን ምርመራዎች ከማግኘት አካያ ምን ያህል እረክተዋል?	1	2	3	4	5	
308	በመቆያው ቦታ ንጽህናና ምቹነት ምን ያክል እረክተሃል(ሻል)?	1	2	3	4	5	

309	በሆስፒታሉ ተራ መጠበቂያ የ መቀመጫ (ወንበር) መጠን (በቁጥር) ምን ያህል ረከተዋል (ለመቀመጥ የ ወንበር ብዛት...)	1	2	3	4	5	
310	በደም ናሙና መስጫው ስፍራ ንጽህና ምን ያህል አርካታ ተሰምቶታል?	1	2	3	4	5	
311	የላቦራቶሪው ባለሙያ ናሙና ከመስጠትህ በፊትና ስትሰጥ በነገረህ መረጃ ምን ያህል ረከተህል	1	2	3	4	5	
312	የላቦራቶሪው ባለሙያው የምርመራውን ውጤት ሚስጥራዊነት በሚያደርገው ጥረት ምን ያህል ረከተህል?	1	2	3	4	5	
313	በላቦራቶሪው ባለሙያ የመግባባት ክህሎት ምን ያህል ረከተዋል?	1	2	3	4	5	
314	የናሙና መሰብሰቢያው ቦታ ከደንበኛ መቀበያ ቦታ ያለው ርቀት ምን ያህል ረከተዋል?	1	2	3	4	5	
315	በላቦራቶሪ የናሙና ስብሳቢው ወይም በአገልግሎት ሰጪው ብቃት ምን ያህል ረከተዋል	1	2	3	4	5	
316	በላቦራቶሪ የአገልግሎት ክፍያ ዋጋ ምን ያህል ረከተዋል?	1	2	3	4	5	
317	በመፀዳጃ ቤቱ ርቀትና ቦታው ምን ያህል ረከተዋል	1	2	3	4	5	
318	በመፀዳጃ ቤቱ ንፅህና ምን ያህል ረከተዋል?	1	2	3	4	5	

ጥያቄዎቹን ለመመለስ ላደረጉልኝ እገዛና ጊዜዎን ሰጥተው ስለተባበሩኝ አመሰግናለው

Declaration

I, the undersigned, declare that this MSc thesis is my original work, has not been presented for a degree in Addis Ababa University or any other universities. I also declare that all sources of materials used for the thesis have been duly acknowledged.

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