ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

DEPARTMENT OF MEDICAL LABORATORY SCIENCES

Effectiveness of laboratory mentorship Practice and associated factor among public health laboratories, in Addis Ababa, Ethiopia, 2020

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A Research thesis submitted to Department of Medical Laboratory Sciences College of Health Sciences, Addis Ababa Universityin partialfulfillment for requirement of Masters of Science degree in clinical laboratory sciences (Laboratory management and quality assurance track)

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Table of content

Contents

List of Abbreviation and Acronyms

AAPHREM:Addis Ababa City Administration Health Bureau Public Health Research and Emergency Management Core Process

AAU: Addis Ababa University

AFRO: Regional office for Africa

ASLM: African society for laboratory medicine

CDC: Centre for Disease Control and Prevention

EPHI: Ethiopian Public Health Institution

HC: Health centre

HO: Hospital

IDSR: Integrated Disease Surveillance and Response

ISO: International organization for standardization

MOH: Ministry of Health

PI: Principal Investigator

QMS: Quality Management System

SLIPTA: Strengthening Laboratory Improvement Process towards Accreditation

SLMTA: Strengthening Laboratory Management towards Accreditation

US**:** United States

WHO: World Health Organization

TABLE

FIGURE

Abstract

Background: - Laboratory mentorship is proven effective tool in building capacity for laboratories in establishing quality management systems, and accreditations. In Ethiopia, specifically in Addis Ababa, only few governmental health institutions have good Strengthening Laboratory Management towards Accreditation (SLMTA) scoring. Thus, to increase the number of accredited Medical Laboratories, identification of challenges and strengthening the mentorship activities is crucial.

Objective: To assess effectiveness of laboratory mentorship practice and associated factors among public health laboratories, in Addis Ababa, Ethiopia.

Methods:Facility based cross sectional study was conducted by collecting a secondary and primary data from selected government owned 62 health facility and 423 laboratory professionals, from January 1 to October 30, 2020 in Addis Ababa Ethiopia. Simple random sampling technique used to select study participant medical laboratories facilities and medical laboratory professionals. A structured questionnaire was employed during data collection.The collected data enter and analysis by SPSS version 20 statistical software. "Multivariable logistic regression" was used to determine factors associated to effectiveness of laboratory mentorship practice.

Result: From the total of 423 respondents,114of them (27%) stated that mentors were available regularly and frequently per schedule.Besides 123 (29.1%)respondents said that mentor spent more time with mentee during mentorship practice. During the study periods, among 62 health facilities on the follow up, majority48 (77.2%) of them had poor score (≤ 2 SLMTA grade), and only 14 (22.5%) heath institution had good score (≥3 SLMTA grade). Factors associated with poor mentorship practice includes, Lack of experience N=225/423 (53.2%), lack of accountability N=269/423 (63.6%) and lack of staff commitment N=272/423(64.3%), and all these factors had significant difference with P value of ≤ 0.05.

Conclusion: The present study showed that majority of medical laboratories had poor mentee and mentor relationships, which was reflected by poor SLIPTA score.Main factors affected effective laboratory mentorship practice includes lack of staff commitment, lack of experience, and lack of accountability. Therefore all stakeholder give due attention to establish effective laboratory mentorship practice, in order to improve the quality of medical laboratory services, in Addis Ababa, Ethiopia.

Key words: Laboratory mentorship, Quality management system, Accreditation

1. Introduction

1.1 Back ground

Clinical laboratories structure the dreams of establishment of proof based patient treatment and care, and are likewise an essential segment of infection observation, determination and checking at each degree of the medical care framework. Improving laboratories is basic to ensure patients get essential quality consideration. Laboratory service is one a piece of the wellbeing framework that needs solid quality improvement by applying various methodologies (1).

Laboratory Mentorship could also be a professional interaction that happens between two people, i.e. mentor and mentee, of various levels of knowledge and expertise. mentoring involves casual correspondence, as a rule face to face and through a supported time of your time, between a person who is appeared to have more prominent applicable information, astuteness, or experience (the mentor) and somebody who is seemed to have less (the mentee). It includes cooperation between a mentor and mentee to confer abilities, information, and demeanor change for improved help conveyance. Mentors should be capable, educated, submitted, with great instructing and undivided attention aptitudes. Laboratory mentorship could likewise be an expert connection that occurs between two individuals, for example mentor and mentee, of different degrees of information and expertise (2) .

The mentors go about as an undertaking model transferring basic information to the mentee on vocation movement as well as on polished methodology, morals and self-improvement(3, 4). Mentorship is perceived as an essential instrument for proficient turn of events, and furthermore the presence of a mentor has been related with positive preparing results, more prominent profession fulfillment and better work-life equilibrium of mentees (5) . Indeed, it's viewed as one in all the premier basic determinants of vocation accomplishment in medication and exploration. Mentors are profoundly important to help shape the vocations of the resulting age of clinical experts who need to get both clinical and expert information and abilities during a restricted time of your time (6, 7).

Building up very much organized mentorship program has been recommended as how of quickening a lab's way toward accreditation, In some low-asset settings including numerous African nations, laboratory service have experienced carelessness and ongoing a work in progress. Notwithstanding, as of late, Ministries of Health have progressively organized the norm of testing service by actualizing quality management system and incorporating quality improvement exercises into laboratories help work plans (8-10).

Different techniques for lab mentorship are depicted and executed in both creating and created nations. Frequently mentorship is directed over one or the other (short of what multi week) or long (a half year to in any event one year or more) time spans. We accept that these mentorship models frequently don't accomplish the predetermined effect. Investing more limited times of your energy with in the lab doesn't empower the mentors to raised comprehend the rhythms, examples, practices and characters of the lab in order to encourage positive change in cycle and conduct. Since quite a while ago run consistent mentorship doesn't give the opportunity to evaluate how well a laboratory is prepared to support or maybe broaden quality improvement without the mentors(11, 12).

At the indistinguishable time, medical experts in preparing could likewise be defied with vulnerabilities and difficulties in view of inability, solid reliance on bosses, transitory work contracts, and some of the time abrupt and sudden significant changes in close to home life and managing working conditions. Be that as it may, there's no grounded system to actualize a mentoring plan in clinical preparing. In a period of quick development of clinical and mechanical chances, the bar of learning is about a lot higher for trainees of today. The main European examination surveying the presence mentorship practice indicated that qualities of mentorship misbehavior including seize (i.e., taking mentee's thoughts or extends and naming them as their own for self-gain), exploitation, and possessive conduct of mentors are apparent hindrances to productive mentorship including mediocrity mentorship and deficient mentor (13, 14).

In the African region, the fundamental significance of laboratories in publically wellbeing reconnaissance is a segment of the system for the World Health Organization Regional Headquarters for Africa's (WHO-AFRO) Integrated Disease Surveillance and Response (IDSR) techniques that are embraced in virtually all African nations. Because of those objectives, in 2009 WHO AFRO set up the WHO-AFRO Laboratory Accreditation Process and research center administration preparing programs like Strengthening Laboratory Management towards Accreditation (SLMTA), and upheld the dispatch of the African Society for Laboratory Medicine (ASLM) in 2011.

The WHO-AFRO Laboratoryaccreditation measure was hence supplanted by the WHO-AFRO Strengthening Laboratory Quality Improvement Process towards Accreditation (SLIPTA) in 2011; to achieve this program appropriately strong site visits or mentors will have a critical part for successful usage of SLMTA and quality management system. Benefiting a straightforward arrangement of steady site visits and picking up upper administration proprietorship in partaking labs is required to get the most extreme beneficial thing about SLMTA(15, 16).

1.2 Statement of the problem

Between 2013 and 2014, the Cambodian Ministry of Health, World Health Organization (WHO), United States Centers for Disease Control and Prevention (CDC) and the Integrated Quality Laboratory Services company conducted a capacity assessment of 28 public hospital laboratories across Cambodia so the result showed that most public hospital laboratories do not have a quality management system in place to ensure the quality of diagnostic testing nor the capacity to meet international health regulation requirements and population health demands. Specific challenges that needed to be addressed included no site visitor or mentors to teach or support quality management system principles to laboratory staff, the lack of management oversight, lack of training and awareness of quality control procedures, unstable power supply, poor quality reagents and supplies, lack of standard management guidelines for supplies and equipment, and lack of equipment standardization between laboratories and local technical capacity for equipment, calibration, repair and maintenance. In addition, there have been limited public financial resources allocated to purchase and maintain laboratory equipment and reagents(27).

Inaccuracies in diagnostic testing can lead to potentially devastating outcomes for patient and public health, compromise the quality of surveillance data and can ultimately affect health policy (17-20). Most laboratory diagnostic errors happen in the pre-analytic phase (32–75%), while 13–32% occur in the analytic phase and 9–31% in the post-analytic phase(21, 22).The frequency of diagnostic errors can be as high as one for every 330 tests with (23)25% of such errors producing a major impact on patient care due to test repetition, inappropriate investigations or even unjustified clinical and therapeutic management (27).

However, in Ethiopia explicitly in Addis Ababa there are few laboratories which are passed on a good SLMTA scoring and getting ready to accreditation measure even if having set up laboratory mentorship program and quality management implementation so this underscoring can lead to the final result becoming not accurate, reliable and timely. Again our current mentorship practice has not been playing a key role in reinforcing quality management system. Indeed, even no investigation directed related to lab mentorship program in Ethiopia yet.

Alongside this mentorship and site visits could likewise be the principal testing part of execution and are frequently ignored inside the underlying system arranging. Site visits require faculty time, transportation assets (fuel, vehicle, and driver) and dwelling and constantly if overnight stays are essential. In the event that this part isn't planned and planned appropriately from the beginning, nations regularly battle to create the on location backing and oversight that are basic to the program's prosperity(24).

1.3 Significance of the study

The purpose of this study was to describe the current mentorship practice in public health laboratories and identifying possible areas for improvement. The finding will contribute in provision of concrete data about effectiveness ofmentorship programto MOH and other concerning body AAPHREM which had directly relationship to mentorship program.Moreover our studyprovides an opportunity for rapid laboratory quality improvement and ensuring continues monitoring of laboratory progress beyond the mentorship period this can lead to reduce laboratory error this means significant laboratory errors have an impact on patient outcome. In addition the finding of the study useful for scale up SLMTA score and it has an important role formentors and mentee to evaluate their own strength and weakness.

2. Literature review

A research conducted by David in Europe 2019 explained that current practice of mentorship in clinical microbiology and infectious diseases training, to identify possible areas for improvement and to assess the factors that are associated with satisfactory mentorship. An international cross-sectional survey containing 35 questions was answered by 317. Only 115/317 (36%) respondents stated that they were assigned an official mentor whereas the remaining 202/317(64%) respondents had no official mentor, Overall, 179/317 (56%) of trainees were satisfied with their mentor. 70/317 (22%) felt that they could not talk to their mentors during overburdened. Moreover, 67/317 (21%) stated that they could not talk to their mentor when unfairly treated and 59/317 (19%) felt uncertain(25).

A study conducted by polansky in southeast Europe in 2019 showed that Mentees showed clear progress, having completed 32 to 68% [median: 62%] of planned QMS action steps in their laboratories. In regards to the perceived value of the program, we found strong evidence that laboratory mentorship enhances laboratory quality improvement by promoting accountability to QMS implementation, raising awareness of the importance of QMS, and fostering collaborative problem solving Since the start of the mentoring, Laboratory “B” has achieved recognition by WHO, while two other labs made substantial progress and are scheduled for recognition in 2018. By using qualitative method of semi-structured interviews, applying grounded theory to the thematic analysis (26).

A research conducted in Cambodia by Lucy A Perrone in 2016 indicated the 12 laboratories have completed 74–90% of the 104 activities in phase 1, 53–78% of the 178 activities in phase 2, and 18–26% of the 129 activities in phase 3. Sustainable laboratory capacity strengthening is a long-term commitment that requires leadership, careful planning, effective policies and regulations and dedicated resource beside this regular on-site mentoring of laboratories using a detailed action plan in the local language allows staff to learn concepts of quality management system and learn on the job without disruption to laboratory service provision by using a method of recruited four laboratory technicians to be mentors and trained them in mentoring skills, laboratory quality management practices and international standard organization (ISO) 15189 requirements for medical laboratories. Separately, they trained staff from 12 referral hospital laboratories in laboratory quality management systems

Followed by tri-weekly in-person mentoring on quality management systems implementation which is aligned with the ISO 15189 standard (27).

A Study conducted in Lesotho 2012 compares that, The laboratory mentor was an experienced laboratorial from the southern African region and had significant experience in quality systems building and training. The mentor was a trained medical laboratory scientist with a four year degree in BSc Medical Laboratory Sciences. At the start of the mentorship, the mentor had eight years of laboratory working experience, with two of these as a trainer in laboratory quality management systems. The mentor had previously worked in a reference laboratory that was preparing for accreditation by the South African National Association of Standards. The mentorship model that was implemented had the mentor fully embedded within the operations of each of the laboratories. It was delivered in a series of two mentoring engagements of six and four week initial and follow-up visits respectively. In total, each laboratory received 10 weeks mentorship that was separated by 6–8 weeks. Quality improvements were measured at baseline and at intervals during the mentorship using the WHO-AFRO Strengthening Laboratory Quality Improvement Process towards Accreditation (SLIPTA) checklist and scoring system(15).

A study conducted in Zimbabwe 2014 addressed the model of mentorship.The objectives of the study focused on how the different models were implemented, cost involved per model and results achieved. They used Eleven of the laboratories had been trained previously in SLMTA (Cohort I)so there finding were At SLMTA baseline, Model 1–3 laboratories had a median score of 30%. After SLMTA, at mentorship baseline, they had a median score of 54%. At the post-mentorship audit they reached a median score of 75%. Each of the three mentorship models for Cohort I had similar median improvements from pre- to post-mentorship. Each model had their own positive side: They were assigned to one of three mentorship models based on programmatic considerations: Laboratory Manager Mentorship (Model 1, four laboratories); One Week per Month Mentorship (Model 2, four laboratories); and Cyclical Embedded Mentorship (Model 3, three laboratories). Among those,Model 1is more best because they were full-time laboratory employees; they were able to provide mentorship on a continuous basis throughout the program. Perhaps the greatest advantage of this model is that it builds capacity at the grass-roots level(28).

Again a study conducted in Zimbabwe 2013 suggests that Laboratory mentorship has been provided over the years in many different formats with varying results. Some achievements have been reported where use was made of short visits, with technical assistance through telephone and SKYPE. The authors observed that there is lack of a documented and standardized or harmonized approach to mentorship. This guide seeks to highlight elements that the authors feel should be considered when setting up a long term, sustainable mentorship program. Considerations of these guiding principles may be a step towards harmonizing approaches to mentorship. Harmonizing the approach may allow scalability and easy comparison across countries. With a standardized approach, budgeting and planning for countries intending to set up mentorship may be easier, as they are able to single out the activities expected. The study is based on experience in Lesotho as well as subsequent roll out of a similar approach in the other African countries of Zimbabwe, Mozambique, Swaziland and Cameroon between 2009 and 2011(29).

A research conducted in Kenya 2014 emphasized on mentorship model, their finding were At baseline, the mean score for the eight laboratories was 32%; all laboratories were below the one-star level. At mid-term, all laboratories had measured improvements. However, the three twinned laboratories had increased an average of 32 percentage points and reached one to three stars; whilst the five non-twinned laboratories increased an average of 10 percentage points and remained at zero stars. At exit, twinned laboratories had increased an average 12 additional percentage points (44 total), reaching two to four stars; non-twinned laboratories increased an average of 28 additional percentage points (38 total), reaching one to three stars. They used a method Three SLMTA workshops were interspersed with three-month periods of improvement project implementation and mentorship. Progress was evaluated at baseline, mid-term, and exit using the Stepwise Laboratory Quality Improvement Process towards Accreditation (SLIPTA) audit checklist and scores were converted into a zero- to five-star scale(30).

The need for extensive but affordable site support has led countries like Cameroon, Mozambique, Swaziland and Zimbabwe to determinestructured mentorship program with full-time facility-based local mentors – a model spearheaded by Lesotho. This model has well-defined goals for every mentoring engagement, extended contact time on site, defined periods when mentors are absent, consistent approaches across laboratories and measurement of progress using standardized tools. Mentors may come from the laboratories they are assigned to mentor, from anarea partner, or from outside the country. Mentors receive training in SLMTA implementation, mentorship and auditing. Due to their extended participation within the laboratories they are mentoring, they are ready to gain knowledge of the rhythms, practices and personalities of the laboratory, enabling them to facilitate the required changes in attitudes and behaviors(15, 24, 28, 29, 31).

2.1 Conceptual framework

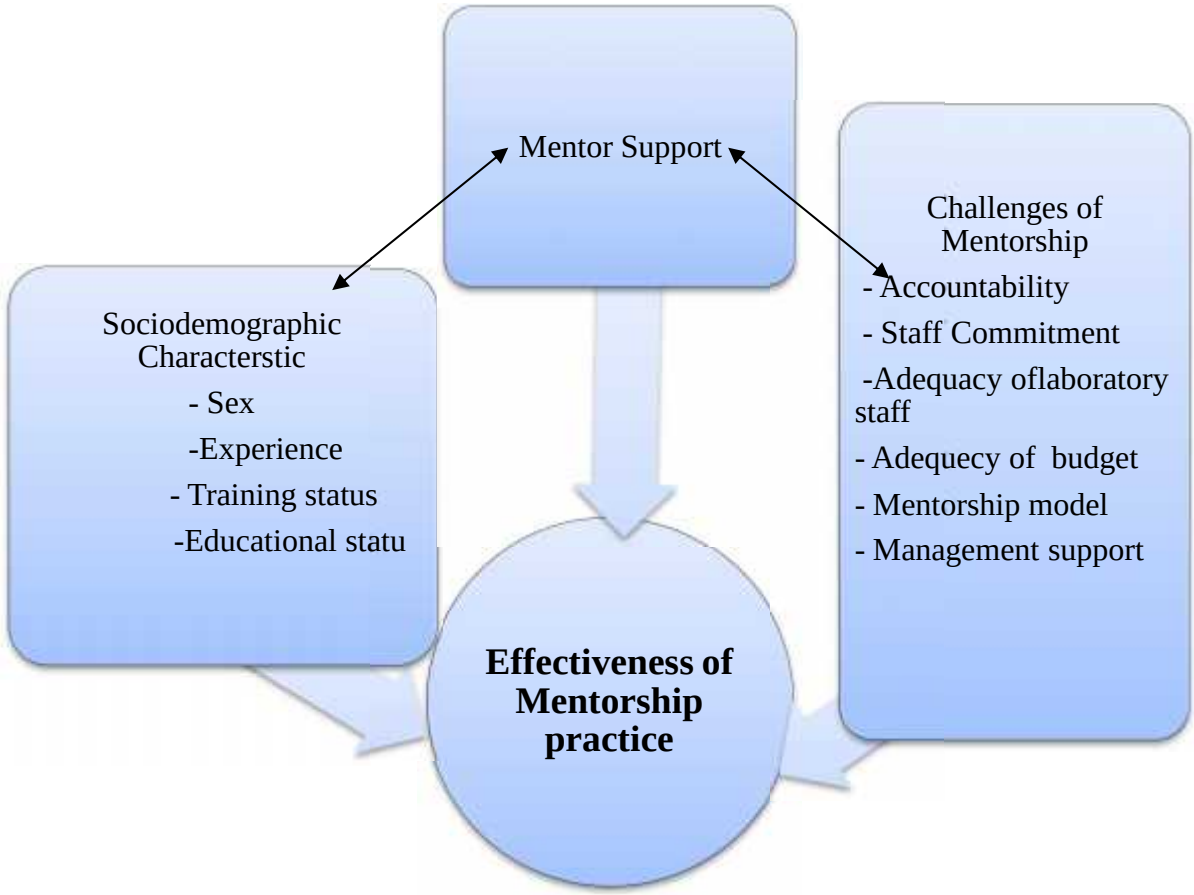

Figure 1 the relationship of independent variables with dependent variable.

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3. Objective

3.1. General objective:

To assess effectiveness of laboratory mentorship practice and associated factors among public health laboratories, in Addis Ababa, Ethiopia, from January - October, 2020

3.2. Specific objectives:

- To assesseffectiveness of laboratory mentorship practiceby using SLMTA scoring among public health laboratoriesin Addis Ababa, Ethiopia, from January - October, 2020.
- To identify factors associated with effectiveness of mentorship practice among public health laboratoriesin Addis Ababa, Ethiopia, from January - October, 2020.

4. Methods and Materials1

4.1. Study Area

This study was conducted in Addis Ababa, Ethiopia. Located at the heart of the country with the area of about 540 square kilo meters, it's the largest city within the country and a chartered city having three layers of state namely, city government at the top, 10 sub cities in the middle and 116 woreda, hosting population of 4, 793, 699(32). It has 34% primary health coverage and 100% geographical health coverage, on the other hand there are 101 health center and 12 public hospital , 2 NGO supported, 30 private, 5 federal, 1 defense, 1 prison and 1police hospitals laboratories;from this , 55 health center and 7 hospital which are found in Addis Ababa health bureau were included in this study(33).

4.2. Study Design and Period

This research employed facility based cross sectional study design, by collecting secondary and primary data, from study participant institution medical laboratory departments. All selected Medical Laboratories on the present study are currently involved on SLMTA program. The study was conducted from January 1 to October 30, 2020 in Addis Ababa city government health institutions

4.3. Population

4.3.1 Source population

All laboratories professional who were working in city government of Addis Ababa health facility

4.3.2 Study population

Selectedmedical laboratories professional working in participatedSLMTA program which are located in Addis Ababa city government health bureau

4.4 Eligibility criteria:

4.4.1. Inclusion criteria

- The health institution should be under Addis Ababa City government health bureau.
- The participated institutional medical laboratory participated in SLMTA program

4.4.2 Exclusion criteria

- The health institution not volunteer to participate on the study

4.5. Study variables

4.5.1. Dependent variables:

- ✓ Effectiveness of mentorship practice among public health laboratories

4.5.2. Independent variables:

- ❖ Gender
- ❖ Qualification
- ❖ Experience
- ❖ Trainingstatus
- ❖ Mentor support
- ❖ Adequacy of laboratory staff
- ❖ Accountability
- ❖ Management support (Reward)
- ❖ Budget
- ❖ Mentorship model
- ❖ Staff commitment

4.6 Sample Size Determination and Sampling Techniques

4.6.1 Sample Size Determination

The sample size for quantitative study was determined by calculated using a single population proportion[p] and there have been around 540 laboratory professionals in city government hospitals whereas around 606 laboratories professional were found in 101 public health centers from the preliminary assessment so total laboratory professionals who are working in public health facility are around 1146. The formula employed;

ni= $[Z^2 * P(1-p)]/d^2$Where n= sample size, Z^2= 95% confidence interval (1.96), P= 50% (0.5) will be taken because of unavailability of any study related to my title. d=taking 5 %(0.05) for the precision.

ni= $[Z^2 * P(1-p)]/d^2$ so [(1.96)2 * 0.5(1-0.5)]/(0.05)2

=384

10% should be added for non-response, 38.4+ 384 = 422.4 ~423laboratory professionals. Finally the total sample size were be 423 (mentee) = 423 participant included in our study.

After that we were use proportional allocation formula to determine how many participants included in hospital and health center so nj = n/N*Nj where

nj = the sample size of jth cluster n = total number of sample size

N = the number of total population Nj = population size of jth cluster

Hospitals = 423/1146*540 = 199.3 ~ 200 participant / 7 hospital = 29

Healthcenter = 423/1146*606= 223.68 ~ 224 participant / 55 health center= 4

4.6.2 Sampling Technique

Probabilitysampling technique was employed.Both ofthe laboratoriesand laboratory professionals which are found in city government of Addis Ababa taken by using simple random sampling technique.

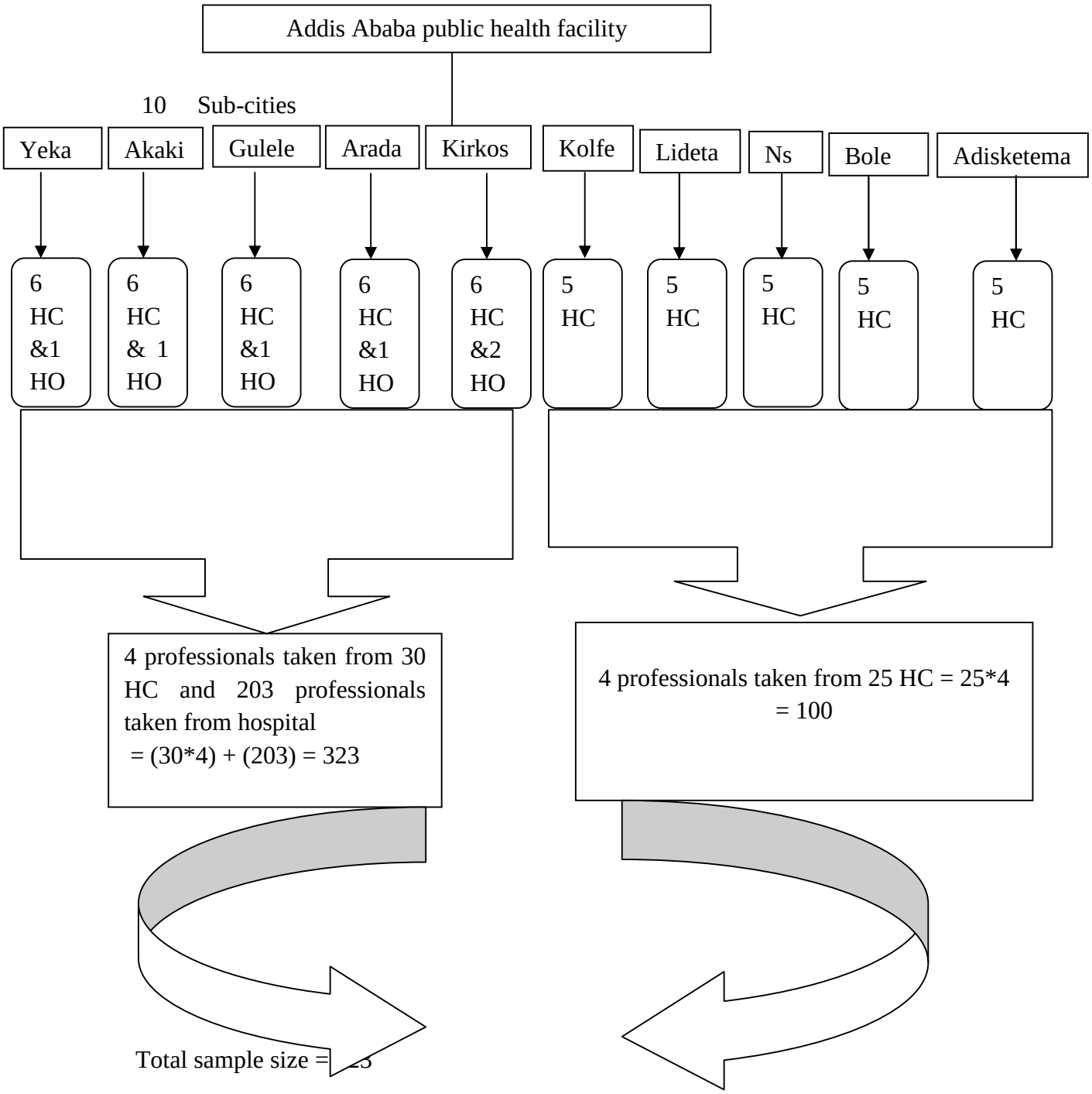


Figure 2Schematicpresentationofsamplingprocedure

4.7 Measurement and Data collection

4.7.1Measurement

One of the methodmeasuring effectiveness of mentorship practice was health facility SLMTA score and also specificallythe performance of mentor support measured by minimum and the maximum length of the 5-point Likert type scale (3, 26, 34)

SLMTA score:

Good score- health institutions that have ≥ 3 stars (≥75 %)

Poor score- health institutions that have < 3stars (<75%)

Mentor support: one question had 12 items and the cut of value is 6

Good support- a person who have score above the mean (>6)

Poor support- a person who have score below the mean (<6)

4.7.2Data Collection Procedure and Tools

Structuredquestioner was conductedto assess the effectiveness of laboratory mentorship practice among public health laboratory. The Questioner wasdeveloped based on reviewing different literature. Participants were also provided 25 structured questions to fill their response within 30 minutes, out of 25 questioners 7 of them were socio demographic characteristics. The questionnaire consists threesub-components, from this part one showed socio-demographic characteristics, part two assessing mentor support, and part three factor which affect mentorship practice.

4.8 Data Quality control:

To ensure data quality, Pre-testing wasconducted with 5% of the total sample size and questions was checked for clarity, completeness, consistency, and some questions that posed difficulty or unclear wasrephrased and corrected. One days training was given to data collectors to increase the reliability of the data.

4.9 Data Processing and Analysis:

The data was first checked manually for completeness and the data entry was done using Epiinfo7^{TM} and the analysis was done by using SPSS version 20 computer software. Descriptive statistics such as proportions, percentages and data was alsohaving presented with tables, graphand texts. Beforeanalysis,Bivariable logistic analysis wasconducted primarily to check which variables had association with the dependent variables individually. finally the variables which had significant association was identified on the basis of adjusted

odds ratio (AOR) with 95% confidence interval (CI) and P-value less than 0.05 was used to report statically significance.

4.10: OperationalDefinitions:

Mentorship: is a professional interaction that occurs between two people, i.e. mentor and mentee, of different levels of knowledge and expertise.

Mentor: is laboratory professionals can help mentee to achieve their goal

Mentee: is laboratory professional who believes that the guidance and help of mentor

Quality management system: Coordinatedactivities to directand control an organization with regard to quality.

Accreditation: Procedure by which an independent authoritative body gives formal recognition that a body or person is competent to care out specific tasks.

Accountability: is another crucial element of program design. Mentee should be clear about to whom and how frequently they report their activities. The mentorship program was a good accountability measure because they know every month they will be asked about progress.

Competency: the ability to carry out the total performance responsibilities of the given practitioner's generic position or the combined knowledge and skill factors necessary to fulfill work obligations adequately.

4.11 Ethical Considerations

Ethical clearance was obtained from Addis Ababa University, College of health Sciences department of medical laboratory science and Addis Ababa health bureau ethical review committee. All selected professionals was communicated verbally by data collectors about their willingness to participate on the study and only volunteer's was interviewed. Anyone who was not willing to take part in the study he/she was had withdrawn from the study at any time. The confidentiality of datawas kept by the data collectors and principal investigator. The name of the participant wouldnotwrite in any part of the questionnaires.

5. Result

5.1 Socio demographic characteristics of the respondents

From a total of 423 respondents, 226 (53.4%) participants were males, on the analysis of study participant experience, 53.2% of our laboratory professionals had less than five years work experience andmost ofparticipantswere degree holders. In addition to this, out of all study participants, 292(69%) had taken< 3number of training (Table_1).

Table 1 Socio demographic characteristics of the respondents' in public health institution, Addis Ababa Ethiopia, 2020/ (n=423)

s.no		Study variables	Frequency	Percentage (%)
1	Sex	Male	226	53.4%
		Female	197	46.6%
2	Experience of mentee	<5 year	225	53.2%
		≥ 5 year	198	46.8%
3	Educational status	Diploma	93	22%
		Degree	317	74.9%
		Masters	13	3.1%
4	No of Training	< 3	292	69%
		≥ 3	131	31%

5.2; -Mentor Support Status

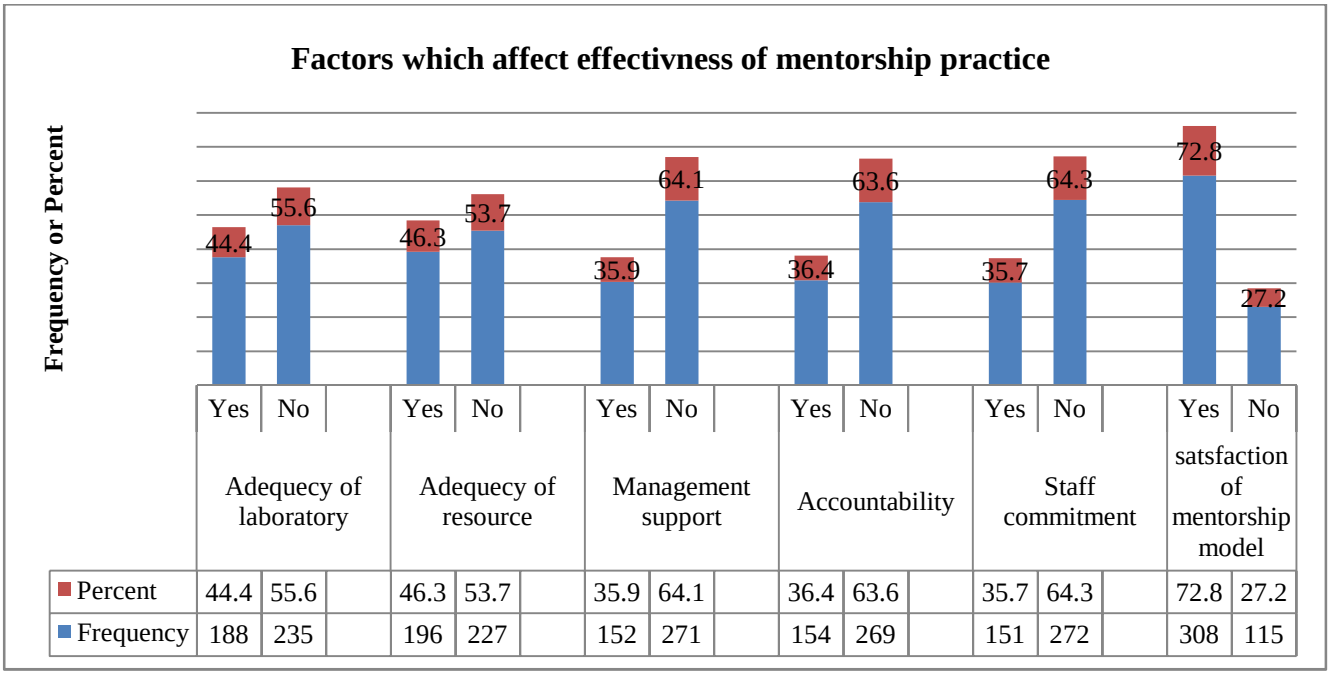
Mentor support status had 12 questioner items to assess mentors support at the selected study health institutions. Our findings indicated that the mean score of the respondents were 4.7, which was below the minimum expected score or cut of value which is 6.Regarding to mentor support, from the total of 423 respondents,114(27%) of themmentioned that mentors meetregularly and frequently the staff and 123(29.1%)respondentssaid that mentor spends more time with mentee during mentorship practice.104(24.6%) respondents said thatmentors well expressed during mentorship time. From the total of 423respondents 170 (40.2%) mentioned that mentors metall staff but the rest of respondents got only quality officer or laboratory head when they moved for mentoring. In addition to this 146(34.5%) respondents stated that mentors are wellpaid during mentorship practice.

Table 2Major Factorswhich Leads to PoorMentor SupportAddis Ababa Ethiopia, 2020/ (n=423)

s.no	Mentor status	Frequency	Percentage	Score(>50%= 1and <50%= 0)	Labeled good or poor
1	Mentorsmeet regularly and frequently the staff	114	27%	0	Poor (0)
2	Mentor spends more time with mentee during mentorship time	123	29.1%	0	Poor (0)
3	Mentors well expressed their own performance to mentee	104	24.6%	0	Poor (0)
4	Mentors met all staff instead of getting only quality officer or laboratory head	170	40.2%	0	Poor (0)
5	Mentors well paid	146	34.5%	0	Poor (0)

5.3:- Factors which Affect Effectiveness ofMentorship Practice

From the total of 423 respondents 188(44.4%) agreed that there were adequate laboratory staff in the health institution, on the other hand 308 (72%) of participants satisfied on the current mentorship model



	Adequecy of laboratory			Adequecy of resource			Management support			Accountability			Staff commitment			satsfaction of mentorship model	
	Yes	No		Yes	No		Yes	No		Yes	No		Yes	No		Yes	No
Percent	44.4	55.6		46.3	53.7		35.9	64.1		36.4	63.6		35.7	64.3		72.8	27.2
Frequency	188	235		196	227		152	271		154	269		151	272		308	115

Figure 3Shows Factors which Affect Effectiveness of Mentorship Practiceamong public health laboratory, Addis Ababa Ethiopia, 2020/ (n=423)

5.4- The level of SLMTA scoring

From the total of 62 health facilities, 48 (77.2%) health institutions have scored < 3 SLIPTA star levels (poor) and the rest 14 heath institution or 22.5% scored ≥3 SLIPTA star levels (good).

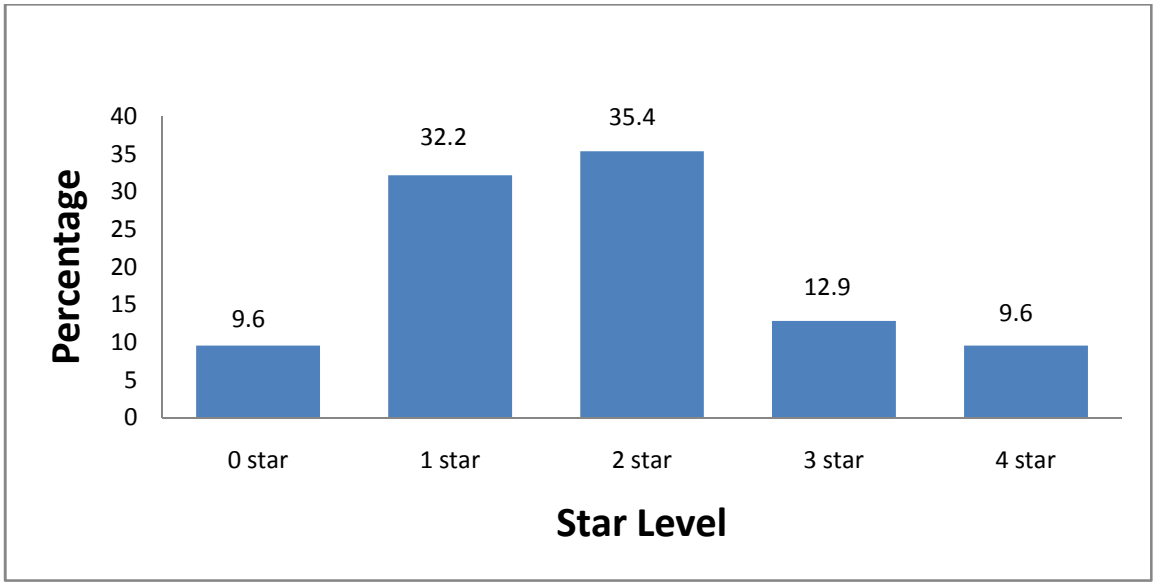


Figure 4 Percentage of SLIPTA scoring level of Addis Ababa health institutions

5.5- Factors associated with effective mentorship practice

In the bivariablelogistic analysis, experience, training status, Presence of adequate resource, management support, accountability, staff commitment, mentor support has Significant association with effective mentorship practice.In the multivariate analysis only three of variable showed that strong associationwith dependent variable, from thoseexperience, accountability and staff commitment were identified as independent factors affecting effective mentorship practice and which were significantly associated (P-value <0.05) with effective mentorship practice.

Table 3:-Multivariable logistic analysis result of study subjects on effective mentorship practice among public health laboratory , Addis Ababa Ethiopia, 2020/ (n=423)

Study variables		SLMTA Level of		COR with 95% CI	AOR with 95% CI
		Good	Poor		
Experience	≥ 5	97	101	5.588(3.518-8.875)***	4.286(2.557-7.183)***
	< 5	33	192	1	1
Number of Training	≥ 3	49	82	1.557(1.006-2.409) *	0.751(0.438-1.287)
	< 3	81	211	1	1
Budget	Yes	75	55	1.938(1.276-2.946) **	1.545(0.918-2.599)
	No	121	172	1	1
Management support	Yes	73	57	3.469(2.252-5.344) ***	1.079(0.591-1.972)
	No	79	214	1	1
Accountability	Yes	82	72	5.244(3.362-8.179) ***	3.634(2.198-6.009) ***
	No	48	221	1	1
Staff commitment	Yes	85	66	6.497(4.128-10.225) ***	5.288(3.197-8.747) ***
	No	45	227	1	1
Mentor support	Yes	50	74	1.850(1.190-2.874) **	0.998(0.559-1.783)
	No	80	219	1	1
Adequacy of laboratory staff	Yes	73	162	1.036(0.683-1.570)	0.670(0.396-1.134)
	No	57	131	1	1
Mentorship model	Yes	97	211	1.142(0.714-1.828)	1.416(0.785-2.554)
	No	33	82	1	1

SLMTA, strengthening laboratory management towards accreditation; COR, crude odds ratio; AOR, adjusted odds ratio; *P <0.05,** P< 0.01, ***P < 0.001.

6. Discussion

The implementation of effective mentorship practice in laboratories is best method to enhance laboratory-testing quality and ultimately patient care.

According to our survey 269 or 63.6 % respondents stated that there have beenlack of accountability during mentorship practice, here is one in every of the barrierstofruitful mentorship practice on the health facilities. In multivariable analysis, being accountable was 3.63 times better than unaccountable to attain effective mentorshipthis is the same to that a study conducted in southeast Europe in 2019 showed that Mentees showed clear progress, having completed 32 to 68% [median: 62%] of planned QMS action steps in their laboratoriesby promoting accountability to QMS implementation (26).

Our finding showed that 272 or 64.3% respondents agreed that there were lack of staff commitment within laboratory this leads to health facilities had poor SLMTA scoring after mentorship practice done. In multivariable analysis, committed staffs were 5.28 times better than not committed one to get good SLMTA scoring during mentorship practice this study is the same to a study conducted in Cambodia by Peronne et al stated that after 18months, 12 laboratories had completed 74–90% of the 104 activities in phase 1, 53–78% of the 178 activities in phase 2, and 18–26% of the 129 activities in phase 3. this type of sustainable laboratory capacity strengthening asked a long-term commitment that requires leadership, careful planning, effective policies and regulations and dedicated resource includingimbedding mentorship into the worksite and using local languages (27).

Our study showed that 53.2% of our laboratory professionals had less than five years experienceand also most of them had no previously worked on different reference laboratories that was preparing for accreditation so this gap may leads to most of our health facilities become scored < 3 SLMTA star level. In multivariable analysis, experienced medical laboratory professionals were 4.28 times better than inexperienced one to achieve effective mentorship so this study is the same to that a Study conducted inLesothoby marutatold usexperienced laboratory professionals achieved the mentorship program in the southern African region and had significant exposure in quality systems building and training.In addition to this experience serve as a selection criteria of mentors. At the start of the mentorship, the mentor had eight years of laboratory working experience. The mentor had

previously worked in a reference laboratory that was preparing for accreditation by the South African National Association of Standards (15).

Our study showed that 62 public health facilities got laboratory mentorship practice by using visit mentor, then at the tip of the year those health facilities were passed on the evaluation process, from those 62 health facilities 48 (77.2%) of them scored < 3 SLIPTA star levels and also the rest 14 (22.5%) scored ≥ 3 SLIPTA star level , which is indicated poor performance so this study is differ from study conducted in Lesotho 2012, at the start of the mentorship all laboratories were at the SLIPTA zero star rating. After the initial six weeks of mentorship, two of the three district laboratories had improved from zero to 1 (out of five) star,After 10 weeks of mentorship there was a major improvement in average scores (182.3; p = 0.034) with one laboratory achieving WHO-AFRO three out of a possible five star status and therefore the two remaining laboratories achieving a two star status. The reason behind this gap was having competent mentor; quality of training; appropriate budget and adequacy of laboratory staff (15).

Regarding to mentorship model our study indicated that 308 or 72.8% of the respondents stated that theywere not satisfy by current sub-city based mentorship modelthis means mentorsact aslike external visitorand during mentorship time they were not spend more time with mentee; so this study is differ from study conducted in Zimbabwe 2014 addressed the model of mentorship , they were assigned to one of three mentorship models based on programmatic considerations: Laboratory Manager Mentorship (Model 1, four laboratories); One Week per Month Mentorship (Model 2, four laboratories); and Cyclical Embedded Mentorship (Model 3, three laboratories). According to their conclusions Model 1 is bestbecause laboratory managers serve as like internal mentors andthey were full-time laboratory employees andable to provide mentorship on a continuous basis throughout the program. Perhaps the greatest advantage of this model is that it builds capacity at the grass-roots level(28)

According to mentor support our findings indicated that the mean score of the respondents were 4.7, which was below the minimum expected score or cut of value which is 6.Regarding to mentor support, from the total of 423 respondents, 114 (27%) of them mentioned that mentors meet regularly and frequently the staff and 123 (29.1%)respondents said that mentor spends more time with mentee during mentorship practice. 104(24.6%) respondents said that mentors well expressed during mentorship time. From the total of 423 respondents 170 (40.2%) mentioned that mentors met all staff but the rest of respondents gotonly quality officer or laboratory head when they moved for mentoring. In addition to this 146 (34.5%) respondents stated that mentors are wellpaid during mentorship practice, all this result tells us mentor support were poor or mentee were not satisfied with mentors this is differ from a research conducted in Europe 2019 explained that current practice of mentorship showed that overall, 179/317 (56%) laboratory professionals were satisfied with their mentor support because mentors spendadequate time with mentees and gave constructive feedback on work performance, well expressed or competent, good behaviour and if the mentee felt overburdened, they could not talk to their mentors(25).

7. Limitation

One of the limitations of this study couldn't gather information on the specific time because of Covid-19 pandemic illness and absence of previous studies conducted on this particular topic then again, This study was conducted only in public health facility so; it does not illustrate the private health situation.

8. Conclusions

The present study showed that majority of medical laboratories had poor mentee and mentor relationships, which was reflected by poor SLIPTA score. Main factors affected effective laboratory mentorship practice includes lack of staff commitment, lack of experience, and lack of accountability.

9. Recommendation

- MOH, Addis Ababa Regional Laboratory and EPHI will give Special attentionto selectmentors; this is a critical element in success of the mentorship program. Mentors can be drawn from experienced laboratory personnel available internationally or nationally.
- Health facilities managershould correct identified gap like lack of staff commitment, less experienced professionals andlack of accountability.Solving this problem will bring good SLMTA scoring in each health facilities. Beside this they should also give more emphasized to adequate budget, quality of training and staff motivationto get fruitful result on quality service.
- Health facility managers always should know effective mentorship become a key component of laboratory quality improvement program, especially those targeting accreditation.
- Regional laboratory should revised the current mentorship model to enhance the quality of laboratories and planned the frequency and length of site visits according to the size and scope of testing activities in the laboratory
- Mentors should exercise embedded mentorship practice in daily routines of laboratory activitywhich reduced the supervisory nature of the mentorship and encouraged peer-to-peer relationships to develop between the mentor and the laboratory mentees. This may have created an environment for the mentor to foster positive changes in the laboratory
- All Laboratory professionals should enhance their skill or QMS experiencebecause effective mentorship is also dependent on the mentee's skillsTherefore all stakeholder give due attention to establish effective mentorship practice, in order to improve the quality of medical laboratory services.

10. Reference

1.Yao K, McKinney B, Murphy A, Rotz P, Wafula W, Sendagire H, et al. Improving quality management systems of laboratories in developing countries: An innovative training approach to accelerate laboratory accreditation. American journal of clinical pathology. 2010;134(3):401-9.

2.Bozeman B, Feeney MK. Toward a useful theory of mentoring: A conceptual analysis and critique. Administration & society. 2007;39(6):719-39.

3.Barondess JA. On mentoring. Journal of the Royal Society of Medicine. 1997;90(6):347-9.

4.Benjamin JB. Mentoring and the art of medicine. Journal of Trauma and Acute Care Surgery. 1998;45(5):857-61.

5.Holmes Jr DR, Warnes CA, O'Gara PT, Nishimura RA. Effective attributes of mentoring in the current era. Circulation. 2018;138(5):455-7.

6.Ong J, Swift C, Magill N, Ong S, Day A, Al-Naeeb Y, et al. The association between mentoring and training outcomes in junior doctors in medicine: an observational study. BMJ open. 2018;8(9):e020721.

7.Ramanan RA, Taylor WC, Davis RB, Phillips RS. Mentoring matters: mentoring and career preparation in internal medicine residency training. Journal of general internal medicine. 2006;21(4):340-5.

8.Mothabeng D, Maruta T, Lebina M, Lewis K, Wanyoike J, Mengstu Y. Strengthening laboratory management towards accreditation: The Lesotho experience. African journal of laboratory medicine. 2012;1(1).

9.Gershy-Damet G, Rotz P, Cross D. Belabbes el H, Cham F, Ndihokubwayo JB et al. The World Health Organization African region laboratory accreditation process: improving the quality of laboratory systems in the African region Am J Clin Pathol. 2010;134(3):393-400.

10.Guzel O, Guner EI. ISO 15189 accreditation: Requirements for quality and competence of medical laboratories, experience of a laboratory I. Clinical biochemistry. 2009;42(4-5):274-8.

11.Buddeberg-Fischer B, Herta K-D. Formal mentoring programmes for medical students and doctors–a review of the Medline literature. Medical teacher. 2006;28(3):248-57.

12.Frei E, Stamm M, Buddeberg-Fischer B. Mentoring programs for medical students-a review of the PubMed literature 2000-2008. BMC medical education. 2010;10(1):32.

13.Straus SE, Johnson MO, Marquez C, Feldman MD. Characteristics of successful and failed mentoring relationships: a qualitative study across two academic health centers. Academic medicine: journal of the Association of American Medical Colleges. 2013;88(1):82.

14.Zerzan JT, Hess R, Schur E, Phillips RS, Rigotti N. Making the most of mentors: a guide for mentees. Academic Medicine. 2009;84(1):140-4.

15.Maruta T, Motebang D, Mathabo L, Rotz PJ, Wanyoike J, Peter T. Impact of mentorship on WHO-AFRO strengthening laboratory quality improvement process towards accreditation (SLIPTA). African journal of laboratory medicine. 2012;1(1).

16.Ochodo EA, Leeflang MM. Systematic reviews of diagnostic test accuracy for evidence-based diagnostic practice in Africa. African journal of laboratory medicine. 2012;1(1).

17.Petti CA, Polage CR, Quinn TC, Ronald AR, Sande MA. Laboratory medicine in Africa: a barrier to effective health care. Clinical Infectious Diseases. 2006;42(3):377-82.

18.Polage CR, Bedu-Addo G, Owusu-Ofori A, Frimpong E, Lloyd W, Zurcher E, et al. Laboratory use in Ghana: physician perception and practice. The American journal of tropical medicine and hygiene. 2006;75(3):526-31.

19.Carter JY, Lema OE, Wangai MW, Munafu CG, Rees PH, Nyamongo JA. Laboratory testing improves diagnosis and treatment outcomes in primary health care facilities. African journal of laboratory medicine. 2012;1(1).

20.Zeh CE, Inzaule SC, Magero VO, Thomas TK, Laserson KF, Hart CE, et al. Field experience in implementing ISO 15189 in Kisumu, Kenya. American journal of clinical pathology. 2010;134(3):410-8.
21.Bonini P, Plebani M, Ceriotti F, Rubboli F. Errors in laboratory medicine. Clinical chemistry. 2002;48(5):691-8.
22.Leatherman S, Ferris TG, Berwick D, Omaswa F, Crisp N. The role of quality improvement in strengthening health systems in developing countries. International Journal for Quality in Health Care. 2010;22(4):237-43.
23.Plebani M. Errors in clinical laboratories or errors in laboratory medicine? Clinical Chemistry and Laboratory Medicine (CCLM). 2006;44(6):750-9.
24.Ndasi J, Dimite L, Mbome V, Awasom C, Ngale E, Akuro S, et al. Decentralised facility-based training as an alternative model for SLMTA implementation: The Cameroon experience. African journal of laboratory medicine. 2014;3(2).
25.Ong DS, Zapf TC, Cevik M, Palacios-Baena ZR, Barać A, Cimen C, et al. Current mentorship practices in the training of the next generation of clinical microbiology and infectious disease specialists: an international cross-sectional survey. European Journal of Clinical Microbiology & Infectious Diseases. 2019;38(4):659-65.
26.Polansky L, Chester S, Warren M, Aden T, Kennedy P, Spivey-Blackford S, et al. Can mentorship improve laboratory quality? A case study from influenza diagnostic laboratories in Southeast Europe. BMC health services research. 2019;19(1):49.
27.Perrone LA, Voeurng V, Sek S, Song S, Vong N, Tous C, et al. Implementation research: a mentoring programme to improve laboratory quality in Cambodia. Bulletin of the World Health Organization. 2016;94(10):743.
28.Nzombe P, Luman ET, Shumba E, Mangwanya D, Simbi R, Kilmarx PH, et al. Maximising mentorship: Variations in laboratory mentorship models implemented in Zimbabwe. African journal of laboratory medicine. 2014;3(2).
29.Maruta T, Rotz P, Peter T. Setting up a structured laboratory mentoring programme. African journal of laboratory medicine. 2013;2(1).
30.Makokha EP, Mwalili S, Basiye FL, Zeh C, Emonyi WI, Langat R, et al. Using standard and institutional mentorship models to implement SLMTA in Kenya. African journal of laboratory medicine. 2014;3(2).
31.Masamha J, Skaggs B, Pinto I, Mandlaze AP, Simbine C, Chongo P, et al. Working toward a sustainable laboratory quality improvement programme through country ownership: Mozambique's SLMTA story. African journal of laboratory medicine. 2014;3(2).
32.Ethiopia C. Summary and statistical report of the 2007 population and housing census. Addis Ababa, Ethiopia: Federal democratic republic of Ethiopia population census commission. 2008:1-0.
33.Sisay A, Mindaye T, Tesfaye A, Abera E, Desale A. Assessing the outcome of Strengthening Laboratory Management Towards Accreditation (SLMTA) on laboratory quality management system in city government of Addis Ababa, Ethiopia. The Pan African Medical Journal. 2015;20.
34.Ogunyemi D, Solnik MJ, Alexander C, Fong A, Azziz R. Promoting residents' professional development and academic productivity using a structured faculty mentoring program. Teaching and learning in medicine. 2010;22(2):93-6.

8. Annexes

Annex I: Information Sheet (English Version)

Title of the project: Effectiveness of mentorship practice and associated factor among public health laboratories, in Addis Ababa, Ethiopia from January – July, 2020

Name of Principal Investigator: Tiumelisan w/gebriel

Organization: Addis Ababa University

Name of sponsor: Addis Ababa Health Bureau

This information sheet was prepared for Medical laboratory professionals who will be involved in project entitled above. I will tell them about the whole processes that have been undertaken in the study and requesting them to participate voluntarily.

Description and Purpose of the study

Laboratory mentoring programs can be an important vehicle to establish and solidify quality management systems and help laboratories achieve accreditation. This study will try to assess Effectiveness of mentorship practice and associated factor among public health laboratories. After that the study expected to fills identified gaps related to mentorship program and will prepare effective, nationwide, qualified, sustainable and well-structured mentorship programs. Not only this the finding of the study will plays a key role to policy makers like MOH and other concerned body like EPHI and AAPHREM which are directly relationship to this program.

Procedures: In order to undertake the above-mentioned study, written consent wills obtain from each study participants and they will be kindly asked to give required information related with the study. The analysis of the data will be done by principalinvestigator.

Time Allowed: There will be also provided 28 structuredfilled within 30minutes, out of 28questioners 7 of them will have socio demographic characteristic.

Risks and discomforts: There will have not any possible risks during examination. Please feel free to ask which is not comfortable to you.

Confidentiality: The information obtained during this study will be remained confidential. Disclosure of any of the data to third parties other than those allowed in the informed consent will not permit. Documented will remain confidential. To maintain confidentiality the investigator will keep records in locked cabinets and the results will be coded to prevent identification of the volunteers.

Right to Refuse or withdraw: I assure them that, they will be free to withdraw from the study at any time and that they will be not discriminated in any form for education or other services.

Whom to Contact: The following contact addresses will be given to contact investigators at any time.

Name of investigator: **Tiumelisan W/gebriel**Phone No: +**251912304756**

Email: tumegc@gmail.com

Department of Medical Laboratory Sciences, CHS, AAU, Tel. 0112 75 51 70

Sponsor Address: Addis Ababa Health Bureau

Name of advisors: MistireWolde (MSc, PhD, AAU)

AlemayehuNigatu(MSc, MPH, AAU)

Annex II: Informed Consent form (English Version)

I am informed fully in the language I understand about the aim of above mentioned research. I understood the purpose of the study entitled with “to assess the effectiveness of mentorship practice and associated factor among public health laboratories, in Addis Ababa, Ethiopia from January – October, 2020”. I have been well informed that I will be done examination. In addition they have been told all the information collected throughout the research process will be kept confidential. I understood my current and future medical services and others will not be affected if I refused to participate or with draw from the study.

Agree_____ Not agree_____

Therefore I give my consent freely for my participation in this study.

Code of participant: _____

Signature:_____ Date_____

Name of researcher:_____Signature:_____

Date_____

Annex III: Background Questionnaire for Mentee

Part 1: Socio Demographic Characteristics

1. Participant Code----------

2. Health institutions type:

1. Hospital2. He☐ center ☐

3. Health institution current SLMTA scoring

4. Gender 1.Male 2. ☐hale ☐

5. Mentor experience 1. 0-5year 2. Above 5 year

6. Qualification 1. Diploma 2.Degree 3. Masters

7. Training status 1. QMS 2.Mentoring 3.Internal audit 4.SLMTA 5. Documentation

Part 2:- Mentor support (Effectivenessscale)

Directions:

Thepurposeofthisscaleistoevaluatethementoringcharacteristicsof_____, who has identified you as an individual with whomhe/shehashada professional, mentor/menteerelationship.

Indicatetheextenttowhichyouagreeordisagreewitheachstatementlisted below. Circlethenumberthatcorrespondstoyourresponse. Yourresponses will be keptconfidential.

0 = Strongly Disagree (SD)1= Disagree (D)2= Slightly disagree (SLD)3= Slightly agree (SLA)4= Agree (A) 5= Strongly agree (SA) 6= Not applicable (NA)

0 1 2 3 4 5 ⑥

	SD	D	SlD	SlA	A	SA	NA
2.1 My mentorwasaccessible							
2.2 My mentor regularly and frequently met the staff							
2.3 My mentor spend more time with mentee							
2.4 Mymentordemonstratedcontentexpertiseinm							

y areaofneed?							
2.5My mentorwasapproachable communication.							
2.6 My mentor answered my questions satisfactorily (e.g., timelyresponse, clear, comprehensive even on answering phone calling).							
2.7 My mentor was helpful in providing direction andguidance on professional issues(managerial skill)							
2.8 My mentor acknowledged my contributions appropriately.							
2.9 My mentor suggested appropriate resources (e.g., experts, electroniccontacts, sourcematerials).							
2.10 My mentor challenged me to extend my abilities (e.g., risk taking, try a new professional activity).							
2.11 My Mentors meet all the staff when he came for mentoring							
2.12 My mentorsarewellpaid?							

Part 3: Questions for challenge ofmentorship practice

3.1 - Do you have adequate laboratory staff? 1. Yes 2. No

3.2- Do you have adequate budget for laboratory? 1. Yes 2. No

3.3- Do you have management support or reward for good performance? 1. Yes 2. No

3.4 -Do you have accountability to weak performance? 1. Yes 2. No

3.5 -Are you interested with current mentorship model (Sub-city based)

1. Yes 2. No if no why

3.6 -Are they laboratory staff committed to share the responsibility of QMS activity?

1. Yes 2. No if no why

አባሪ(Annex)V: የመረጃቅጽ(Information Sheet) የአማርኛውቅጂ(Amharic Version)

የፕሮጀክቱርእስ"አዲስአበባበሚገኙየመንግስትህክምናተቋማትውስጥየሚሰሩየህክምናላብራቶሪባለሞያዎችየላብራቶሪንአጠቃላይጥራትበማስጠበቅያላቸውአስተዋፆእናአሁንበሚተገበርበትሁኔታላይያሉክፍተቶችንለይቶለማውጣትከተወሰኑካልማስወቅ

የዋነኛተመራማሪውስም፡ ጥዑመልሳንወ/ገብርኤል

ተቋም፡ አዲስአበባዩኒቨርስቲ

የእስፖንሰሩስም፡ የአዲስአበባጤናቢሮ

ይሄየመረጃቅጽከፍብለብርእሰበተመለከተውፕሮጀክትውስጥተሳታፊለሚሆኑየህክምናላብራቶሪባለሞያችየተዘጋጀነው። በበጎፍቃደኝነትእንዲሳተፉበመጠየቅእናበጥናቱስለተከናወነውመሥሪደትየምንነግራችሁይሆናል።

መግለጫእናየጥናቱአላማ

"በኢትዮጵያአዲስአበባበሚገኙየመንግስትህክምናተቋማትውስጥየሚሰሩየህክምናላብራቶሪባለሞያዎችየላብራቶሪንአጠቃላይጥራትበማስጠበቅያላቸውአስተዋፆእናበላብራቶሪሚተገበርበትሁኔታላይያላቸውአተያይምንእንደሚመስልማስወቅሰሆንበዚህጥናትውቅትየተገኙመረጃዎችሚስጥራዊእንደሆኑይቀጥላሉ። መረጃከተሰጠበትስምምነትውስጥከተፈቀደላቸውአካላትበስተቀርለማናቸውምሶስተኛወገኖችመረጃይፋመደረግአይፈቀድም። ሪከርዶችሚስጥራዊእንደሆኑይቀጥላሉ። ሚስጥራዊነትንለመጠበቅተመራማሪውሪከርዶቹንበሚቆለፉመደርደሪያዎችውስጥየሚያስቀምጣቸውሲሆንውጤቶችምበበጎፍቃደኞችስምየትእንዳይታተሙበኮድምልክትይደረግባቸዋል።

የሚጠበቁት፡ ከጥናቱበማንኛውምጊዜመውጣትእንደሚችሉነጻነቱእንዳላቸውእንዲሁምመረጃውለትምህርትወይምለሌላአገልግሎቶችማገልገያእንደሚደረግባችሁአረጋግጥላችሁለሁ።

ማንንማግኘትይፍልጋሉ፤ የሚከተሉትየግንኙነትአድራሻዎችበማንኛውምጊዜተመራማሪውንማግኘትይችላሉ።

የተመራማሪውስም፡ ጥዑመልሳንወ/ገብርኤልየስልክቁጥር፡ 09 12 30 47 56

ኢሜል፡ tumegc@gmail.com

የአማካሪውስም፡ ሚኪጥረዌልዴ(ኤምኤስሲ፣ ፒኤዲ፣ አአዩ)

አለሙሁንጋቱ(ኤምኤስሲ፡ ኤምፒኤችአአዩ)

አባሪ (Annex)VI: የስምምነትቅጽ(Consent form) የአማርኛውቅጂ (Amharic version)

መሳለሙበምረዳወቋንቋከፍብለስለተመለከተውጥናታዊስራአላማመረጃዎችተሰጥቶኛል። ርእሱ"በኢትዮጵያአዲስአበባበሚገኙየመንግስትህክምናተቋማትውስጥየሚሰሩየህክምናላብራቶሪባለሞያዎችየላብራቶሪንአጠቃላይጥራትበማስጠበቅያላቸውአስተዋፆእንዲሁምአሁንበሚተገበርበትሁኔታላይያሉክፍተቶችንለይቶለማውጣትከ

ተዉኢካልማስወቅመሆኑንከጥናቱአላማዘረዳቻለሁ ፡ በተጨማሪምበጥናትሂደትወስጥበማሉየ ተሰበሰበሚጃዎች ንሁሉሚስጥራዊበመሆንእንደሚጠበቁተነ ግሮኛል፡ ፡ የ ወቅቱእናየ ወደፊትየ ህክምና አገልግሎቶችከጥናቱበወጣወይ ምኣለማስተፍፍላጎ ቱባይኖረኝተጸኖእንደሚደርስብኝተረደቻለሁ ፡

እስማማለሁ________ አልስማማም________

ስለዚህበዚህጥናትላይእንደሳተፍበነ ጻነ ትፍቃዴንሰጥቻለሁ ፡

የ ተሳታፊወኮድ፡ ________________

ፊርማ __________ ቀን፡ ________________________

የ ተመራማሪወስም፡ ____________________ ፊርማ ________________

ቀን፡ ________________________

AnnexIV: Declaration

Title of Project: Effectiveness of mentorship practice and associated factor among public health laboratories, in Addis Ababa, Ethiopia from January – July, 2020. I the undersigned, declare that this MSc research project is my original work. It has not been presented for a degree in any other University. False statements could be cause for invalidating this research project and may lead to other administrative or legal action.

Principal investigator: Tiumelisan w/gebriel

Address: Department of Medical Laboratory Sciences, AAU

Signature: _____ Date: _____

Advisors: MistireWolde(MSc, PhD)

AlemayehuNigatu(MSc, MPH)

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Signature: _____ Date: _____