ADDIS ABABA UNIVERSITY

College of Health Sciences, School of Medicine

Department of Health Sciences Education

Identifying challenges for faculty & non-faculty clinical supervisors in providing effective practical supervision of Radiology Technology students at CHS, AAU

By: Alemayehu Nigussie

A thesis to be submitted to Department of Health Science Education for the partial fulfillment of Master's Degree in Health Science Education

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Abstract

This study, conducted in Addis Ababa University, College of Health Sciences, Department of Medical Radiology Technology was designed to identify challenges faced by faculty and non-faculty clinical supervisors in providing effective practical supervision of Radiology Technology students at CHS, AAU. The study aims to contribute possible recommendations and ideas for improvement of the quality of teaching at practicum sites. Qualitative research approaches were used. In this study a total 16 participants (9 Faculty supervisors and 7 Non-faculty supervisors) were selected through purposive sampling techniques and participated in the in-depth interviews. Data analysis was conducted using thematic analysis. The analysis of interview responses identified four main themes which form the focus of discussion: presence of supervisory guidelines and training, support from administrative bodies, appropriateness of clinical practical site, and commitment of clinical supervisors. The findings indicate that clinical supervision was given less attention than the theoretical academic curriculum. The outcomes of the study also draw attention to the concerned bodies on fulfillment of the necessary requirements for the faculty and non-faculty supervisors in order to obtain the benefits of clinical supervision.

Keywords: Clinical supervision, faculty supervisors, non-faculty supervisors, clinical practice, challenge, Radiologic Technology students.

Contents

Abbreviations

AAU- Addis Ababa University

CHS- College of Health Sciences

BSc- Bachelors of Science

PhD- Doctor of Philosophy

IRB- Institutional Review Board

FP- Faculty Participant

NFP- Non-faculty participant

1. INTRODUCTION

1.1. Background

The Radiologic Technology field of study is highly technology dependent. As technology is quickly advancing in this field, teaching both theoretical and practical approaches are important in order for students acquire the required competencies. It is therefore important to provide students with close clinical supervision at their clinical sites. In Addis Ababa University College of Health Sciences Department of Medical Radiologic Technology we have two types of clinical supervisors. One type of clinical supervisor is AAU faculty instructor (faculty supervisor). The second type of clinical supervisor is practicing Radiologic Technologists employed by the Hospital (non-faculty supervisor). Both faculty and non-faculty supervisors play an essential role in providing quality clinical teaching. Most of this clinical supervision takes place in affiliated Public Hospitals in order to meet the requirement of the Bachelor's Radiologic Technology program at CHS, AAU. Therefore, for clinical attachments of Radiologic Technology students, faculty supervisors are assigned from the Department of Medical Radiologic Technology and non-faculty supervisors are from the affiliated health institutions to which students will be assigned for clinical practice. The department of Medical Radiologic Technology has four year program and the clinical practice is carried out starting from second year second semester to the end. However the implementation of clinical supervision is widely perceived not to meet expected standards. As one of the faculty member in the department of Medical Radiologic Technology; I have witnessed that the clinical supervision issue has been agenda on the department meetings for long period of time. The idea for improvement of challenges associated with clinical supervision has not yet been helped to curb the challenges as it has not been supported by research. So, it requires research for identifying challenges of supervision to contribute to possible recommendations and ideas for improvement of quality of teaching at practical site.

1.2. Statement of the Problem

Clinical practice is a major part of learning in Radiologic Technology because it requires hands on practice to be able to do what students taught theoretically. During their clinical practice students need to be supervised to develop their knowledge, skills and attitudes. My colleagues and I have identified a number of challenges we face as instructors and supervisors at practical sites. Nevertheless, there has not yet been research (published) conducted in Ethiopia about challenges of effective supervision in Radiologic Technology Program.

1.3. Purpose of the study

The purpose of the study is to identify challenges with effective supervision by faculty and non-faculty supervisors of Radiologic Technology students. It is hoped that the findings from the study will contribute to possible recommendations and ideas for improvement of quality of teaching at practical site.

1.4. Research Questions

1- How do Radiology Technology faculty members at CHS AAU describe challenges they face when supervising their students in clinical placements?

2- How do non-faculty members at CHS AAU affiliated hospitals describe challenges they face when supervising AAU Radiologic Technology students in clinical placements?

1.5. Significance of the study

High quality clinical supervision is essential to ensure that Radiologic Technology Students acquire the necessary skills and competencies to function as effective Radiologic Technologists. In Ethiopian context there has not yet been any research (published) conducted about challenges in providing effective clinical supervision in Radiology Technology Program.

Therefore, this study is significant as it has identified challenges of clinical supervision and will be able to improve and strengthen practical teaching in the department of Radiologic Technology and related fields.

The findings from this study will be valuable to the department of Radiologic Technology as well as related departments in developing better practice and tools for effective supervision of clinical practice. The study will also provide information to inform future research in this area.

2. LITERATURE REVIEW

It is possible to find considerable literature on clinical supervision in professions such as Psychology, Psychotherapy, Social Work, Medicine, Nursing and Midwifery but there is little of substance in Radiologic Technology. Therefore, this literature review is aimed to search for clinical supervision in related to multidisciplinary fields.

According to Kilminster and Jolly (2000) clinical supervision is mentioned as it is probably least studied, argued and developed aspect of clinical teaching.

Definitions of Clinical supervision

Literatures indicate that definitions of clinical supervision vary. Moreover, reflective practice is usually linked with clinical supervision although the processes are different (Wright, 2012). A review of evidence reveals that the inconsistency of definition makes broad view of findings challenging.

According to Lyth (2000) "*Clinical supervision is a support mechanism for practicing professionals within which they can share clinical, organizational, developmental and emotional experiences with another professional in a secure, confidential environment in order to enhance knowledge and skills."*

Supervision is also defined as *'The provision of guidance and feedback on matters of personal, professional and educational development in the context of a trainee's experience of providing safe and appropriate patient care.'* (Kilminster et al. 2007).

As it is described in the definitions of clinical supervision, there are various contextual meanings and it has a paramount importance in enhancing knowledge and skills of the supervisee

(students) and their working relationship and experience sharing with other professionals in their practice. It is also mentioned as a process of delivering guidance and feedback.

Clinical supervision is a component of clinical practice for multidisciplinary health science studies across the world. It has been understood in many part of the world as element of professional practice for several years. The role of clinical supervision takes account of not only professional but also assessment which is having responsibility in ensuring accountability for patient care (Clouder& Sellers, 2004).

The importance of clinical supervision has been taken as a safe environment for students under supervision for practicing within the health care system and advancing the quality of care (White, 2017).

According to Copenhaver (2018) the clinical supervisor improves ones clinical skill by engaging in the process of supervision of students. Evidences revealed improved clinical skills of students being supervised by well-trained clinical supervisor than those students who did not receive clinical supervision.(Bradshaw, Butterworth, & Mairs, 2007).

A study conducted by McKellar and Graham (2017) tried to recognize the best practice method to clinical supervision in midwifery field. In Australia, the field of midwifery is rooted in the idea that clinical supervision is crucial to ensure that students provide proficient care for the patients. Likewise review of literature demonstrated that a collaborative approach is required with an emphasis on partnership and mentorship relationships.

Pack (2012) contrasted the perceptions of clinical supervision among social work supervisors and students. Although they had same perspectives, they differed on the purpose that supervisors saw supervision as way to guarantee safe care delivery and students trusted it to be a safe environment to practice individual activity (Pack, 2012).

Skills and qualities of effective supervisors

According to Williams and Webb (1994) radiography students deliberated the importance of their supervisors' teaching skills, supervision techniques, personality and professionalism as crucial determinants. Therefore, effective supervisors guide their students on discharging patient care in responsible manner and give chance for their students to carry out procedures accordingly under close follow-up through giving proper direction and constructive feedback.(Cote, 1993).

A study by Watkins (1995) emphasized on the characteristics of effective supervisors as *empathetic, supportive, flexible, instructive, knowledgeable, interested, attractive, interpretative,*

respectful, focused and practical. On the contrary the characteristics of ineffective supervisors are indicated as *Rigid, low empathy, low support, failure to consistently track supervisee concerns, failure to teach or instruct, being indirect and intolerant, being closed, lacking respect for differences, being non-collegial, lacking in praise and encouragement, being sexist, and emphasizing evaluation, weakness and deficiencies*. (Watkins, 1997)

Effective clinical supervisors are distinguished as to reassuring communication between supervisor and student; having courage in clinical teaching; well prepared; prompting good leadership; being punctual.(Sloan, Donnelly, & Schwartz, 1996).

Brunero and Stein-Parbury (2008) conducted a study concerning clinical supervision as being an important approach to support all nurses, as well as a process to increase quality of patient care delivery and promote continuous professional development. In addition they explained that clinical supervision delivers collaboration and reduces anxiety for nurses as means of encouraging professional responsibility and accountability.

Effective clinical supervision employing reflective practice enforces health professionals to utilize their knowledge in order to enhance their skills, which leads to better practice, reduced exhaustion and increased retention(Tomlin & Scott Heller, 2016).With regard to supervisors, supervisor trainers recognized provision of guidance, offering a role model and feedback as essential to effective supervision.(Keller, et al. 1996).

According to Hirons and Velleman (1993) supportive supervision measures taken by both supervisors and supervisees incorporates *direct guidance on clinical work (trainees found it more helpful if they were encouraged to give their opinion early); joint problem solving; reassurance (not commonly given) and theory practice linking*. It is also described that supervisors persistently valued feedback as more helpful than the opposing groups.

It is discussed that effective supervision is dependent on the supervisor's knowledge, skill, attitude, passion to teach, commitment, responsibility and accountability. The same challenges are encountered in the department of Medical Radiologic echnology, CHS, AAU to conduct effective supervision which is needed to be researched starting from awareness to what effective clinical supervision look like to commitment, passion to teach, clinical skill & knowledge to effectively supervise students in practical sites.

3. OBJECTIVES

3.1. General objective

The objective of this study is to identify challenges with effective supervision for both faculty and non-faculty supervisors in clinical practical teaching of Radiologic Technology students.

3.2. Specific Objectives

- To identify challenges with clinical supervision experienced by faculty supervisors during clinical practice of radiology technology students.
- To identify challenges with clinical supervision experienced by non-faculty supervisors during clinical practice of radiology technology students.

4. METHODOLOGY

4.1. Study Area

The study was carried out in College of Health Sciences, School of Medicine, Department of Medical Radiologic Technology and selected affiliated public Hospitals (Tikur Anbessa Specialized referral hospital, St. Paul Hospital, and Yekatit 12 hospital). Medical Radiologic Technology Department is one of the oldest departments of the twenty two departments in School of Medicine, has been a program for approximately fifty eight years. Currently there are about 19 instructors and Year I to IV about 134 BSc regular students enrolled in the program of Medical Radiology Technology.

4.2. Study setting

In-depth interviews with faculty supervisors were conducted in the department of Medical Radiologic Technology, CHS, AAU, meeting room which has minimal distraction for discussion. Interviews with selected non-faculty supervisors were conducted in their respective Hospitals.

4.3. Study design

Qualitative Method using in-depth interviews were used (Boyce & Neale, 2006).This method was preferred to obtain rich and deep information from the participants.

Generally 8 open ended semi-structured in-depth interview questions were developed in relation to challenges in clinical supervision of Radiologic Technologic students to stimulate discussion. The in-depth interview questions were adjusted to follow the flow of the discussion.

The in-depth interview sessions were conducted in Amharic language and transcribed and translated into English. As the author is one of the instructors in the department it was not being appropriate to facilitate the interview with faculty members because of position of power related to colleagues. Therefore, the author recruited interviewer from post graduate program PhD candidate from School of Medical Laboratory Sciences were facilitated the in-depth interview.

4.4. Study Population

Faculty members of Medical Radiology Technology who are currently involved in supervising Radiologic Technology students at clinical practical sites. There are about 19 faculties.
Non-faculty members (Radiologic Technologists) who are working in three public hospitals affiliated to College of Health Sciences. Those are: Tikur Anbessa Specialized referral hospital 26 technologists, St. Paul Hospital 20 Technologists, and Yekatit 12 hospital9 technologist. In sum there are 55 technologists work in those hospitals.

4.5. Sampling procedure

For Faculty members

Faculty members in the Department of Medical Radiologic Technology were selected for in-depth interview by purposive method involving senior and junior faculties who are engaged in supervision of Radiologic Technology students until the required information is gained. This has helped to gather adequate and in-depth information using their experiences.

For non-faculty members

Non-faculty members from three CHS affiliated hospitals (Tikur Anbesa Specialized Referral Hospital, St. Paul Hospital and Yekatit 12 Hospital) who are in charge of supervising students in each Hospital were selected by purposive method for in-depth interview in their respective departments.

The flow of in-depth interviews was continued until saturation happen. To confirm saturation the interview was gone beyond point of saturation to make sure no new additional insights emerge in the next few interviews.

4.6. Data Collection

After having IRB approval to conduct the study, in-depth interview with faculty members at the department of Medical Radiologic Technology and with non-faculty members from selected affiliated hospitals were undertaken. In order to collect data from participants' information sheet, consent form and interview guide were prepared based on reviewed literature.

Accordingly 9 faculty & 7 non- faculty participants having different experiences from 1 year and 6 months to 12 years were participated on the in-depth interviews.

4.7. Data Analysis

The in-depth interviews were conducted in Local language (Amharic) and the discussions were digitally recorded and the data was transcribed and translated into English by principal investigator. The translation without personal identification was reviewed by senior staffs from School of Laboratory Sciences who had experience in research and able to speak both languages. In the case of difference, the recorded discussions were reviewed until it was believed to be matching.

Thematic analysis was used. After the interviews transcribed and translated, the data was coded line by line to bring out the essence and meaning of the data that participants have provided. The codes were collected to make group patterns observed in the data into meaningful categories. Finally, the interrelationships among the various categories were looked and then the themes developed. (See –Appendix VIII).

4.8. Ethical Issues

Ethical approval was obtained from Research Ethics Committee of CHS, AAU. The participants were informed about the purpose of the study as this research interviews are purely for academic purposes. Written informed consent of each participant was obtained before data collection. Personal identities were not disclosed.

4.9. Knowledge Translation

The finding of this study will be disseminated to the College of Health Sciences department of Health Science Education and Medical Radiologic Technology because the study will have an input to both College of Health Sciences, AAU and department of Medical Radiology Technology to improve the clinical supervision experience of faculty supervisors and non-faculty supervisors in the selected affiliated hospitals. In addition to this, the study will also provide base line information for researchers. Finally it will be submitted to peer-reviewed journal for publication.

5. RESULTS

In this study a total of 16 participants (9 of them are Faculty supervisors and 7 Non-faculty supervisors) have participated in the in-depth interviews. The participants have different experiences and they have been in practice from 1 year and 6 months to 12 years. The in-depth interview has focused on identifying challenges faced by faculty and non-faculty clinical supervisors while supervising the Radiologic Technology students at CHS, AAU.

The themes were identified as: presence of supervisory guidelines and training, support from administrative bodies, appropriateness of clinical practical site and commitment of clinical supervisors. In addition, there are categories under each of the main themes.

Theme 1- Presence of supervisory guidelines and training

Under this main theme categories identified are – presence of supervisory guidelines and availability of training on clinical assessment and feedback.

1.1- Presence of supervisory guidelines

Most of the faculty participants mentioned that there is no guideline that is prepared for the clinical supervision assessment and feedback. They indicated that the absence of the clinical supervision guideline has made supervision challenging. To take from the words of the participants:

> "*....there is no guideline from the very beginning. The absence of well organized guideline both for clinical supervision feedback and assessment is one of the challenges."***FP1**

> "*We do not have a prepared guideline.....this has made our effort to know how to act more difficult*." **FP2**

The participants also stated that in the absence of this guideline, clinical supervisors are not aware of their roles in the clinical supervision process. So that they seriously considered that the assessment is given on subjective basis and which had an impact on their ability to supervise well. To this end one of the participants expressed that:

"*The absence of teachers' supervisory role at clinical practice made us not to know where to start. As a result, it can eventually lead us to totally stop working."***FP2**

Similar participant further explained:

"...I believe that the effort to provide a constant and similar service to all students at the same level would be difficult so as long as there is no written guideline and obligatory framework." **FP2**

The same idea was also propagated by the other participants stressing the difficulty of lacking supervisory guideline. In line with this, the FP5 has explained that:

*"First and for most there must be a clear guideline and standardized assessment tool as things most of the time are subjective in the absence of these elements.…anyone in a hospital assesses students at practical sites in his own way. And this would not only be eventually fair to equally evaluate students while there is not a clear goal set and cannot also meet its target."***FP5**

The same notion was also held by NFP2 who said that:

*"... So, the clinical supervision assessment and feedback would be more constructive to all parties if the situation in all institutions in this regard could be in all aspects uniform."***NFP2**

Even though absence of a clear guideline was a challenge, participants have employed their own strategies to overcome the problem. For instance, one of the non-faculty participants mentioned that:

"...we teach using our own methodology because there is no formal guideline and checklist." **NFP5**

On the other hand, another participant emphasized that apart from lack of supervisory guideline the limited role of the faculty supervisor is another concern. To alleviate such concern a participant has suggested that:

*" ……when a given instructor goes to practical area, his/her prior task is limited and does not have another role apart from taking attendance and/or saying something that enables him\her demonstrate his\her skills. Rather, an opportunity to share his/her practical skills should be created"***FP9**

Furthermore, the absence of guideline and standardized assessment tool could result in multiple problems. First, it could be difficult to reach the goals and objectives of the clinical practice. Second, the question regarding to what extent students should acquire the skills cannot be easily answered. Thirdly, the duration of time they should work which is not well defined could also be another problem. In related view participants have expressed that:

...it is to some extent hard to practically know how the students did it, gained the knowledge that they are expected to equip with, and would do in the future for we have not been working based on well prepared guideline.(**FP2& FP3)**

As far as assessment tool is concerned, there is still a problem on this issue. To illustrate this concern one of the participants has raised that:

*"In the absence of a clear guideline and standardized assessment tool, we all assess them depending on our own scope or knowledge and this, inevitably affects students result...students in some hospitals can benefit more while others in other hospitals can be hurt, so I consider the absence of a standardized assessment as a critical challenge."***FP5**

1.2- Availability of training on clinical assessment and feedback

Almost all participants explained that they didn't take training specifically on clinical supervision assessment and feedback. However, some participants described that they had general training that help to deliver theoretical knowledge on student evaluation and assessment which doesn't include the practical teaching.

One of the participants expressed that:

"I take effective teaching training right I got employed in 2012G.C. The training is of theoretical training, it does not have clinical supervision assessment and feedback system on how to supervise and approach students." **FP1**

Another participant added that:

> *"Specifically, there is no clinical supervision assessment and feedback training that I have taken, but I have taken generalized students evaluation and assessment training in Higher Diploma Program and effective teaching methodology training"* **FP5**

In similar terms one of the participants explained that:

> *"I didn't take any training particularly clinical supervision. But I have participated in a generic pedagogical training is as of one the staff of the colleges. There is no training program that is specifically dedicated to clinical supervision."* **FP8**

The above statement was supported by NFP3 who expressed that:

> *"I didn't take any training regarding clinical supervision. We are delivering from what we know before."***NFP3**

It can be learnt that without having adequate and relevant training it is difficult to undertake any clinical supervision assessment and feedback. Consequently there are difficulties that could be encountered while undertaking the clinical supervision. To illustrate this one of the participants stated that:

> *"I can't deliver the right thing while I do not know how to supervise and what feedback by itself is? All about for there is no training on clinical supervision assessment and feedback."***FP1**

The same participant added that:

> *"In the first place, you cannot supervise unless you know what clinical supervision by itself is in general through learning and training."***FP1**

The above argument also shared by a participant in the following way.

> *".....and this in turn has affected our supervision works negatively for us; as supervisors could not be equipped with the required knowledge."***FP6**

On the other hand, another participant emphasized that the lack of training on clinical supervision has another repercussion. This problem is related to the inability to undertake the clinical supervision to the extent that has to be. In the words of NFP7:

> *"I do not have a better knowledge, any further training and career development on clinical supervision. This makes the clinical supervision not to be effective."***NFP7**

In addition to the ideas discussed in the above paragraph, we have also discussed with participants about issues related to the career development. There is also a new insight, developed through the interview processes. Thus it was mentioned that:

> *"… I think this is resulted from the influence of low academic staff career development. Because, if the staff members could keep upgrading their respective fields of specializations through continuous learning, they would perform better thereby capacitate their teaching and knowledge transferring skills. As a result, this is creating a negative impact on our students."***FP6**

Even another non-faculty participant supported the preceding idea and said:

> *"There is no training in evaluation and feedback… This will reduce my teaching desire because I fear that students who come to the point where I am not able to teach more about my career. So I may not be responsible for the students and teach less."* **NFP6**

Theme 2- Support from administrative bodies

Under this main theme categories identified are – availability of transportation service, availability of imaging modalities &provision of recognition.

2.1- Availability of transportation service

Availability of transport service is important in facilitating clinical supervision activities. The services could help in arriving on time, reducing personal expenses and enhancing convenience. When it comes to the real experience of the participants it was mentioned that:

"A supervisor has to go with the students to various distant and scattered hospitals. This requires devising effective transport system for the purpose as our department does not have its own transport service...if there is no transport service, it is difficult to persistently go at the expense of someone else." **FP2**

As far as transportation is concerned, one participant expressed that:

"The main reason that takes the lions' share in this regard is the challenge related to transportation i.e. most of the time we pay the fee from our own pocket." **FP6**

To put the transportation challenge in a more explicit way, one of the participants stated:

"…instructors are still paying transport fees from their own pocket just to go to supervise. An instructor can be assigned in more than one practical area, so he\she is expected to go to these places in the presence of this challenge." **FP9**

From the preceding paragraphs it can be observed that participants experienced inadequate support from the administrative bodies in terms of transportation service to clinical supervisors. This is a big challenge to go to the practical sites where students are placed at different clinical sites. As a result the clinical supervision could not be effective.

2.2- Availability of imaging equipment

In relation to availability of imaging modalities it was found that most of non-faculty participants revealed that less attention is given to the imaging modalities those are found in their respective Hospitals. In addition to the inadequacy of the imaging modalities there is also a problem related to timely maintenance of the equipment. In related terms one of the participants described that:

"... For example if you see it in the current time in our Hospital it is only one x-ray machine which is working. Consider the largeness of the tertiary hospital …the patient flow… how much it is bulky so that all of the other machines are entirely down, coupled to this there are students. It is totally impossible to bring your students in every patient and discuss …" **NFP3**

Supporting the preceding ideas, one of the participants mentioned that "… timely maintenance is not done to the existing equipment…" (NFP1). Similarly, another participant added that "….the

numbers of patients we serve in day to day basis are not comparable with equipment we have." (NFP4)

Given that the availability of equipment are inadequate there are additional challenges faced by the non-faculty supervisors. Among the challenges one is time constraint to teach students and the other one is failure to provide clinical service to patients due to the load they have. In addition, there is a big challenge that arises due to the high expense of the equipment that constrains students not to practice through trial and error. This idea is explained by one of the non-faculty participants in such a way that:

> *"…For instance, if we let a student to do whatsoever he\she wants when he\she attaches a CT scan, he\she may touch a forbidden part of the machine accidentally, hence let the software get corrupted. And that may force that hospital to incur additional cost. On top of that there is only one machine. So, there is a limitation of resource, shortage of time…"* **NFP2**

To explain how much even the department is challenged on teaching students, the same participant stressed that:

> *"It is a department that applies very costly, up to date and more sophisticated technologies…"***NFP2**

As far as the distribution of the imaging equipment is concerned, there is still a problem on this issue. To illustrate this concern one of the participants has raised that:

> *"… the machines we use are not found only in government hospitals that there are also situations that we are forced to use private hospitals … because they are very expensive."* **FP6**

Despite the fact that there are inadequate imaging equipment, participants have suggested due attention to be given by the concerned bodies who have to consider additional imaging modalities that are required for the clinical service and practical teaching. With regards to this suggestion one of the non-faculty participant forwarded:

"If our department is equipped with the necessary equipment such as X-ray, CT-scan and MRI with sufficient amount that would be convenient for us to teach students and minimize the number of patients on each modality." **NFP1**

Furthermore, the challenge in relation to inadequate imaging equipment is coupled with shortage of necessary equipment in the skill lab. It was presented that lack of access to the necessary imaging modalities and shortage of materials in the skill lab has affected the clinical teaching before students are going to the actual practical sites. In the words of one of the participants:

"We don't have a skill lab which is well organized with the necessary materials. Currently, we have only one ultrasound in our skill lab and we are trying all what we can to demonstrate by using it though we have never ever been successful as compared to our desire." **FP6**

2.3- Provision of recognition

Among the administrative support, provision of recognition is one of the important elements. If clinical supervisors are given due recognition they will be motivated to deliver what is expected of them. To observe the existing provision of recognition one can see the statement provided by one of the participants below. It stated that:

"To begin with there is no a system that acknowledges good performers, which in turn results in discouraging good performers." **FP1**

The same participant emphasized that:

*"… no one has given recognition to the services that we give under unfavorable environment to quite many students at various hospitals. The higher officials in our college did not giving due recognition to what we do."***FP1**

In addition another participant even further expressed the neglect that the department is confronted with. In his own words:

"As for me, the department is highly neglected. It is a department which does not have master's program. The very saddening issue in this regard is that this gap could not be

filled irrespective of the repeated requests made as a department. I believe that this is administrative problem." **FP6**

Same participants emphasized the effects of little recognition and stated that:

"Lack of support in our career development not only affected our supervision work but also demoralized us psychologically. The motivation I have had when I was a fresh employee and that of now are quite different due to lack in career development. My motivation when I was fresh was by far better than that of today." **FP6**

One of the signs for the existence of recognition in practical teaching is the availability of memorandum of understanding between the College of Health Sciences, AAU and the Hospitals. In fact this could be beneficial when it is actively applied. It is when there is agreement among the institutions that will guarantee the practical teaching. In the absence of this agreement then one of the partners may refuse to accept students for practical teaching. Related to this view, one of the participants explained:

"There is no memorandum of understanding at the department level which officially signed with the hospitals that grant the practical teaching legal ground to take part and this is the first challenge." **FP9**

On similar topic another participant mentioned:

"…our hospital focuses on providing services to patients, so there is a tendency to resist in accepting students when they are assigned and this refusal comes to the department level." **NFP7**

Theme 3- Appropriateness of clinical practical site

Under this main theme categories identified are: suitableness of clinical environment to teach students, practical teaching in busy clinical sites, and existence of integration.

3.1- Suitableness of clinical environment to teach students

Among appropriateness of clinical practical site, suitableness of the clinical environment is one of the essential components. It is important in facilitating clinical supervision processes. In

relation to suitableness of the clinical environment it was found that most of participants described that it is not favorable to teach. In related terms one of the participants expressed that:

> *"The clinical environment is not conducive to observe practicing students thereby giving constructive feedback to the students. Therefore, it is difficult to demonstrate to students in such a narrow X-ray room because it would be highly crowded along with the supervisor and the radiologic technologist."***FP1**

The above argument also shared by a participant in the following way.

> *"However, the majority of them do not want to have many students under their supervision for there is no enough space."***FP7**

The same idea was also echoed by the other participants stressing the difficulty that clinical supervisors faced in unsuitable clinical environment. In line with this, FP3 has explained that:

> *"The setup is hectic as opposed to the class room in their schools...for instance it is impossible to ask for ample time to explain the case of a given patient... the clinical environment is very challenging."***FP3**

Supporting the preceding ideas, one of the participants mentioned that the clinical site is "....highly crowded, it gives no room either to give or to get any feedback" (FP1). Similarly, another participant added that "The hospital is congested to teach students while serving lots of sick people. In such a situation, it is very difficult to effectively supervise the students."(NFP7)

In similar terms participants have emphasized that:

> "*... it is not comfortable to even supervisors to go and explain things to students as practical areas are scattered."* **(FP6 & FP7)**

To put the challenges in relation to unsuitableness of clinical environment in a more explicit way, participants have stressed that:

> *"...it may, to somehow make students unable to see a given case to the extent required."***FP3**

> *"...students might not sufficiently get a chance to practice in order to achieve their* goals."**NFP4**

In addition, the challenge of the suitableness of the clinical environment is coupled with the views of the professionals towards the frequency of visit of clinical supervisors. In the words of one of the participants:

> *"…both Radiologic Technologists and Radiologists working in the hospital believe that it is enough if the faculty supervisors visit them once or twice a week, so the environment is not favorable for clinical supervision."* **FP1**

3.2- Practical teaching in busy clinical sites

Most of the non-faculty participants described that the clinical sites are full of activities. For this reason, it is difficult to teach students by giving them adequate time and letting them practice on the cases. In related terms participants explained that:

> *"We have shortage of time because there are many patients. Therefore it is difficult to teach students."***NFP1**

Similarly other participant supported the preceding idea and emphasized that:

> *"Regarding the students they have no any alternative except observe standing because we have burden like this."* **NFP3**

Supporting the above argument, one of the participants mentioned that "…the number of students assigned…the patients treated at daily basis are many" (FP1).Similarly, another participant added that "It is difficult to properly explain and assess at those days with many patients." (FP7)

Other participants emphasized on the effects of practical teaching in busy clinical sites and explained that:

> *"Because of the larger number of patients we have, we are forced to do things quickly; instructing students to do things but the communication among us will be very short."***NFP3**

> *".... I only think to work fast and see off the gathered patients herein. But I do not normally think to teach well and show the students well who comes herein."* **NFP4**

As far as responsibility is concerned, there is still a problem on this issue. To demonstrate this concern one of the participants has raised that:

*"For instance, my responsibility is not only following students … but also I have many other tasks...."***NFP2**

Similar participant further stressed that:

"….there are responsibilities that we should prioritize. For example, I do not have to disappoint or hurt a client just to go to give feedback to my students...there is no special time allotted for this specific purpose." **NFP2**

3.3- Existence of integration

One of the important factors for the appropriateness of clinical practical site teaching is integration of academic and clinical service. It could help in having smooth relationships and mutual understanding amongst the professionals and clinical supervisors. In similar terms, one of the participants explained that:

"There is no integration between academicians and experts at the practical area, hence they can't be easily understood on how to teach students. As a result, it prevents students from getting supervision." **NFP7**

Moreover, the challenge in relation to lack of integration is coupled with the judgment of the Radiologic Technologists at the practical sites. It was stated that when faculty supervisors go to practical sites the professionals at the site assumes that their job is obstructed. In the words of one of the participants:

"…the interaction between the Radiologic Technologists working in the hospitals and us creates interference in their works…they sometimes consider as if we impede their work when we enter their room to supervise our students." **FP2**

Theme 4- Commitment of clinical supervisors

Under this main theme there are five categories identified. These are; giving attention to practicing students, frequency of practical site visit, interest in practical teaching, practice of feedback system in clinical supervision and incentive as a means of motivation

4.1- Giving attention to practicing students

The practice of giving due attention to certain activities is one of the essential elements where commitment is reflected. Eventually, it is very difficult to teach students at practical sites without

giving them proper attention. As a result, it will become a challenge to the clinical supervisors, to confirm whether students have learned or not under their supervision. In relation to giving attention to practicing students, it was found that most of participants described that there is shortage in provision of proper attention to students. In related terms one of the participants expressed that:

> *"When we take students to hospitals to practice, the non-faculty radiologic technologists in the respective hospitals does not allocate time as their very objective is to treat their patients."***FP2**

Similarly, another participant supported the preceding idea and explained that:

> *"The non- faculty Radiologic Technologists in the hospitals want to finalize their task quickly and the same is true for the patients that they need to get their result very quickly so as to go back to their physician."* **FP5**

On the other hand, one of the participants emphasized that:

> *"For example, if three students are placed to the practical sites, the non-faculty Radiologic Technologists receive only one and some of them do not even receive one."***FP7**

Furthermore, the challenge in relation to provision of less attention to practicing students is tied with lack of allocated non-faculty supervisor at the practical sites. As a result, it was presented that the students are overlooked. In similar terms one of the participants said that:

> *"....non-faculty radiologic technologists working in practical area…they are neglecting our students."* **FP6**

Supporting the above arguments other participants stressed that:

> "*…non-faculty Radiologic Technologists do not assign supervisors for this purpose. In other words, there are no preceptors to facilitate this task when the students go to practical areas."* **(FP8 & FP9)**

In contrary of the above argument, one of the non-faculty participants mentioned that "We are following students since there are no faculty supervisors assigned for this purpose."(NFP2).Similarly, another participant added that "...carelessness to teach the student, for example, I did not see checking on and monitoring on how the students sent to practice are doing… only accept the results whether true or false…"(NFP6).

The other non-faculty participants emphasized on the effects of less attention and stated that:

> *"....we may say let the student observe if he/she wants or do not observe if he/she don't want…this will hardly affect the assessment."* **NFP4**

4.2- Frequency of practical site visit

As one of the indications of having commitment to practical teaching, the experience of clinical supervisors frequently going to practical sites is crucial to carryout clinical supervision activities. This could help in close follow up of students, identifying their gaps, timely communicated with the concerned bodies at the practical sites. When it comes to the real experience of the participants it was mentioned that:

> *".....challenge arises from our own faculty's supervisors that some of us do not frequently go to the practical areas we are assigned and do not intensively follow up our students."* **FP8**

Similarly, the participant added:

> *"...the other problem arises from staff members of the faculty that we, supervisors assigned at the hospitals to supervise our students, are placed but do not submit letters for student placement at the right time."* **FP6**

Same participant further stressed that:

"The reason behind this problem is our low commitment which has been decreasing from time to time." **FP6**

Another participant emphasized on the effect of lacking regular follow up and explained that:

> *"Some students may become absent from practical area if their teachers do not properly show them*." **FP7**

4.3- Interest in practical teaching

Among the factors which show the commitment of the clinical supervisors, interest in practical teaching takes the lions' share. It is essential in carrying out clinical supervision processes. In relation to interest in practical teaching some of participants described that there is a challenge. In related terms one of the participants expressed that:

> *"When we faculty supervisors ask the non-faculty radiologic technologists to supervise our students, they challenge us by saying that they are hired by the ministry of health to treat patients not to teach students."* **FP2**

Supporting the above arguments, the non-faculty participant explained that:

> *"We have a problem with considering teaching as our duty or obligation. When we are hired at the hospital, we only consider serving patients and no will to supervise and evaluate students."* **NFP7**

Likewise the preceding ideas, one of the participants mentioned that "The Radiologic technologists at some hospitals do not accept our students when they are sent for clinical practice and not even treat them as students." **FP6.** Similarly, another participant added that "Some of the non faculty supervisors at Hospitals do not even want to transfer the required knowledge due to the benefit they lack."**FP8**

In addition to the challenge by some Radiologic Technologists low interest of teaching, there is also a problem faced by the faculty clinical supervisors with regard to some Radiologists working in Hospitals where students are placed for clinical practice. This idea is emphasized by one of the faculty participants in such a way that:

> *"… Some Radiologists' refuse to allow our students join them and their lack of interest to teach them are the other bottlenecks pertaining to ultrasound practice."* **FP6**

The other participant further stressed that:

> *"Nonetheless, it is very hard when it is ultrasound practice area, except in areas where some Radiologic Technologists work because some Radiologists are not interested to teach."***FP7**

4.4- Practice of feedback system in clinical supervision

Feedback is one of the essential components of practical learning. It is crucial for the clinical supervisor to give and receive feedback for practicing students to facilitate learning. By the same token it requires commitment of the clinical supervisors to make feedback happen. It was found that most of the participants explained that their experience regarding feedback is less and some of them never practiced it. In addition to this, the process of feedback process is not uniform across the clinical supervisors. In related terms one of the participants expressed that:

> *"I give personal feedback. I do not have a formulary, but I give feedback on what to fix and what to build when they are working."* **FP3**

Supporting the above argument, one of the participants mentioned that "In fact, I give my own feedback when I'm assigned to go with the students. Apart from this, feedback is not yet practiced well." (FP8).Similarly, another participant added that "… there is feedback that we deliver to students. But it is not sufficient because of shortage of time … students may not get a chance to hands on practice." (NFP4)

On the other hand, in relation to receiving feedback participant explained:

> *"We didn't have experience in taking feedback from the students. So, we never took feedback from the students during supervision.*" (**FP1 & FP2)**

In addition to the challenges with regards to less experience of receiving feedback, there is also a problem with students' free will of providing feedback. In the same way, one participant explained:

> *"I never encountered students who voluntarily give feedback."* **FP7**

Furthermore, one participant emphasized that feedback is mandatory and to take from the participant own words for the interview:

Interviewer: Are you getting feedback from students?

> *"…I have received feedback from students. If one can't receive feedback, I will consider it as a gap. Because I think that every person is not perfect. There is saying* ***"No one is***

perfect in this imperfect world"*. So, I am not perfect. Therefore, I receive feedback."* **NFP2**

4.5- Incentive as a means of motivation

Incentive is one of the factors to increase commitment to do a certain activity. The non-faculty participants described that there is no incentive that encourage them to teach students regardless of the increased patient flow in their respective hospitals. So, this doesn't make them happily supervise students in their practical teaching. In related terms the participant explained that:

"… we professionals will not gladly teach the students because there is no benefit we get in spite of the work load we have. There is nothing that motivates us in terms of payment, training and the likes to make us shoulder the work load and teaching students." **NFP4**

Supporting the above argument, the other participant stated:

"...we lack motivation of teaching students in the absence of incentive." **NFP6**

To put the challenges in relation to lack of incentive in a more explicit way, one participant stressed that:

*".... I don't care. Why should I worry? The only thing what I do care is to give service to my patients quickly and make them depart then walk away from Hospital rather than giving extra time to teach students for no benefit."***NFP4**

This concern is supported by faculty participants. To take from their own words:

"The radiologic technologists in some hospitals need to be given any sort of incentive if they are really to supervise our students." **FP2**

".....some of them also have a stand that they have to either paid or else stop rendering such services for free." **FP6**

This is supported by other participant, whose views are summarized below:

*"….a special benefit that the non faculty supervisors found at these places claim they deserve to be granted, or they do not want to be given additional task with no incentive or something like that."***FP8**

6. DISCUSSION

In this study I have posed two research questions to be addressed in the process of undertaking the research. The questions are: how do Radiologic Technology faculty members at CHS, AAU describe challenges they faced when supervising their students in clinical placements? and how do non-faculty members at CHS, AAU affiliated hospitals describe challenges they faced when supervising AAU Radiologic Technology students in clinical placements?

One of the major findings of this study is the absence of supervisory guidelines and training on clinical supervision assessment and feedback. This has resulted in less experienced clinical supervisors on feedback giving and receiving process. This in turn makes the existing clinical supervision assessment and feedback exposed to subjectivity. In the absence of these guideline and training, it will be very difficult for the supervisors to know where to start, how far they should go during their supervision and identify the level of their students. This could result supervisors who are not well-trained. In fact, this finding is in line with the argument made by Kilminster and Jolly (2000) who claimed that when students are sent to practical areas, it is mandatory to deliver feedback and it must be clear to make sure that students acquire the necessary clinical skills.

Contrary to the finding discussed above, it could be justified that since the health professional's major practice is on human life, it is unquestionable that students should be equipped with the necessary knowledge, skill and attitude during their study time. In order to make this to happen there is a need to have well prepared guideline on clinical supervision assessment and feedback and relevant training. As far as the need to have training is concerned Thompson and colleagues (2012) have stressed that trainings should be given emphasis as necessary to bring recent knowledge and reverse the forgotten technical knowledge and help to ensure proper application in the field. This idea is further supported by the argument made by Bradshaw et al. (2007) who studied the importance of having supervision with well trained clinical supervisors. Therefore, it can be implied that the absence of supervisory guidelines and trainings on clinical supervision assessment and feedback could negatively affect the performance of students and the willingness of the faculty members on providing clinical supervision for students.

The second major finding of this study is unsuitableness of clinical practice site. When the practical sites are adequate and comfortable, the practical teaching will be well facilitated. However, the study found that the practical areas are narrow and congested by the increased number of patients diagnosed on daily basis. Among the evidences which show the unsuitableness one is that the non-faculty supervisors are more concerned on giving service to the patients rather than supervising students. This problem has emanated from the fact that the non-faculty supervisors do not consider supervising students as their primary objective. In addition to this, there is misunderstanding between the faculty and non-faculty supervisors. This is because when faculty supervisors go for supervision, the non-faculty supervisors consider them as they interfere in their work. Similar to this study, a finding by Gordon, et al. (2000) has showed that if workload is high and attention to teaching and learning is compromised, it will be difficult for clinical teaching than being learning opportunities in the large teaching hospitals.

The other manifestation of unsuitableness of clinical practice site is the lack of integration between the faculty and non-faculty supervisors in providing clinical service to the patients. This resulted communication gap between them and affected the supervision. As it is explained by the participants there is lack of trust and collaboration between them. The problem here is that the practical sites are fully owned by the non-faculty supervisors, and the faculty supervisors are not allowed to enter to the examination rooms unless the non-faculty supervisors permitted. In contrast to this study, it was observed by Cox & Lindbla (2012) that collaboration could have an advantage in accessing experiences of preceptors, clinical managers, faculty members and students.

In addition, it was found that, despite the existence of memorandum of understanding between the institutions, its application is not actively applied to the department level. As a result, the faculty supervisors made not to intensively supervise their students. Besides, the non-faculty members were also made not own the supervision.

This unsuitability of the practice sites could affect the supervisory role and lack of attention by the practitioners. It has also implication on students' practical learning by disallowing them not to have adequate time.

The third major finding if this study is the existence of inadequate support from administrative bodies. Inadequate support from the administrative body can be represented by the less availability of transportation service or allowance for the faculty supervisors to travel to the practical sites. Together with this the geographic placements of the practical sites are scattered and far distant from the place where the department is located. So this has resulted for the faculty supervisors not to go to the practical sites frequently. In addition to this, it affected the faculty supervisors' motivation of going to the practical sites and even exposed them to extra expenses. Consequently, even some students do not seriously attend their practical learning.

On the other hand, absence of recognition can also signify existence of inadequate support from administrative bodies. The study has shown that there is no a system that acknowledges good performers. Such absence of recognition could result in sense of neglect and has negative impact on faculty supervisors' motivation. As a result, their motivation has decreased on regularly attending the students at the practical sites. Contrary to this study, Danish & Usman (2010) have found that provision of recognition is very crucial factor towards an employee motivation. The two authors have elaborated that motivation could increase in situations where employees have secured job, paid well and when they feel they can grow with the institution.

Furthermore, in this study limited number of the Imaging modalities is taken as the other manifestation of the existence of inadequate support from administrative bodies. This is so because it is believed that the administrative bodies have more power to bring the attention of the Ministry of Health to allocate budget for maintenance of the failed machines and purchase of additional equipment. The limited number of imaging modalities has resulted constraint of time for the non-faculty supervisors to supervise the students and to give clinical services for the patients. It was observed that the high expenses of the machines and the longer time it takes for maintenance have created lack confidence by the non-faculty supervisors not to let the students exercise cases by themselves. Relatedly, the finding shows lack of well-equipped skill lab which made students not to demonstrate before going to the practical sites. Of course, as it is cited in Balalian et al. (2014), it was demonstrated that lack of medical equipment and the necessary facilities could have negative consequences. These authors have identified lack in practical application of acquired knowledge and skill, and encountered difficulties in long term retention of knowledge and skills are among the consequences.

As far as the existence of inadequate support from administrative bodies is concerned it can be implied that less motivation both by supervisors and students, lack of opportunity for hands-on experience, and less opportunity of faculty supervisors applying their knowledge.

The final major finding is related to the low commitment of supervisors. According to this study low commitment was observed on both faculty and non-faculty supervisors. In fact this could be partly due to absence of incentive which can be expressed in terms of payment, absence of relevant training, and lack of career development. More particularly, as far as the non-faculty supervisors are concerned, not giving due attention to the students, unwillingness to accept the students when assigned, and not taking supervision as a primary responsibility are the manifestations of the low commitment. On the part of the faculty supervisors, unpreparedness to the supervision and less visit to the practice sites are the other manifestations. Given such situations the practical teaching could be seriously affected.

In this study an attempt was also made to see years of experience and levels of commitment. An empirical study conducted by Ali & Ahmed (2009) has found that reward and recognition programs on employee's motivation and satisfaction have got positive relationship between recognition, work satisfaction and motivation. However, this study has showed that most senior supervisors are less motivated than the junior ones. This could be due to absence of career development, lack of recognition, no payment dedicated to supervision, and the other challenges discussed so far. It can be learned that the more unresolved challenges senior staffs are faced with, the less will be their commitment. This could be because of fading-up and loss of hope.

In conclusion, it can be understood that the major findings of this study confirm the existence of non- effective supervision. This can be justified by the argument forwarded by Watkins (1997). Watkins has concluded from his study that "low empathy, low support, failure to teach or instruct, being non-collegial, and lacking encouragement are the characteristics of the non-effective supervisors".

Theories those are relevant to the study

Types of Theories	Concepts of Theory	Findings(Example
Situated Learning Theory (Lave)	learning is situated; that is, as it normally occurs, learning is embedded within activity and context	Learning in unsuitable environment • High work load • Busy Radiologic Technologists • Narrow and crowded examination rooms Low committed clinical supervisors
Needs-Based Theories of Motivation Existence-Relatedness and Growth Theory (Clayton Alderfer)	Psychological and safety needs Social and self-esteem needs Need of growth	• The sense of neglect of faculty supervisors observed in the study • Need of recognition of supervisors by administrative bodies • The need of career development • Need for further training

7. CONCLUSION

This study has attempted to identifying challenges for faculty and non-faculty clinical supervisors in providing effective practical supervision of Radiology Technology students at CHS, AAU. In the course of conducting the study it was found that the absence of supervisory guidelines and training on clinical supervision assessment and feedback; unsuitableness of clinical practice site; the existence of inadequate support from administrative bodies and low commitment of supervisors.

The challenges faced by both faculty and non-faculty supervisors are many. Among the challenges lack of supervisory guidelines, lack of relevant trainings, lack of transportation service or allowance, low experiences of recognition by the college administrative bodies and lack of career development are some of the challenges observed with regards to the faculty supervisors. Similarly lack of incentives, inconvenient practical site, increased work load, and lack of training are challenges with regard to non-faculty supervisors.

These challenges could result not well trained supervisors, less motivated supervisors, and low committed supervisors in terms of practical supervision.

Generally, it can be concluded that there are several specific ways in which clinical supervision could be improved. The findings from this study suggest that one major factor is due to less attention given to clinical supervision than theoretical academic teaching. In order to obtain the benefits of clinical supervision incentives, short and long term trainings on clinical supervision, provision of recognition from the College administrative bodies, career development of faculty and non-faculty supervisors should be taken into consideration.

7.1. Limitations

In undertaking this study there are certain limitations that are confronted. To begin with, the sample size selected for the study is not representative of the Radiologic Technology departments in the country. It only studied the challenges faced by faculty and non-faculty supervisors while supervising Radiologic Technology students at CHS, AAU. Finally, this study does not answer the question of performance of students trained under this challenging supervision. This is because it is only the faculty and non-faculty supervisors' perspective that was dealt with. Thus, the researcher suggests for future researchers to study the impact on the performance of students trained under challenged clinical supervision.

8. RECOMMENDATION

Based on the findings obtained in this study the following are the recommendations that are suggested to improve the clinical supervision. These include:

1. The department of Medical Radiology Technology, CHS, AAU, could prepare and implement a supervisory guideline used for clinical practice assessment and feedback as a directive to be followed and referred by supervisors in the department.
2. Short and long-term trainings with career development strategies could have planned and carried out by the concerned stakeholders to equip the faculty and non-faculty supervisors by the necessary knowledge, skill and attitude of practical teaching.
3. The department of Medical Radiologic Technology could have access to well-equipped demonstration / simulation room to make students prepared before sending them to practical sites and the administrative bodies could help the department in this regard.
4. The concerned higher officials in the College of Health Sciences, AAU, could provide the necessary recognition and support for supervisors.
5. The faculty and non-faculty supervisors could be able to work in collaboration to create mutual understanding and reinforce the practical teaching in a more organized manner.
6. The signed memorandum of understanding between the College of Health Sciences, AAU, and affiliated Hospitals (practical sites) could be practically implemented by all the stakeholders.

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APPENDICES

Appendix I: Information sheet for participants

Title of the study:

Identifying challenges for faculty & non-faculty clinical supervisors in providing effective practical supervision of Radiology Technology students at CHS, AAU

Dear study participants,

You are assigned to take part in a research study entitled

Identifying challenges faced by faculty & non-faculty clinical supervisors in providing effective practical supervision of Radiology Technology students at CHS, AAU

The researcher is inviting the Faculty (Instructors in the department of Medical Radiologic Technology, CHS, AAU) and Non-faculty (Radiologic Technologists in selected affiliated Hospitals at Tikur Anbesa Specialized Referral Hospital, St. Paul Hospital and Yekatit 12 Hospital) to participate on the study. This study is being conducted by **Alemayehu Nigussie**, MSc candidate in the Department of Health Sciences Education, CHS, AAU.

Purpose of the study:

The purpose of the study is to identify challenges in providing effective supervision by faculty and non-faculty supervisors of Radiologic Technology students. It is hoped that the findings from the study will contribute to possible recommendations and ideas for improvement.

Procedures:

If you are selected as one of the participants you will be asked to participate in an interview. The interview will consist of telling your experiences as a Clinical Supervisor on supervision of Medical Radiologic Technology students at practical sites. During the interview the role of the interviewer is to listen to your perceptions and experiences. The interviewer with your permission tape record the interview as it will enable to accurately record your experiences as it would not be possible to write the entire interview. However at times the interviewer may take

some notes during the interview and you are free to look at these notes. It is my intention to interview you once, but I will be grateful if you would give me permission to return for a second interview if it is necessary. Your ideas will be taken as an input for the study. There are no rights or wrong answers.

Voluntary nature of the research:

This research work is completely voluntary. The researcher will respect your decision of whether or not to participate in the study. No one at the hospital or the college or University will treat you differently if you decide not to involve in the study. If you decide to participate in the study now, you can still change your mind later. You may stop at any time.

Risks and Benefits of being in the study:

Being involved in this study, no risk is anticipated and would not pose risk to your safety or well being. There will not be direct benefit to you, but your participation in the study could help in identifying challenges with effective supervision by clinical supervisors of Radiologic Technology students. The outcome of the study will also contribute to possible recommendations and ideas for improvement in clinical supervision.

How long will the interview take?

The interview may last up to 15 to 20 minutes and will be held at department of radiologic technology and selected Hospitals by a time convenient to you.

Privacy:

Any information you provide will be kept confidential. The researcher will not use your personal information for any purposes outside of this research project. Moreover, your name and other personal identifier will not be included in the study reports. Data will be kept secured in locked filing cabinet and in electronic form on password protected computers.

Contacts and Questions:

You may ask the researcher any questions you have now or later for further clarification related to the study through Mobile telephone 0911040637 or email nigussiealemayehu@gmail.com.

Thank you for your participation!

Appendix II: In-depth interview guide for faculty

Institution: _____

Position: _____

Date: _____

Time of discussion:- Starts: _____ ends: _____

Dear Instructors this interview is aimed at collecting information regarding challenges of effective supervision by faculty (clinical supervisors at department of Medical Radiologic Technology) in providing effective clinical supervision of Radiology Technology students at CHS, AAU. Information collected will be for research purposes and will be kept strictly confidential. Therefore, you are not required to tell your names during the discussion.

1. Is there clinical supervision assessment and feedback in your clinical practice areas while you supervise Radiologic Technology students? How?
   1.1. Is there any guideline or training on clinical supervision assessment and feedback?
   1.2. For how long do you participate in clinical supervision assessment and feedback?
   1.3. Are you getting feedback from students?
2. What are some challenges that limit you providing effective clinical supervision assessment and feedback?
   2.1. Do you think these challenges affect the effectiveness of clinical supervision assessment and feedback? How?
   2.2. How you describe non-effective clinical supervision assessment and feedback affects clinical learning skills?
3. What do you think about how effective clinical supervision assessment and feedback can be improved in your clinical practical site?

Appendix III: Amharic version of in-depth interview guide for faculty

ጤና ተቋሙ ስም: _____

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ቀን: _____

የቃለ መጠይቅ ሰዓት:-

የተጀመረበት: _____ ያለቀበት: _____

ውድ መምህራን የዚህ ቃለ መጠይቅ አላማ በአዲስ አበባ ዩኒቨርሲቲ ፤ ጤና ሳይንስ ኮሌጅ ፤ የራዲዮሎጂ ቴክኖሎጂ ተማሪዎች የተግባር ልምምድ ወቅት ውጤታማ ክትትል ግምገማ እና ግብረ መልስ ለመስጠት መምህራን ያሉባቸውን ተግዳሮቶችን ለመለየት በሚል እየተጠና ላለ ጥናት መረጃን ለማሰባሰብ ነው፡፡ የሚሰበሰቡት መረጃዎች ለጥናት አላማ ብቻ የሚውሉ ሲሆን ምስጢራዊነታቸውም የተጠበቀ ይሆናል፡፡ስለዚህ በቃለ መጠይቁ ወቅት ስም መናገር አይጠበቅቦትም፡፡

1. በራዲዮሎጂ ቴክኖሎጂ የተግባር ትምህርት ላይ ክትትል ግምገማና ግብረ መልስ አለ? እንዴት?
   1.1. የተግባር ትምህርት ክትትል ግምገማና ግብረ መልስ ጋይድላይን ወይም ስልጠና ወስደዋል?
   1.2. በራዲዮሎጂ ቴክኖሎጂ የተግባር ትምህርት ላይ በክትትል ግምገማና ግብረ መልስ ላይ ምን ያህል ጊዜ ተሳተፉ?
   1.3. ከተማሪዎችዎ ግብረ መልስ ይቀበላሉ?
2. በራዲዮሎጂ ቴክኖሎጂ የተግባር ትምህርት ላይ ውጤታማ የሆነ ክትትል ግምገማና ግብረ መልስ እንዳያደርጉ የሚወስኑ ተግዳሮቶች ምን ምን ናቸው?
   2.1. እነዚህ የጠቀሷቸው ተግዳሮቶች የተግባር ትምህርት ክትትል ግምገማ እና ግብረ መልስን ይጎዳሉ ብለውያስባሉ? እንዴት?
   2.2. ውጤታማ ያልሆኑ የተግባር ትምህርት ክትትል ግምገማና ግብረ መልስ በክህሎት ትምህርት ላይ የሚያደርሰውን ጉዳት እንዴት ይገልጹታል?
3. በራዲዮሎጂ ቴክኖሎጂ የተግባር ትምህርት ላይ ውጤታማ የሆነ ክትትል ግምገማና ግብረ መልስን በተሻለ ሁኔታ ማድረግ ይቻል ዘንድ ምን መደረግ አለበት ብለው ያስባሉ?

Appendix IV: **In-depth interview guide for non-faculty**

Institution: _____

Position: _____

Date: _____

Time of discussion:-

Starts: _____ ends: _____

Dear Radiologic Technologist this interview is aimed at collecting information regarding challenges of effective supervision by non-faculty (Radiologic Technologists in affiliated hospitals) in providing effective practical supervision of Radiology Technology students at CHS, AAU. Information collected will be for research purposes and will be kept strictly confidential. Therefore, you are not required to tell your names during the discussion.

1. Is there clinical supervision assessment and feedback in your clinical practice areas while you supervise Radiologic Technology students? How?
    1.1. Is there any guideline or training on clinical supervision assessment and feedback?
    1.2. For how long do you participate in clinical supervision assessment and feedback?
    1.3. Are you getting feedback from students?
2. What are some challenges that limit you providing effective clinical supervision assessment and feedback?
    2.1. Do you think these challenges affect the effectiveness of clinical supervision assessment and feedback? How?
    2.2. How you describe non-effective clinical supervision assessment and feedback affects clinical learning skills?
3. What do you think about how effective clinical supervision assessment and feedback can be improved in your clinical practical site?

Appendix V: Amharic version of in-depth interview guide for non-faculty

ጤና ተቋሙ ስም: _____

የሥራ ሃላፊነት: _____

ቀን: _____

የቃለ መጠይቅ ሰዓት:-

የተጀመረበት: _____ ያለቀበት: _____

ውድ ራዲዮሎጂክ ቴክኖሎጂስት የዚህ ቃለ መጠይቅ አላማ በአዲስ አበባ ዩኒቨርሲቲ ፤ ጤና ሳይንስ ኮሌጅ ፤ የራዲዮሎጂ ቴክኖሎጂ ተማሪዎች የተግባር ልምምድ ወቅት ውጤታማ ክትትል ግምገማ እና ግብረ መልስ ለመስጠት መምህራን ያሉባቸውን ተግዳሮቶችን ለመለየት በሚል እየተጠና ላለ ጥናት መረጃን ለማሰባሰብ ነው፡፡ የሚሰበሰቡት መረጃዎች ለጥናት አላማ ብቻ የሚውሉ ሲሆን ምስጢራዊነታቸውም የተጠበቀ ይሆናል፡፡ ስለዚህ በቃለ መጠይቁ ወቅት ስም መናገር አይጠበቅቦትም፡፡

ı. በራዲዮሎጂ ቴክኖሎጂ የተግባር ትምህርት ላይ ክትትል ግምገማና ግብረ መልስ አለ? እንዴት?

1.1. የተግባር ትምህርት ክትትል ግምገማና ግብረ መልስ ጋይድላይን ወይም ስልጠና ወስደዋል?

1.2. በራዲዮሎጂ ቴክኖሎጂ የተግባር ትምህርት ላይ በክትትል ግምገማና ግብረ መልስ ላይ ምን ያህል ጊዜ ተሳተፉ?

1.3. ከተማሪዎችዎ ግብረ መልስ ይቀበላሉ?

2. በራዲዮሎጂ ቴክኖሎጂ የተግባር ትምህርት ላይ ውጤታማ የሆነ ክትትል ግምገማና ግብረ መልስ እንዳያደርጉ የሚወስኑ ተግዳሮቶች ምን ምን ናቸው?

2.1. እነዚህ የጠቀሷቸው ተግዳሮቶች የተግባር ትምህርት ክትትል ግምገማ እና ግብረ መልስን ይጎዳሉ ብለው ያስባሉ? እንዴት?

2.2. ውጤታማ ያልሆኑ የተግባር ትምህርት ክትትል ግምገማና ግብረ መልስ በክህሎት ትምህርት ላይ የሚያደርሰውን ጉዳት እንዴት ይገልጹታል?

3. በራዲዮሎጂ ቴክኖሎጂ የተግባር ትምህርት ላይ ውጤታማ የሆነ ክትትል ግምገማና ግብረ መልስን በተሻለ ሁኔታ ማድረግ ይቻል ዘንድ ምን መደረግ አለበት ብለው ያስባሉ?

Appendix VI: **Consent form**

Name of participant: _____

Code_____

Study site_____

I confirm that I have been given adequate information about the research project; on identifying challenges of effective supervision by faculty & non-faculty clinical supervisors in providing effective practical supervision of Radiology Technology students at CHS, AAU. The researchers informed that there is no risk associated with participating in the study or providing the requested samples. I have also understood that the study will be used for research purposes. I agreed to be involved in interview and allow to be recorded. I am well informed that participation in the study is fully voluntary and I can withdraw anytime without giving any reason. I confirm that all the information provided to me is very clear and has been conveyed by the language that I fully understand. Finally, I declare that I have been given enough time to deliberate before I agree to participate in the study, and I signed this informed consent.

Name of participant.....Signature.....Date……..

Name of facilitator obtaining consent.....

Signature: ……Date……

Name of researcher…….

Signature……..Date……...

Appendix VII: **Amharic version of consent form**

የተሳታፊው ስም _____

የተሳታፊ ቁጥር (ኮድ) _____

ጤና ተቋሙ ስም_____

በአዲስ አበባ ዩኒቨርሲቲ ፤ ጤና ሳይንስ ኮሌጅ ፤ የራዲዮሎጂ ቴክኖሎጂ ተማሪዎች የተግባር ትምህርት ወቅት በመምህራን እና ሜዲካል ራዲዮሎጂክ ቴክኖሎጂስቶች ውጤታማ ክትትል ግምገማ እና ግብረ መልስ ለመስጠት ያሉ ተግዳሮቶችን ለመለየት በሚል የተዘጋጀ ጥናት ላይ እንድሳተፍ ተጠይቄ ስለ ጥናቱም ለመረዳት በቂ መረጃ ማግኘቴን አረጋግጣለሁ፡፡ በጥናቱ ላይ የምሰጣቸው መረጃዎች እና የጥናቱ ውጤት ለምርምር አገልግሎት እንደሚውል እንዲሁም ሚስጢራዊነቱ እንደሚጠበቅ ተገንዝቤያለው፡፡ በጥናቱ ላይ ለሚደረገው ቃለ መጠይቅ ለመሳተፍ እንዲሁም በቃለ መጠይቁ ወቅት በመቅረፀ ድምጽ ለመቀዳት ተስማምቻለሁ፡፡ በጥናት ላይ መሳተፍ በፍቃደኝነት ላይ የተመሰረተ ሲሆን በፈለኩ ጊዜ ምክንያቴን ሳላሳውቅ ማቋረጥ እንደምችል ተረድቻለሁ፡፡ የተነገሩኝ ሁሉም መረጃዎች ግልጽ ናቸው፤ እንዲሁም በሚገባኝ ቋንቋ ተብራርተውልኛል፡፡ በመጨረሻም በጥናት ላይ መሳተፍ ከመስማማቴ በፊት እንዳስብበት በቂ ጊዜ የተሰጠኝ ሲሆን የስምምነት ቅጹ ላይ ፍቃደኝነቴን በፊርማዬ አረጋግጣለሁ፡፡

የተሳታፊ ስም_____ ፊርማ _____ቀን_____

የስምምነት ቅጽ ያስሞላው ስም_____ፊርማ _____ቀን_____

የአጥኚው ስም_____ ፊርማ _____ቀን_____

Appendix VIII: **The codes, categories and themes**

Codes	Categories	Themes
- Supervision - Assessment - Feedback - Subjectivity - Role - Training - Transport - Recognition - acknowledge - good performers - Discourage - Not helpful - motivation - Resources - modalities - Time - incentivize - Agreement - Administrative - Neglected - skill lab - Absence - Many patients - Work fast - Workload - Environment - Not conducive - challenging - Avoid students - low commitment - do not frequently go - follow up - no benefit - not pay - Not teach - Not accept - Refuse - Not interested	Presence of supervisory guideline	**Presence of supervisory guidelines and trainings**
	Availability of training on clinical assessment and feedback	
	Availability of transportation service	**Support from administrative bodies**
	Availability of imaging modalities	
	Provision of recognition	
	Suitableness of clinical environment to teach students	**Appropriateness of clinical practical site**
	Practical teaching in busy clinical sites	
	Existence of integration	
	Giving attention to practicing students	**Commitment of clinical supervisors**
	Frequency of going to practical sites	
	Interest in practical teaching	
	Practice of feedback system in clinical supervision	
	Incentive as a means of motivation	