

Addis Ababa University
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School of Psychology

**FACTORS AFFECTING OCCUPATIONAL COMPETENCE
AMONG HEALTH SECTOR CANDIDATES
IN ADDIS ABABA**

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TABLE OF CONTENTS

Title	page
Acknowledgement-----	i
Table of Contents-----	ii
List of Tables-----	iii
Acronyms-----	iv
Abstract-----	v

Contents

1. Introduction.....	1
1.1. Background of the Study	1
1.2. Statement of the Problem	7
1.3 Significance of the Study.....	8
1.4 Delimitation of the Study	8
1.5 Limitation of the Study.....	8
1.6 Definition of Key Terms.....	8
2. Review of Related Literature.....	10
2.1 Overview of Policy Framework of TVET.....	10
2.2 The Emergence of Competence Assessment.....	11
2.3 Concepts of Competence and Assessment System.....	12
2.4 Reliability and validity in Assessment	16
2.5 Occupational Standards	17

2.6	Assessment Centers	18
2.7	Occupational Assessment and Certification	19
2.8	Training and Competence Assessment Process.....	20
2.9	Importance of assessing employees' competence	20
2.10.	Attitude of candidates.....	24
2.11.	Summary /Synthesis/	25
3.	Research Design and Methodology.....	31
3.1	Research Design	31
3.2	Population and Sampling.....	32
3.3	Data Collection	33
3.3.1.	Interview	34
3.3.2.	Questionnaire	35
3.4	Data Collection Procedure.....	37
3.5.	Data analysis.....	38
3.6.	Ethical consideration.....	39
4.	Result	40
4.1	Chracteristic of respondents	40
4.2	Attitude	45
4.3	Capacity of training centers.....	46
4.4	Cooperative training centers.....	46
4.5	Assessor	46
5.	Discussion	48
6.	Summary, Conclussion and Recommendations.....	52
	REFERENCE	56

List of Tables

Table	Page
Table 1: Characteristics of Respondents-----	41
Table 2: competency by type of Institute-----	42
Table 3: competency by field of study and shift -----	43
Table 4: Logistic Regression analysis-----	43
Table 5: Attitude vs. Competency -----	44

Abbreviations

OCACC Occupational Competency Assessment and Certification
Center

TVET Technical Vocational Education and Training

UNESCO United Nations Educational, Scientific and Cultural
Organization

MoE Ministry of Education

COC Center of Competence

WHO World Health Organization

Abstract

This research is aimed at finding out factors that affect health sector candidate's occupational competency in Addis Ababa. The research design used for this specific study was descriptive in which both qualitative and quantitative approaches were used. The sample size was 312 candidates and was collected at three health science training centers and three health centers. In-depth interview was conducted at the initial stage with purposive sampling of candidates, trainers and supervisors whereas quantitative data of self administered questioner used for candidates. Ethical standards were maintained before participating respondent candidates. Factors as bottleneck for the competency of health sector candidates were found to be subjectivity, unfairness, and lack of efficiency of assessors. In addition, gaps were also observed on capacity of training center and cooperative trainings. Attitude of candidates has association with candidate's competency. Recommendations are forwarded to involve a group of assessors in the assessment process, to engage candidates more on cooperative training with continuous follow-up and supervision. It is also recommended to equip training centers with practical materials and limit the number of candidates at cooperative training so that everyone can be engaged in all forms of practical instruments. Institutional assessment to be continued as the best practices at training centers.

1. INTRODUCTION

1.1. Background of the Study

The purpose of this chapter is to set the background of the study. It begins with a brief historical overview of the issues under study on how and why occupational competence becomes important agendas of many training institutions across the globe. The second section presents the statement of the problem, which is followed by presentation of the research problem including the basic research questions of the study. The third section deals with significance whereas the fourth and the fifth sections deal with the scope and the limitations of the study, respectively. Finally, the definition of key terms is presented in the sixth section.

Occupational competence is defined as the possession and application of a set of skills, knowledge and attitudes which are necessary to successfully compete for jobs in the labor market ,to be productive and adaptable entrepreneur, employee or self-employed, and thus to contribute to personal empowerment in economic and social development(MoE,2008).Competence becomes essential for different fields for professional growth and to make people more confident in the workplace and be able to create safe and positive experience of job. It is also important to enhance the work place environment and to improve the quality of work.

According to Wilkinson (2013), occupational competence assessment has insight in the field of nurses, as there is increasing number of graduates from different universities, the increased focus on high quality care as a result of patients' increased knowledge of health issues, and the need to

provide evidence to support competence. The current health care system needs not only more practicing number of health professionals but also competent professionals in different fields.

Yihune (2011) explains that Technical Vocational Education Training (TVET) plays important role in equipping individuals with relevant skills and knowledge for the job market. TVET can also enable individuals to participate in social, economic and technological innovation processes. Therefore, embedding TVET into regional and national innovation structures is of paramount importance to the economic performance and social development of countries. Having a pool of skilled and knowledgeable people within the TVET industry is as important to the TVET industry as it is to the industries TVET serves.

It is believed that education helps people to transform lives, provides people freedom of choice and empowers them to participate in social and political lives and equipping them with different life skill to develop their livelihood. (UNESCO, 2010, cited in Yihune, 2011). Thus people require to be engaged in education and skill training. Their need to be engaged in skill training in particular would help them to contribute in building their capacity and contribute to their country's economy by being competent among many. The overall objective of national TVET is to create a competent, motivated, adaptable and innovative workforce in Ethiopia to contribute to poverty reduction and social and economic development through facilitating demand-driven, high quality technical and vocational education and training, relevant to all sectors of the economy, at all levels and to all people (MoE, 2008).

According to the Ethiopian National TVET strategic document (MoE, 2008); one of the focuses of the policy strategy is on producing entrepreneurial and competent citizens that can create their own business and self-employment both quantitatively and qualitatively. TVET has to respond to the competence needs of the labor market and create a competent, motivated and adaptable workforce capable of driving economic growth and development. This strategy was developed with the involvement of a broad range of stakeholders from the private and public sectors. It defines the major principles of the intended TVET development in the future years. The main trust of the strategy is that TVET development relies on an outcome-based system and dedicated and trusting cooperation among stakeholders.

TVET has basic objectives. The primary objective of all technical and vocational education and training program is the acquisition of relevant knowledge, practical skills and attitudes for gainful employment in a particular trade or occupational area. The need to link training to employment is at the base of all the best practices and strategies observed world-wide. In recent years, in view of the rapid technological advances taking place in the labor market, flexibility, adaptability, and life-long learning have become the second major objective. The third objective, which is particularly important for Africa, is to use TVET as a vehicle for economic empowerment and social mobility and for the promotion of good governance and regional integration (African Union, 2007). To make the national occupational standards which is fairly equivalent to international standards and organizing an occupational assessment and certification system which offers National Occupational Qualification TVET system outcome based, the federal government is fulfilling its responsibility by facilitating the setting certificates to those

who have proven, in an assessment, that they are competent in accordance with the defined occupational standards (MoE 2008).

The new TVET program promoted TVET quality through its components of the TVET qualifications framework, occupational standards, occupational assessment and certification, accreditation of TVET institutions and testing centers, TVET research monitoring and evaluation, stakeholders' participation and partnerships and other support/regulatory mechanisms for standard-based TVET delivery (Hagos, 2012). As occupational assessment is one of the components for the quality of TVET, Ethiopia incorporates assessment with certification and accreditation of different fields of study.

The introduction of occupational competence assessment in Ethiopia is a recent phenomenon and has been started since 2008 and is still working to date but the concept of competence has emerged during the second half of the 20th century (Martin, 2007). There are also indications that TVET lacks effectiveness and efficiency. Many TVET graduates remain unemployed even in those occupational fields that show high demand for skilled manpower. Furthermore, substantial resource wastages occurred as a result of underutilization of equipment (MoE, 2008). As (MoE, 2008), when the 2008 national TVET strategy was introduced, TVET had low relevance to the world of work while the delivery was fragmented, uncoordinated, and unregulated. There was lack of assessment and certification system that recognizes competence achieved through non-formal and informal learning and training.

Occupational competence assessment has insight in the field of health professions, as there is an increasing number of graduates from different higher education organizations (both private and public) in Ethiopia with huge quality concern (Mulu, 2012), the increased focus on high quality care as a result of patients' increased knowledge of health issues, and the need to provide evidence to support competence.

In competence assessment, the knowledge, skills, and attitudes of candidates are assessed in relation to the standards expected in the workplace as is expressed in the relevant competence standards of MoE. In the 1970s and 1980s there was considerable interest in competence based teacher education and corporate training. The problem was to identify on which basis teachers should be trained. The development of competence has different reasons as for some it is a way of improving learning and for some countries it has a purpose of challenging the traditional knowledge and for others it is for certification purpose. Grootings 1994 (cited in Martin, 2007) gave a review of how the concept of competence entered the vocational education development process in various countries in the Europe. He stated that in the UK the concept entered the field especially for assessment, output and standards. In Germany, according to the author, discussion on the concept of competence already started in the 1970s, and was related to specialization of vocational education, the definition of occupations, and improving learning processes. In Denmark, the same developments took place. In France, the concept of competence was introduced as criticism of traditional knowledge-oriented pedagogy, and became more popular when employee training further developed.

Assessment is a process for obtaining information in curriculum operation in order to make decisions about student learning, curriculum and programs, and on education policy matters (Mikre, 2010). Occupational competence is associated with occupational fields and work organization which is relevant to free planning of work, in which individuals organize work by them. In comparison to assessment, competence on the study of OCAAC in 2012 is defined a required standard of skill, knowledge, ability or behavioral characteristics that an individual needs to perform his/her work successfully. It is a combination of several factors like motives, traits, self concepts, attitudes or values, skills and abilities all of which are required from an individual to function properly and satisfy the needs and interest of customers as well as achieve the objectives of the organization. On the other hand it is to say that authority (in the sense of possessing the responsibility, license or right to decide, produce, serve, act, perform or claim) and capability (in the sense of having the knowledge, skills and experience to perform), as mentioned above.

The national occupational standards define the competences that a person must possess to be able to perform and be productive in the world of work. It is made up of clusters of related units of competence that define a particular scope of work resulting in a product, service or decision. Competence standards are statements that describe what the industry accepts as effective performance in the workplace. This includes the skills, knowledge and attitudes you need to do a job. These standards are stated into unit of competence. (OCAAC, 2012).

According to OCACC, (2012) different sectors of job or specialization of an individual in a job is taken as an activity and is measured as a competence. These units of competence match

particular activities that people carry out at work, like operating a bulldozer, processing insurance claims or assembling table furniture. Job is made up of these units of competence. Each unit of competence is broken down into smaller parts called elements and performance criteria. Units of competence are what the accredited assessor will use to judge whether or not one is competent.

In 2003, the Institute of Medicine (IOM) issued a report, a bridge to quality, in which professional competence was viewed as a shared responsibility of both the public and private sectors. The IOM report recommended that all professional boards move toward requiring licensed health care professionals to periodically demonstrate their ability to deliver care within five competencies. These career encompassing competencies are delivering patient centered care, to be members of an interdisciplinary team, while emphasizing, evidence-based practice, quality improvement, and informatics. To summarize, competence in nursing practice is complex and involves cognitive and kinesthetic aspects. Conceptually, it is more than just passing an exam or test. It involves action and demonstration of both the physical and cognitive skills used by nurses in the practice environment. Competence in other countries like Australia has almost similar meaning as accomplishment of a number of discreet and separate tasks.

1.2. Statement of the Problem

As we have discussed in section 1.1 above, health is a serious issue, where professionals should understand the area and are expected to serve patient properly with full competence. This is to say that highest risk and poor outcomes are related with low level of competence among the health professionals and health fields are required to receive evidence based practice and competence based assessment so as to improve the quality. The data base of the occupational

competence assessment and certification center at Addis Ababa (OCAAC, 2012) showed that of all 59,746 assessed candidates from 2008 to 2011, merely 10,163 (17.01%) were found to be competent. The issue of factors that determine occupational competencies in health is not clear so far, while the above figure necessitates further study in this area. Thus, the research problem of this study could be stated as: what factors affect the performance of candidates in the health sectors in Addis Ababa? This fundamental research problem is further broken down into the following basic research questions.

R.1. What are the major factors considered as influencing factors for occupational competence during training at health institutions?

R.2. What are the factors that are considered as influencing factors candidate's competence during occupational competence assessment?

R.3. What are the factors related to assessors that influence candidate's competence?

R.4. what are the attitudes of health sector candidates that influence occupational competence?

1.3. Significance of the Study

The purpose of this specific study is to find out and assess the major factors that affect the performance of candidates in the health sectors. Therefore the study is focusing in terms of magnifying the problems in relation to the performance of candidates on occupational assessment for further in depth study and the researcher believes that the study would have the following significances. Points out new problems that doesn't get researchers attention and for further investigation, important for public and private TVET training centers to have awareness about the problems of occupational competence so as to take action.

1.4. Delimitation of the study

The study was delimited to health sector candidates who undergo occupational competence assessment at three health training centers and three government health centers at Addis Ababa.

1.5. Limitation of the Study

This study was limited to private training centers and doesn't include government training centers. While data collecting period, there was no government training centers that undergo COC.

1.6. Definition of Key Terms

Competent –an assessment result is proven to have knowledge and skills for specific fields of study.

Not yet competent - An assessment result given to a candidate by an assessor when the examiners believe that the candidate has not proven the possession and application of knowledge, skills and proper attitude to the standard of performance in the workplace.

Candidate – Students who took occupational competency assessment

Assessors - Individuals who meet the required qualification to be authorized by the center of competence to assess whether a candidate possesses certain competences or all the competences

Competence- the ability to perform required tasks and a psychological construct” (the integration of cognitive, affective, and psychomotor skills) (Wilkinson, 2013)

Occupational Assessment – Is the process of collecting evidence and making Judgments on whether competence has been achieved (OCAAC, 2012)

Assessment Center- Establishments of officially authorized by the COC to manage the assessments of candidates for certification. (OCAAC, 2012)

Center of Competence (COC) – An autonomous government organization delegated by the Federal TVET Agency to properly and effectively implements assessment and certification.

Competence Standard- A standard that defines the performance criteria on how a unit of competence is to be executed under certain underpinning knowledge and skills with the presence of a range of variables

Cooperative training center- Center that is used for the practice purpose for trainers. It could be health center, hospital or any health facilities.

The next chapter is the review of literature. The policy framework of TVET, emergence and concepts of competency assessment has section. Occupational standards, assessment centers and certification system were also explained in detail. Importance of assessment were seen from different angles in section 2.9. Attitude towards competence assessment is also described in section 2.10.

2. Review of Related Literature

This chapter deals with the review of related literature. It contains ten sections. Section 2.1 is about overview of policy framework of TVET, followed by emergence of competence and concepts used in this study. The discussions on concepts of competence and assessment and reliability vs. validity are dealt in sections 2.3 and 2.4, respectively. Section 2.5 presents occupational standards, followed by assessment centers in section 2.6. The issues regarding occupational assessment and certification are discussed in section 2.7. Section 2.8 deals with training and competence assessment process. Section 2.9 presents a brief discussion on the importance of assessing employees' competence followed by types of assessment and factors determining test scores. Under 2.9 section, factors affecting test scores is also stated. Attitude towards competence assessment is stated in section 2.10. Finally, a summary/synthesis of the review is presented in section 2.11.

2.1 Overview of Policy Framework of TVET

The government of Ethiopia has a new framework which is appropriate for social and economic development (MoE, 2008). It is clearly stated that TVET strategy has a key role for the overall policy framework for the country development. The Education Sector Strategy Program (ESDP) III outlines a comprehensive development vision for the TVET sector. Based on the analysis that TVET graduates are currently not meeting the expectations and demands of the economic sectors, the strategy paper advocates a coherent system including formal and non-formal, initial and further training, with open access to certification and pathways with the general and higher education system. The main objective of the TVET sub-sector is to train middle level human power and transfer demanded technologies, and by doing so, to contribute to poverty reduction and sustainable development. TVET is seen as an overarching term to describe all modes of

formal, non-formal and informal training and learning below higher education provided by all government and non government providers. The TVET aims to provide more TVET opportunities to a wide range of different groups including, school leavers, dropouts, people without formal education including illiterates, entrepreneurs and employees, farmers and their families (MoE, 2008).

It was with this vision that measures were taken to expand the formal and non-formal TVET program across regions. Formal TVET has been provided mainly to secondary school leavers. Working people have also been benefiting from the program through evening classes and distance learning. Non-formal TVET has been offering training to a wide range of groups. Informal TVET sector is also recognized and described as those operations which are unregistered and operating on a very small scale and with a low level of organization. The informal sector operates without fixed locations or in small shops, outlets or through home-based activities. The government has little or no direct involvement in informal TVET in other words it is not supported, or regulated (Alison,2008).

2.2 The Emergence of Competence Assessment

The development of the concept of competence is traced back to the second half of the 20th century. Competence based assessment started in the 1970s and 1980s, but it became well known in the 1980s and 1990s. The intention for the emergence of competence was to support different professions in their development. Following this, the concept of competence based vocational training was emerged (Martin, 2007). According to OCAAC (2012), the introduction of occupational competence assessment in Ethiopia is an emerging and recent phenomenon, which

has been started since 2008. The Ethiopian National Assessment and Certification System is the platform for giving recognition to the attainment of competences or qualifications along the middle level skilled occupations and Technical Vocational Education Training (TVET) graduates. This system is part of the National TVET Reform Program. The Ministry of Education, in cooperation with the Regional TVET Commissions and Centers of Competence is in charge of awarding authority for these national qualifications.

Ethiopian TVET qualification framework is an instrument to classify TVET qualifications related to occupations. It defines the different occupational levels to be awarded with nationally recognized occupational qualification standards/certificates. The levels detail the scope and composition of qualifications and degree of responsibility a qualified person can assume in the work place (OCAAC, 2012). The health sectors division that undergoes competence assessment in Ethiopia is Nursing, Laboratory, Pharmacy, Midwifery and Radiology. As the paper is focused on the occupational competence assessment of the health sector, these candidates are expected to take the assessment so as to be certified with COC just after completion of their respective study (COC report, 2012/13).

2.3 Concepts of Competence and Assessment System

Qualified and motivated human resources are essential for adequate service and especially to health service provision. Poor performance of service providers in the health sectors include not providing care according to standards, and not being responsive to the needs of patients as the health professionals may lack confidence and have gap on their skills. As WHO (2006) stated, poor performance of service providers leads to inaccessibility of care and inappropriate care,

which thus contribute to reduced health outcomes as people are not using services or are mistreated due to harmful practices. Health workers' number, quality and type of professionalism determine output and productivity, that they manage the other resources, that a large part of the health budget is spent on health workers and that they greatly influence progress. A number of articles and documents have reported problems relating to service provision due to poor performance of health workers.

The term competence has given different meanings by different scholars in different periods as someone's ability to perform a task, successful completion of specific job and is also related with knowledge, skill and genetic traits that have relation to behavioral characteristics. For some it is defined as the ability of applying facts and skills, evaluating evidences and making an explanation from existing facts. It is also a capacity of formulating and synthesizing hypothesis. The ability to communicate effectively, self efficacy and the talent of expressing self are also considered as competence. As competence vary from person to person, others define it as a broad concept which is to do with occupational roles, for others it is narrowly focused on the routine aspects of work activity, and towards the inputs of knowledge, skills and understanding which are attributes of individual. Below are different definition and explanation as to how competence is defined by different scholars.

Competence is defined as a required standard of skill, knowledge, ability or behavioral characteristics that an individual needs to perform his/her work successfully. It is a combination of several factors like motives, traits, self concepts, attitudes or values, skills and abilities all of which are required from an individual to function properly and satisfy the needs and interest of

customers as well as achieve the objectives of the organization (Zelege, 2009). According to Epstein(2007), competence is defined as the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individuals and communities being served. Competencies specify how an individual is performing job tasks, or what the person needs to do the job successfully. Competencies tend to be either general or technical. General competencies reflect the cognitive and social capabilities (e.g. problem solving, interpersonal skills) required for job performance in a variety of occupations. On the other hand, technical competencies are more specific as they are tailored to the particular knowledge and skill requirements necessary for a specific job (Assessment guide, 2010).While studying competence in the health sectors, we are talking competencies of the technical ones as it is more of tailored to a particular skill that are required for that specific job.

Competence in professional practice is much more than accomplishment of a number of discrete separate tasks. It is a complex integration and interaction of knowledge, judgment, higher order reasoning, personal quality, skills, values and beliefs, in their everyday life. Competent professionals will recall and apply facts and skills, evaluate evidence, create explanation from available facts, formulate and test hypothesis and synthesize information from a rich and highly organized knowledge base. Thus the competent occupational therapist is expected to execute both specific cognitive process and practical skill to a minimum standard. Professional competency also embodied with the ability to generalize competence or transfer and apply skills and knowledge from one institute and environment to another (Occupational Therapy Australia, 2011).

According to Epstein (2007), competence in medicine is defined as the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individuals and communities being served. Performance is a combination of competencies and attitude. Moreover, it explains that competencies are behaviors that encompass the skills, knowledge, and attribute required for successful performance. This in turn indicates that as attitude is one of the major components of performance, it is without question giving considerable attention about methods employed for changing attitudes in performance interventions (OCAAC, 2012).

As indicated in OCAAC (2012), professional or personal level success are derived from three factors: knowledge, competencies and attitudes. The three factors can be defined as follows: knowledge is information gained through learning, experience or association. Competencies, on the other hand, refer to the ability to perform specific tasks. Examples of competencies include ability to communicate effectively, ability to write clearly, ability to play an instrument, ability to solve problems, ability to dance, and so forth. The last one, attitude, involves how people react to certain situations and how they behave in general. For instance, being proactive, able to get along with other people, optimism, critic towards other people and being arrogant are embodied in attitudes.

The overall idea of competence-based assessment is the process of collecting evidences about ones knowledge, skill and attitude in order to make judgments whether an individual is competent or not. The purpose of assessment is to confirm the fact that an individual can perform to the standard expected in the workplace as expressed in the relevant occupational standards.

Competence assessment of an individual may reflect the established standards and it should be consistent with standards defined by regulatory and professional bodies. The methods should also be valid, reliable and feasible. Although different scholars have defined competency in different ways, all have something in common that refers knowledge, skills and attitudes that yield to perform job or it is to mean performance for a specific job. The term assessment has different meanings but all of the definitions serve the same purpose when the term is applied for learning and teaching. Assessment is a broad term that includes all of the various methods used to determine the extent of an individual's achievement.

2.4 . Reliability and validity in Assessment

Validity and Reliability of assessment methods are considered as the two most important characteristics of a well-designed assessment procedure. Validity refers to the degree to which a method assesses what it claims or intends to assess. Reliability refers to the extent to which an assessment method or instrument measures consistently the performance of the student (Evans,2008). It is also a measure of consistency of a test, and is affected by many factors such as examiner judgments, candidate nervousness, test conditions and etc. But, above all the goal of good assessment is to minimize random source of error. Reliability is also important when deciding which assessment to use for a given purpose. Performance based assessments are typically viewed as providing more valid data than traditional examinations, because they focus more directly on the tasks or skills of practice(Assessment Guide,2010).Common sources of error might happen and these emanate from the candidate's side, during assessment administration, assessment environment or from the assessors. According to the Assessment Guide, assessment error can happen due to applicant's mental or physical state (e.g., the applicant's level of motivation, alertness, or anxiety at the time of testing), assessment

administration (e.g., instructions to applicants, time limits, use of calculators or other resources) Measurement conditions (e.g., lighting, temperature, noise level, visual distractions) Scoring procedures (e.g., raters who evaluate applicant performance in interviews, assessment center exercises, writing tests) .According to Evans (2008), factors that affect assessment include: the inconsistent nature of people, reliance on assessors to make judgments without bias, changing contexts/conditions and evidence of achievement arising spontaneously or incidentally

2.5 . Occupational Standards

All standards should be based on common principles as standards are something about the major activities that a person has to undertake, the understanding and knowledge they should have, the things they are expected to be good at and the environment in which they will normally carry out the functions. Professionals should keep their knowledge and skills up to date by engaging in lifelong learning and local quality assurance activities which helps to strengthen the relationship between professionals and the public. The quality of knowledge and skills is measured through assessment and the assessment is accredited by certification. The occupational standards serve as the performance benchmark for each profession and help to assess knowledge and skill. Competence is a requirement for registration purpose and for the assessment of overseas qualified occupational therapists applying to practice in Australia. Competency standards are also a base and requirement for the accreditation process for Australian occupational entry level education program (Australian Occupational Therapy, 2011).

To guide the preparation of occupational standards, the Ethiopian Occupational Standards Development Guideline was developed first in July 2009 and then upgraded in January 2012. As of September 2012, and based on the needs of the world of work, occupational standards have

been developed to 388 occupational titles including fields in agriculture; culture, sports and tourism; economic infrastructure; health; industry development; and labor affairs and social service (MoE,2012) .

Occupational standards define the competences of a worker according to requirements in the labor market. It describes candidate's achievement so as to be qualified in a field of study. Competence includes skills, attitudes and knowledge for performing a job. Identification and clustering of occupations is made in close cooperation with the Ministry of Labor and Social Affairs and the Civil Service Agency as well as other concerned bodies to ensure that the TVET occupational standards take into account the defined occupational titles from the National Occupational Classification indicated in the National Technical & Vocational Education and Training Strategy (Technical & Vocational Education and Training Strategy, 2008). According to the Vocational Education Strategy, occupational qualifications should be designed as compatible with international standards so as to ensure the international competitiveness of the Ethiopian employee.

2.6 Assessment Centers

An assessment center is fully responsible for the administration, use and maintenance of properties, infrastructures and facilities in the disposal of their function. Facilitation and dissemination of information for the assessment and certification program in various media is also the function of the assessment centers. It has also a responsibility of scheduling programs for assessment, assigning professional assessors for the smooth assessment process. The assessment center is one of the most important players in the outcome based assessment and certification system. It is a well organized institution where the assessment can be implemented

according to the standard procedure. Assessment centers are accredited and authorized by the COC to facilitate the conduct of assessment. Thus, they must be properly equipped with the necessary staff, machinery, tools, equipment and materials required in the administration and education of outcome based assessment (OCAAC, 2012). In the Ethiopian context assessment centers or testing centers are selected by the TVET agency. The agency has clear selection criteria for the selection process and based on this nine assessment centers are selected for the health candidates to take COC there. Standards are expected from the centers but they vary in their type and quantity of equipments and laboratory setup. Some of them are selected in comparison with other as there is shortage of quality assessment centers.

2.7 Occupational Assessment and Certification

Occupational assessment and certification is allowed to all people who are competent enough to take the test. Competence is ultimately the responsibility of individual candidates and licensing bodies also have a legal mandate to ensure professional competence. According to MoE, competence assessment used to be given only to people who were trained in TVET but currently, it is no longer to be dependent on attending a formal TVET program and includes all graduates from any formal and non-formal TVET program. There is a plan to incorporate all graduates from any field of study to be assessed for occupational competence in the future. The assessment takes place in accredited public or private assessment centers and is conducted by experts from the world of trainers. The successful candidates will take certificate from TVET authorities as the TVET has delegation from the federal TVET Agency. The center is organized so as to implement its expectations and assessment procedure. Accredited and authorized center therefore has to fulfill and be equipped with the necessary staff and material required.

The center has also responsibility of in preparing assessors with code of conduct. The occupational assessment and certification center has mandate to accredit qualified practitioners and trainers to serve as assessors in their respective occupations and qualification levels. It also accredits qualified establishments, TVET institutions or business establishments as assessment center for specific occupational qualification level. It facilitates and supervises the actual conduct of assessment in the accredited assessment center, and provides the center with the qualified assessors. It also submits timely reports on the results of assessment and at the same time maintain and manage the registry/database of workers/candidates assessed and to be certified. (OCAAC,2012).

Occupational assessment and certification in Ethiopia is a recent phenomenon and has been started since 2008.since now the health sector assessment has reached in nine rounds and has began testing candidates when other sector of study was on round four. That means, up to now the health sector has undergo the six round and the total number of candidates tested so far is 36,816 and among the total tested,10,837 is only who pass on all level tested.(COC report,2013)

2.8 Training and Competence Assessment Process

Training provides a chance of achieving occupational competencies in the workplace and it provides learner with skills and updated knowledge that help them to apply in real life activities. It is also important to be more productive in a specific job. Competence assessment is followed by completing the training and completion is issued by the training centers.

2.9. Importance of assessing employees' competence

Assessment should be directly linked to and developed from occupational standards; if it is to reflect and assess what a person is qualified to do in an occupation. It is very important to assess

employees as it has much dimensional advantage for companies, employees and policy maker. Especially assessment is very important for candidates who are under the health category as it requires serious skill and if there is skill and knowledge gap, it affects life. According to the Assessment Guide (2010), for training to be smooth it should be guided by five essential elements. The task to be taught should be identified by the expert in the occupation, the program allows each learner to have the opportunity to develop confidence and on the competence process, assessment of competence is not only based on knowledge and attitude but primarily of the actual demonstration of the competence ,occupational standards or unit of competence standards should be used as the base for assessing achievement and students/trainees should be aware of them and the last element is that students progress is through the program by demonstrating the attainment of specified competence.

Assessing the competence level of employees helps organizations to communicate desired behaviors, control costs and increase customer satisfaction. It can also serve as the foundation to hire, train and develop employees. It is necessary to continually assess the competence level of employees. As depicted by Zeleke (2009), the need for assessment is to ensure that employees in a particular job have the necessary skills, abilities and attitude to perform the needed activities and achieve organizational objectives, identify the skills employees possess as well as any gaps existing between actual and required skill levels and to close these gaps, help management to identify and close the gaps in individuals' capabilities for better customers' service and identify current skill levels and the needs of training and development to meet skill requirements of particular positions. It also help to make necessary changes in the training curriculum based on the gap.

David (2011) has also mentioned as to why assessment is done in various fields of study. For individuals, assessments can lead to certification, assist in initial job entry and upward and horizontal career mobility, and, in the context of lifelong learning, provide a method of documenting competencies learned at different times and through different avenues. For employers, assessment assists in hiring, promotion, and planning of internal training. For training institutions, assessments provide a method of benchmarking the quality of skills and knowledge provided against the occupational competencies actually required in an occupation.

Assessment should include both knowledge and performance of the individual. The assessment will vary as it compared with another individual or it may be based on certain criteria. When assessment is based on criteria, evaluation will be on technical skills related to directly to the occupation, life skills or communication skill which are incomparable with other competent where as when it is comparable with other individuals it is termed as norm referenced. Below are the types of assessment approaches as is described by David (2011).

2.9.1. Factors Determining Test Scores

As a human nature, candidates provide different reasons for their being competent and not competent. Usually it is very common to say “I did it “or I just passed for those who got pass mark and relating external factors for not being competent. The most common expected responses are related with the unfair judgment of examiner/ assessor, lack of experience of assessor, the allotted time for assessment and etc. Those related responses may be right for some and may not be correct for the other. There are some literatures who have mentioned the

contribution of external factors that affect candidate's achievement beside to knowledge and skill gaps.

Factors that affect achievement could be during administration, assessment environment or from the assessors. According to Assessment Guide (2010), it can also happen due to applicant's mental or physical state (e.g., the applicant's level of motivation, alertness, or anxiety at the time of testing). It could also be during assessment administration (e.g. instructions to applicants, time limits, use of calculators or other resources). Measurement conditions (e.g. lighting, temperature, noise level, visual distractions) and scoring procedures (e.g., raters who evaluate applicant performance in interviews, assessment center exercises, and writing tests) are also mentioned as contributing factors for low performance of candidates on assessment. Managing the quality of institution across training centers of the health sectors should be taken into account as it affects candidate's score and the curriculum content and the combination of staff's diversity in terms of quality and trainings. Staffs should also be well supported and motivated so that it has a strong linkage with teaching or training activities. Efficient coordination of resources, infrastructure and technology, practical setup, development, quality and updated learning materials accommodation drives candidates for successfulness.

Evans (2008) has mentioned factors that affect assessment are anxiety of people and assessors judgment, subjectivity of individual opinion on the scoring system. Students' participation in extracurricular and education-related activities, as well as how they spend their out-of-class time have been shown to influence (positively or negatively) their achievement. As Julie (1999) noted, students from lower income, less educated families are less likely to achieve at assessment

and this finding is most often attributed to differences among groups in their opportunities to learn, the quality of the education to which they have access, and to their home environment. Weiner (1986) found that positive attribution has linkage with achievement. Negatively-oriented students are those students who attribute their success to luck, and they attribute their failure to low ability or to external sources. Occupational competence assessment is a means of gathering money; it is narrowing the opportunity to be hired; it is an obstacle to continue further higher education; and it is the killer of time and moral of professional (OCAAC, 2012).

Here in Ethiopia, competency assessment is done based on occupational/job analysis in which assessment is made on candidate need to be able to do in employment, to learn to be effective in employment and what the student learned and is able to do in employment. In order to carry out a standardized labor activity, candidates are expected to be formally assessed and verified to prove that he/she is competent. According to TVET strategy (2008), a competency based TVET system generally uses combinations of powerful techniques to ensure the needs of different industry sectors are addressed.

2.10 Attitude towards Competence Assessment

According to OCAAC (2012), attitude has different meanings. But the definition mentioned here is based on the relationship with competency. It is defined as beliefs, values, traits, and motives. It is also defined as the desire to accomplish. Competencies are observable behaviors, knowledge, skills, and abilities of marketing personnel to attract and retain customers by delivering quality service. Competent frontline employees are invaluable assets for any organization's survival in the dynamic and competitive environment (Zelege, 2007). The above

definition explains as competencies consist of clusters of knowledge, attitudes and skills that affect an individual's ability to perform a specific task, job, or role.

A poor score at an assessment may create a feeling of failure in a trainee, rather than the process being viewed as an experience with the opportunity to identify areas for learning. Because of this attitude most trainees do not have positive attitude for the competence assessment. It is also believed that candidates' attitudes towards the system are below the expected level and much is expected from COC, TVET agency, and respective institutions to capitalize the level of awareness of the candidates so as to benefit much from the system and ultimately change their attitudes and behavior before assessment. Local studies showed that the candidates have a negative attitude towards competence assessment. A study of OCAAC (2012) showed that most of the respondents respond as "though, Occupational Competence Assessment plays a major role for perfection and to get skilled labor for the country, it is an obstacle already set to make citizens not to pursue their education.

2.11. Summary/Synthesis/

The main focus of this study was occupational competence assessment among the health sectors who were sample respondent. Different scholars define competence in different ways. Competence according to OCAAC is skill, knowledge or attitude that an individual needs to perform his/her task successfully. Competence is equivalent to authority possessing the responsibility in achieving task for ancient Greeks and as MoE (2012) defined; competence is the application of skills, knowledge and attitude to compete for a specific job/task. The definition of competence for my study is taken as skills, attitude, knowledge, achievement and capability of an individual to perform a specific job. Therefore for this specific study the definition of

competence is as candidate's achievement, skills and knowledge are taken into account as is defined by OCAAC. The concept of competence is emerged in the second half of the 20th century and the competence assessment is followed in 1970's and 1980's. The practice of assessing candidates became very famous in 1980's and 1990's. Different fields of study undergo in the competence of assessment in the case of Ethiopia and other countries as well but for this study the researcher took to measure the health sectors competence of Nurse, Midwifery Nurse, Laboratory and Pharmacy.

As is described by the National Education Qualification Framework (2009), assessment is a method of determining achievement based on standards or competence. According to the Ethiopian system of assessment, it is a method of determining skills and knowledge based on the standards required. The health professionals mentioned above undergo the assessment of knowledge and skills on both practical and theoretical sections based on the formulated standards. An occupational standard in the Ethiopian context is developed by TVET agency. The assessment center is testing center equipped with staffs and demonstration equipments required for assessment(OCAAC,2012).Ethiopian assessment centers are selected and accredited by the TVET agency .Once the assessment centers are selected, COC center conducts assessment based on prepared scheduled. TVET select the centers that are fully equipped with the necessary equipments. It has also a responsibility of scheduling programs for assessment, assigning professional assessors for the smooth assessment process.

The assessment center is one of the most important players in the outcome based assessment and certification system. It is a well organized institution where the assessment can be implemented according to the standard procedure. Assessment centers are accredited and authorized by the

COC to facilitate the conduct of assessment. Thus, they must be properly equipped with the necessary staff, machinery, tools, equipment and materials required in the administration and education of outcome based assessment (OCAAC, 2012).

Qualification frameworks are categorized and classified according to degree of strength of the subject. It could be hierarchical and can also be categorized based on its complexity and difficulty. As (OCAAC, 2012) the number of levels in a framework varies according to national or international and need. Almost all modern qualifications are expressed in learning outcomes, which are statements of the knowledge, skills and competences a learner is expected to acquire in order to obtain a qualification. The levels in a framework indicate different degrees of complexity of the learning outcomes. The lowest levels often define the basic generic and or vocational skills for people who can work effectively the expected requirements for professionals who can act independently, while the highest levels emphasize the capacity to analyze and innovate processes, create new knowledge and may include the ability to lead and manage people and processes. Qualifications frameworks aim to bring coherence and clarity to qualifications systems. When qualifications are placed in a classification system, they can be more easily compared by individuals, employers and institutions.

As is clearly stated (MoE, 2008), TVET Qualifications Framework (ETQF) is developed in order to define the value of qualifications, ensure that different qualifications are comparable, and facilitate horizontal and vertical mobility within the TVET system. The ETQF will define the different occupational qualification levels; devise level descriptors, i.e. define the scope and composition of qualifications and the level of responsibility a qualified person can assume in the

workplace, formulate rules for horizontal and vertical mobility, i.e. rules for moving between different occupational areas and between different qualification levels.

In Ethiopia, a system for outcome-based occupational assessment and certification was missing until 2008. Even in 2009, occupational assessment was implemented only in Addis Ababa City Administration, the Amhara Regional State, and the Harari Regional State. As occupational competence assessment is a recent phenomenon in the context of Ethiopia, very few researches were conducted. For instance, (OCAAC,2012),stated that, though there have been inadequate attention to cooperative training and training institutions, variation among training tools and assessment tools, lack of adequate facilities in the assessment centers and lack of information for the candidates were mentioned as the causes for candidates incompetence.

TVET system in Ethiopia and its implementation is highly likely to have unique features. For example, unlike the TVET model of the French-speaking African countries, TVET proclamation number 26 stipulates the integration of traditional apprenticeship into the TVET system. Unlike the TVET system in the English-speaking African countries, the TVET strategy of Ethiopia promotes vertical and horizontal mobility and progression (Hagos,2013).On the other hand, Bediru (2010) had conducted a research entitled “major challenges of candidates” skill performance in 5th round occupational competence assessment in the case of accounting and clinical nursing occupations” .His finding has shown that candidates from the two occupations have some major skill gaps in their respective occupation. To mention some, most accounting candidates were not able to perform bank reconciliation, prepare journal entry, compute net income, calculate cost of scrap and prepare payroll sheet. Whereas clinical nursing candidates

were not able to interpret the project properly, use self-protection properly, use suction machine appropriately, and use oxygen masks or nasal catheter appropriately among the observations. However this research has said nothing about why candidates of the health sectors show the aforementioned skill gaps. The research has separately focused on nursing department and skill gap of nursing candidates alone. There is nothing mentioned about assessment, assessment tools, assessors and training centers gap as an obstacle for the achievement of competence under the specified field.

Furthermore, competence assessment was made among 12 occupational sectors in 2009/2010 and only 17% are able to be competent. In 2011/12, 40% are competent and even if the figure has shown progress it needs to work on it. In addition to this, according to 2012/2013 COC report, the health sector competence result is low compared to other field of study. It is only 29% who can be competent enough level of all round of assessment. Since then general fields of assessment undergoes to its ninth round. The health sector has started at round four and starting from that time, AACOC report (2012/2013) indicated that in the ninth round, total number of assessed candidates were 36,816 and among these only 10,813 were able to be competent. This showed that the health sector candidate's competence result is below the benchmark and is only 29%. Hence based on this information, the current study has been geared towards identifying major contributing factors for candidates of the health sectors' low result in occupational competence assessment. Therefore, this study focuses on factors affecting the competence assessment of health sector candidates which leads to low performance at occupational competence.

There are a lot of reasons indicated for candidate's incompetency. The most common reasons for test takers are expected to label examiners as unfair in judgment and lack of experience. Julie (1999) has mentioned lower income and less educated families are less likely to achieve at assessment. Positive attitude plays a major role for achievement and negative attitude in turn results to low achievement. In the Ethiopian context, local study (OCAAC,2012) showed that most health sector candidates have negative attitude to assessment and there is finding that it might be one factor that contribute for low scoring.

The next chapter is research design and its methodology section. This chapter begins with research design in section 3.1 and followed by population and sampling in section 3.2. Data collection instruments and data collection procedures are discussed in section 3.3 and 3.4 respectively followed by data analysis in section 3.5. The last section is ethical consideration and is discussed under section 3.6.

3. Research Design and Methodology

3.1 Research Design

The main objective of the current study was to identify factors that influence occupational competency of health sector candidates. More specifically, the study aims to describe factors that contribute for the incompetency of candidates in private, government and non-government health science collages by examining different perspectives at training centers, during assessment, at cooperative training, in relation to assessors and the attitude of candidates towards the overall competency assessment. Candidates who took occupational competency assessment were involved in this specific study.

Hence, in the current study descriptive study design was employed. Descriptive research design is used to provide answers to the questions associated with the research problem under investigation. Descriptive studies can also produce rich data that leads to important recommendations in practice as well (Jeane, 1999).

The main aim of using descriptive research design in this study was to obtain an accurate and valid representation of the factors or variables that are relevant to the research question. Based on this, the researcher selected this research design because it can point out different factors that are associated with the existing research problems. In addition to this, it helps to collect a large data for detailed analysis.

The current study employed a mixed method approach within the descriptive research design in which both qualitative and quantitative data were collected and analyzed. Mixed methods

approach is a methodology to conduct research that involves integrating both quantitative and qualitative research. Using both qualitative and quantitative methods in combination is preferable in obtaining better result and in filling the limitations of one approach by the strengths of the other (Teddlie ,2007). The purpose of using both qualitative and quantitative research in combination helps to have s a better understanding of a research problem than either research approach alone. .

Qualitative data were collected at the initial stage while preparing scale development and this study was more focused on the quantitative model and a smaller portion took part on qualitative.

3.2 Population and Sampling

In the current study, the population comprises of health sector candidates that took COC at government, private and non-government health science training centers. More specifically, the target population for the current study includes candidates from St Lideta , Betel and Addis Ababa medical science collages. Five training centers were approached and out of them, only three were fully volunteer to participate and provide data to the study. In addition to the study participant of the health science colleges, 3 government health centers (at Lideta sub city) were included in this study.

Regarding the sampling technique, the researcher used both random and non random sampling techniques. In the random sampling each subject has a known probability of being selected and non probability sampling does not involve random selection. For the non probability sampling, the researcher used purposive sampling techniques was used based on convenience. Therefore, training centers and health centers were selected based on the non probability sampling techniques. Beside to this, school trainers, supervisors from the cooperative training center

&COC and candidates were also selected purposely, except candidates. Subjects of the study for the interview and questionnaire were also volunteers. For the closed ended questionnaire, random systematic sampling technique was employed in which candidates were selected using systematic random sampling in which every k^{th} member of the population is chosen for the sample. Systematic random sampling technique was chosen because of its simplicity for using large sample size (Teddlie, 2007).

The researcher has a total of three school candidates, three health centers and 316 candidates as a sample to be studied. The second (2^{nd}) subject is selected as the first sample from the population then the researcher decided to have 2 constant intervals between consecutive subjects. Based on this, systematic random sampling was employed to select the desired sample size from the total population. Out of the selected number, 293 candidates returned completed questionnaire and out of this, 7 questionnaires were not completed as required and these were rejected. Therefore, the total number of participants of the current study was 286.

3.3 Data Collection instruments

The current study used a mixed method approach in which data were collected through interview and questionnaire. Interview was conducted at the initial stage while developing the scales. Trainers, supervisors at COC and cooperative training and candidates which were not part of the questionnaire took part in the interview. It was mainly employed to assess the factors influencing health sector candidates COC at Addis Ababa. The second instrument was questionnaire in which health sector candidates took part. The questionnaire has two sections: the first part is about the socio-demographic, and the second has five tables and each contains 5-9 subscales that intended to measure different issues. The first subscale was intended to measure attitude of

candidates towards the overall COC, the second and the third subscales measure capacity of training centers and assessment, respectively and the last two subscales were intended to measure capacity of cooperative trainings and assessors, respectively. In order to make clear, the interview questions were conducted in Amharic for all participants. Since the researcher couldn't get previously validated and commonly used standard scales to adopt for this study, psychometric instrument scale was developed. Each steps used in scale development is described in the following section.

3.3.1 Interview

Interview at the initial stage was used so as to collect in depth information and finds out major bottleneck factors that affect COC. This was conducted with selected key persons at one training center, center of competence and cooperative training and volunteer candidates as well. It was structured in open ended questions that allow respondents to elaborate their answers and was conducted face to face. Therefore, in the current study, interview was conducted for 5 candidates and 5 trainers at one private health training center, 1 COC and 1 cooperative training supervisors. The interview questioner was limited to 3 specific questions, which were followed by detailed explanation. A structured interview form was prepared ahead of time and appointment was arranged (Annex A). The major aim of the interview was to identify the existing problems of competency that cannot be gathered through the questionnaire. Interviewing took a maximum of 1 hour for each group. Candidates were interviewed together at school; trainers were also interviewed in a separate group. Interview of supervisors of COC and cooperative training centers were also done separately at their working place. It was planned to conduct all in one but since it was a working hour and do not know each other, participants couldn't be available on the

arranged time and because of this reason, interview was conducted separately at their working place.

3.3.2 Questionnaires

Questionnaires were distributed to large groups of candidates at different selected study sites as mentioned in section 3.2. There are several advantages of using a questionnaire over interview. Questionnaire do not require as much effort in gathering responses as does an interview that demand full involvement of the researcher. It has standardized answers that make it easy to compile answers (Creswell ,2007). Unlike interview, questionnaires are typically made up of closed-ended questions with specific response categories rather than open-ended questions that allow respondents to write their answer which further requires compiling responses of similar themes together. There are also disadvantages of using a questionnaire. For instance, limiting a respondent's answer choices may limit information. Due to these, the researcher employed both interview and questionnaire

Therefore, while preparing the scale, major challenges of health professionals on occupational competency are collected through three initial interview questions for 5 candidates and 5 trainers at one private health training center, 1 COC and 1 cooperative training supervisors regarding the training centers, cooperative training, assessment, assessor and attitude of candidates to COC. Side by side, challenges on competence were reviewed from local and abroad references and certain information was integrated in the interview section. Once a list of challenges as an item pool was identified, a closed ended questionnaire is prepared from the collected interview in English language and was provided to two people for the Amharic translation. (A woman who has specialized in the English language and the other involved person is selected as he is working in the school system and knows the area of occupational

competency assessment well). Having the translated scale, it was again provided for another two people for back translation. Finally all the people who participated on the translation process discussed together on the general translation to see the gaps and finalize the last questionnaire. A Scale was developed from the pool and lastly evaluated before distribution. Both the Amharic and English questionnaire used in the current study are attached in Annex B.

The agreed scale is piloted on candidates who were in practice at Lideta Health center on a total of 30 candidates and some correction was made on certain words, grammar and context. It took a maximum of 30 minutes. The developed scale was intended to measure different aspects. The scales were constructed into two sections. The first section is the socio demographic part which constitutes 11 sub scales. Part two has five tables and each scale has its own sub scale. The first table of section two is the attitude scale and was intended to measure how candidates' attitude affects COC. The capacity of training center was the second scale which composes five sub scales and was intended to measure the contribution and capacity of the training center whereas the third table was intended to measure different aspects during assessment. Cooperative training was also part of the scale in which the center environment, the time allocation for the practice, the supervisors, and the type of practice were measured regarding to its contribution to COC. The last table was used to measure assessor's efficiency, experience, preparedness and subjectivity.

In the study, the attitude subscale Cronbach's alpha was calculated and were found to be .68 and as is stated in the above paragraph, such reliability is minimally acceptable for use. Initially, the attitude subscales were 9 items and during reliability analysis for the sub scales it was found

to be below acceptable range and due to this, poor items were deleted and from the 9 items, only 5 were used for the analysis purpose. The reliability of cronbach's alpha for the capacity of training center and cooperative training were .85&.1 respectively. It was more than respectable and acceptable for use whereas for assessment and assessor, the cronbach's alpha is found to be .67&.77. These were also minimally acceptable and respectable respectively. Since the scale is developed by the researcher, the minimally acceptable reliability was applied for this study but the researcher does not recommend using scales with minimally acceptable reliability for other research purpose

The developed scale was used to measure occupational competency in two dimensions classified into five sub scales: attitude, efficiency of training centers and cooperative training, assessment and assessor. There are a total of 43 items for the five dimensions each with a subscale between five to nine items. All answered in the form of a 5-point Likert scale responses which ranges from 5=strongly agree,4= agree, 3= undecided ,2= disagree to 1= strongly disagree. Scoring on each subscale was calculated by summing up responses on each category of subscale items. For the negatively phrased questions reverse coding was used.

3.4 Data Collection Procedures

The school deans were approached through a written permission letter. The deans arranged the day and gave appointment for the researcher to come back after some days. On the appointed day, the researcher went back to those training centers and provided orientation on the purpose of the study and procedure to two persons who were assigned by the deans from each school. Then, questionnaires were circulated by the focal person of the data collection process to all subject of the study. Data were also collected at three health centers (Beletshachew, lideta and Teklehaimanot): which are found in Lideta subcity. The questionnaire was provided to pre-

selected candidates with an information and instruction on how to fill the data. Participants were told to take time and read the contents and instruction carefully before completing the questionnaire and to give the paper to the focal persons after completion.

3.5. Data analysis

In order to make the collected data ready for analysis, the questionnaires were checked for their completeness and the incomplete questionnaires were discarded. The SPSS 20 was used to analyze data. For the quantitative data analysis, competent and non competent health candidates were compared based on socio-demographic variables. The statistical test analysis used for this specific study is chi square and is applied to see whether dependent variable has significant relationship with the independent ones. Cross tabulation was also employed in order to see whether there is a significance difference between observed groups. Furthermore logistic regression analysis was used as regression is the most widely used statistical technique, to estimate relationships between independent variables and a dependent variable. Regression models can be used to help understand and explain relationships among variables; in which the size of the coefficient for each independent variable gives the effect that variable is having on dependent variable and the sign on the coefficient (positive or negative) gives the direction of the effect. As Boone, in regression with an independent variable, the coefficient tells us how much the dependent variable is expected to increase (if the coefficient is positive) or decrease (if the coefficient is negative) when that independent variable increases by one. This statistical analysis is chosen as the outcome variables have dichotomous or binary responses (competent vs not yet competent) and responses are qualitative. Both were used in order to see whether there is relationship between dependent variable (DV) and independent variables (IV). And p-value of .05 was used to determine the significance of relationships between variables.

3.6. Ethical considerations

In order to abide by the rule of research ethics, the initial step was information provision regarding the purpose and procedure of the study through oral and written form. As the most serious issue in research is privacy of participants, the current study was ensured all participants that the data collected from candidates would not be in anyway exposed to the third party. Information with questionnaire was outlined that during data collection, candidates were not obliged to write their names on the paper and there is no way of identifying which response came from which specific participant. A consent form with full information that describes the research purpose, address of researcher, benefits and risks of the research, voluntary participation and confidentiality was prepared in the first page of the questionnaire and provided to all study participants (See Annex C)

4. Result

4.1 Characteristics of Respondents

286 subjects selected from 3 training centers and cooperative trainings in Addis Ababa participated in this study. From these participants, the majority of the respondents (66.4%) were female candidates, and 83.6% were unmarried. The majority of the respondents (49.3%) are within the age range of 23 and 27. Majority of the participants (93.0%) were from private training centers and the rest 4.9% & 2.1% were from NGO and governmental colleges, respectively. Most of the respondents (50.3%) were level IV candidates. The majority of the respondents (47.2%) were from the field of nursing whereas the rest from the field of pharmacy, laboratory and midwifery nurse. About 69.6% of respondents were full time students, which are not engaged in any form of paid or unpaid work.

Table 1-Characteristics of Respondents

Category		Frequency	Percent
Sex	Male	96	33.6%
	Female	190	66.4%
Age	18-22	80	28%
	23-27	141	49.3%
	28-32	51	17.8%
	Above 33	14	4.9%
Marital Status	Married	47	16.5%
	Not married	239	83.5%
Type of training centers	Government	6	2.1%
	Private	266	93.0%
	Non-governmental	14	4.9%
Level of study	Level II	42	14.7%
	Level III	100	35.0%
	Level IV	144	50.3%
Employment	employed	54	18.9%
	Not employed	199	69.6%
	sometimes	33	11.5%
Education program	Regular	198	69.2%
	Evening	58	20.3%
	Summer	30	10.5%
First COC result	competent	208	72.7%
	Non competent	78	27.3%
Field of Study	Nursing	135	47.2%
	Pharmacy	55	19.3%
	Midwifery	59	20.6%
	Laboratory	37	12.9%

Table 2. Health Sector Candidate's Competency at Occupational Competency Assessment in Addis Ababa

Variable(N=216)		Competency in percentage
Type of Institution	Government	85.7%
	Private	75.9%
	NGO	61.5%
Sex	Male	80.2%
	Female	73.1%

As shown in table 2 above, the competency assessment result of Government colleges was 85.7% whereas the Private colleges and the NGO colleges were 75.9% and 61.5%, respectively. The government college's competency result is higher than both the Private and NGOs. But, when comparing the competency between male and female candidates, the male competency result was found to be 80.2%, whereas the female result was 73.1%.

As shown in Table 3 below, there is difference in competency assessment result across field of study. As the results indicated, candidate in nursing department are more competent (85.4%) compared with the other four departments, and it is in the laboratory field that candidates are less competent for COC (59.4%). Similarly, among the health candidates who undergo into different modes of study, the candidates in the regular mode of study are more competent compared to the others in the evening and summer modes of studies.

Table 3. Competency among Candidates at different fields of study and mode of study

Variable(N=216)		Competency in percentage
Field of study	Nurse	85.4%
	Pharmacy	74.8%
	Midwifery	77.9%
	Laboratory	59.4%
Mode of study	Regular	77.5%
	Evening	72.5%
	Summer	73.3%

Table 4. Logistic Regression of candidates who took occupational competency

Target Variables	b1	df	Sig.	Exp(b1)
Attitude	.187	1	.000	1.205
Capacity of training center	.330	1	.001	.719
Occupational competency assessment	.063	1	.242	1.065
Cooperative training	.185	1	.017	1.204
Assessors	.433	1	.000	1.542

As Table 4 above indicated, the contribution of the five target variables was, attitude of candidates, capacity of training center, occupational competency assessment, cooperative training centers and assessor were analyzed using logistic regression. The results indicated that the assessors, capacity of training, attitude and cooperative are significantly associated with

COC result, respectively. Whereas occupational competence assessment has no significant relationship with COC results. This indicates that these factors affect the COC results of candidates. This means that, the content, the clarity, the language and the time allocated for the assessment do not determine candidates COC result. It doesn't have any relationship to determine occupational competency assessment result of health sector candidates.

Table 5. Attitude difference between competent and incompetent candidates

First COC result	To continue education	To be hired	For future carrier	For nothing	a must as a criteria	total	P-value
Pass	55(25.6%)	68(31.6%)	27(12.6%)	11(5.1%)	54 (25.1%)	215	.001
Fail	21(29.6%)	12(17%)	1(1.4%)	5(7.0%)	32(45.0%)	71	
Total	76	80	28	16	86	286	-----

Table 5 above indicates that the majority of respondents(69.8%) who were competent at COC responded that occupational competency assessment is important either to continue further education, to be hired or for future carrier. About 48% of the respondents who were not competent in COC have responded that , COC is important for health professionals whereas the majority of respondents(52%) responded as it has nothing to do with professional importance and it should be taken as it is a must for a job or further education.

The observed difference of competency and attitude among health sector candidates was significant($p < 0.05$). Which means that the difference in results is not due to chance but there is a real difference between those who were competent and were not competent in relation with their attitude. Those who have positive attitude towards assessment were competent whereas those

with negative attitude to assessment were not competent at their first COC assessment. Therefore, this shows that there is significance difference between those candidates with positive attitude and candidates with negative attitude. This indicates that attitude affects occupational competency of candidates.

4.2. Attitude

Competent candidates are always looking for ways to become more successful, to succeed more and with greater assurance. And, for centuries authors have been sharing the factors that help anyone reach their goals is related with positive attitude. As the finding in the preceding tables indicated, those who believe in the importance of COC are the most achiever at assessment whereas non competent candidates were those who think assessment is nothing to do for them. Therefore candidates with positive attitude for occupational competency assessment are likely to be competent enough on assessment. Attitude is defined as beliefs, values, traits, and motives. It is also defined as the desire to accomplish. Competencies are not only knowledge, skills, and abilities of marketing personnel to attract and retain customers by delivering quality service, but also observable behaviors. The findings indicated that there is negative attitude towards the overall occupational competency assessment of the health field. Respondents have an attitude of ignoring the importance and value of COC in contributing to quality of education. They also have thinking that the occupational competency assessment by itself don not measure competency of professionals. Being happy on the study field is also related with attitude and if candidates are not happy on the profession, it affects their achievement. The positive attitude enables the positive behaviors and the behaviors created

from the positive attitude sets mind accordingly. This mind setup will enable candidates to focus on the assessment that indirectly produces results/achievements.

4.3. Capacity of training centers

Achievement is related with the capacity of training centers. Capacity is defined in terms of the structure of training centers, quality and quantity of equipment, the time devoted for training and practice. It also involves other package of institutional assessments that prepares candidates ahead of time before the actual assessment. Follow up from supervisors are also contributes as capacity of training centers. Based on this, findings indicated that capacity of training centers has direct and strong influence for achievement of candidates at COC. This shows that if there is capacity gap in the training centers, there will be small number of candidates who are competent enough at assessment as it affects positively and negatively as well.

4.4. Cooperative training

Cooperative training has linkage with competency at COC. It is the engagement of public and non public institutes to make places open for apparent ship. Availability of materials at cooperative training, staffing, supervision and regular follow up contributes for competency result.

4.5. Assessor

The findings in this study indicated that subjectivity of assessors is one factor for incompetency of health sector candidates for occupational competency. Candidates were judged by a single assessor rather than a group of assessors with in a pool. Assessor's inefficiency and inexperience

in assessing process also affect assessment result. Assessors do not come being prepared during assessment and also bias of assessors have great contribution on the scoring. Un-ethical behaviors of assessors affect assessment result as there are some who exchange grade for money that makes assessment unbalanced.

5. Discussion

Regarding competency of candidates, capacity of institution plays a major role for candidates' success in COC. If training centers are equipped with the necessary and advanced resources, candidates are more likely to have high scores. Managing the quality of institutions across training centers, curriculum content and trained staffs have positive contribution for large number of candidates to be competent (Assessment guide, 2010). Based on this information, the government health training centers precedes that of private and NGO so that it has favorable conditions to accommodate well trained staff, well suited system and more advanced training materials. It also incorporates efficient resources, more competent students. The system also supports candidates at government training centers to access practical sections easily when compared to the private ones. Despite the correlation observed between competency and type of centers, there might be other factors that contribute positively like the expectation of candidates, candidate's devotion and conducive assessment environment and etc.

Attitude

Competencies are observable behaviors, knowledge, skills, and abilities (Zelege, 2007). People by nature shared the belief that "I did it when they passed and externalize their weaknesses when they failed in assessment. Most of the time candidates attributed their incompetency with examiner/assessor incapability, unfair judgment or lack of experience. Low time for assessment. According to classical test theory, error is related with different influences that can affect candidates at the specific moment of taking a test. At this moment of test taking, candidates may have fear related with an attitude of lacking chance for the exam or lack of confidence and a feeling of failures. Thus, as the findings indicated, negative attitude is highly related with

occupational incompetency of candidates. There are also some in the literature that indicate achievement is related with applicant's mental or physical state like motivation, alertness or anxiety that is developed with mind setup that is the attitude of individuals (Assessment guide, 2010). Competent candidates have responded that COC is important for health professionals as a precondition to job, future carrier and for further education whereas , non competent candidates have an attitude that assessment of health professionals have nothing to do for health candidates, but rather it should be taken because it is a must (set by TVET). There are assumptions that it may be because of this negative attitude that most candidates could not be competent, of course there may be other driving factors.

As the findings by Weiner's (1986) indicated, positive attribution is related to competency, negatively oriented students attribute success to luck and failure with low ability or other external reasons. Local studies have also indicated that candidates have negative attitude for COC as it narrows the opportunity of job, obstacle for further education, a killer of time and moral of professional and moreover, it is a means of gathering money for government bodies.

The research on this specific study has similar finding as that of local studies carried out by OCAAC (2011). It has clearly indicated that performance is a combination of competencies and attitude. It also explains competency as behaviors that encompasses skills and knowledge that required for performance. Thus, findings on attitude share the same idea with the previous local study which in turn indicates that as attitude is one of the major components of performance, it is important to give considerable attention about methods employed for changing attitudes in performance interventions.

Training centers

Institutional assessment at training centers, more practical sessions at the center, availability of enough training materials in quality and quantity contributes for the quality of training. Training centers have played major role for competency and have direct correlation with achievement. Number and quality staffing has also strong linkage with competency. Resource coordination and allocation for practices, building the capacity of trainers contributes achievement at COC. Findings show the contribution of capacity of training centers for achievement. There are assumptions that government training centers have large number of competent candidates because training centers are equipped with the necessary training materials, have enough financing and resource materials when compared with private centers. The other assumption in relation to capacity, the skill, experience and motivation of trainers across government training centers could be one factor that contributes positively for COC result. According to OCAAC 2012, centers are authorized to properly equip with the necessary staffs, technological equipments, tools and materials which are required in the administration and education for outcome assessment. Therefore, if all the necessary equipments are fulfilled, capacity of training centers will be assured.

Cooperative training center

Continuous and supportive supervision of candidates when they are at their placement have linkage with assessment results. If candidates are able to be managed during their practical time and if they are exposed exactly on what they learnt at training centers, there is less possibility of being non competent regardless of other factors that affect competency, conducive environment, limited number of candidates at practice and equivalent training at cooperative training affects positively or negatively the competency of candidates for COC.

Assessor

Occupational competency is related with assessor/examiners. Bias, judgments, experience of assessors, fairness and lack of standard among assessors create subjectivity and are one contributing factor for incompetency of candidates. Previous study has also indicated that the inconsistency nature of people, assessor's bias affects test results. The current study indicated that not only bias of assessors but also decision by a single assessor could also be one factor for subjectivity. According to Evans (2008), factors that affect assessment are mentioned as; the inconsistent nature of people, reliance on assessors to make judgments without bias, changing contexts/conditions and evidence of achievement arising spontaneously or incidentally.

6. Summary, Conclusion and Recommendations

This chapter provides the summary of the major findings and conclusions of the study. The first section of the chapter begins with the brief overview of the research agenda, followed by summary of the empirical findings of the study vis-à-vis the research questions posed in chapter 1. Finally, conclusions of the study are drawn and thereby recommendations are forwarded.

Summary

The purpose of this study was to identify factors that influence occupational competency of health sector candidates at Addis Ababa. A descriptive survey method was used in this study. The research questions posed in chapter one under the statement of the problem (see section 1.2) were addressed based on a review of the literature and the synthesis in Chapter 2, and empirical data derived from the health science training centers in Chapter 4 using both quantitative and qualitative research approach. While employing the mixed method approach, more emphasis was given for the quantitative one. A critical review of the scholarly literature was undertaken to conceptualize occupational competence itself and then to broadly map its application in different fields of specialization including health. The ultimate goal is to identify key variables that influence the issue under study at the training institutions.

As occupational competence is a multifaceted phenomenon, it requires the collection and analysis of data drawn from diverse sources and different actors using multiple methods. Accordingly, we gathered data through questionnaire and interviews from purposefully selected three private health science colleges and three government health centers at Addis Ababa. Data were collected from 286 respondents through questionnaire. A total of 12 people were also interviewed (see the interview questions under Annex I). The population of this study was health

sector candidates who have undergone assessment and the target population taken was candidates at private training centers and candidates who were on apparent ship at Government health centers. The technique used for selecting respondents was a systematic random sampling in which both probability and non probability sampling was employed. Additionally, several documentary evidence such as national law, regulations, development strategies and research outcomes were gathered, which mainly cover the period 2008-2011/112. In terms of data analysis, SPSS version 20 was used to answer the basic research questions of the study.

One of the major findings of this study was that there is correlation between occupational competency and capacity of training centers that has effect on candidate's achievement during training. There is also relationship between competency and assessor/ examiner during the assessment period. Moreover, attitude of candidates towards the assessment process has correlation with competency and non competency of candidates. There is relationship between occupational competency result and attitude of candidates towards COC. Feeling of failure, valueless conception of COC, and providing less importance for the assessment process make candidates incompetent, which can lead to fail in the assessment. Candidates who believe that assessment tools cannot measure skill are more likely to be non competent, but candidates having a positive mind setup are competent enough when compared with candidates with negative attitude. This means that attitude has positively and negatively association with competency result of candidates.

Conclusion

From the above findings, one can conclude that there is relationship between occupational competency and attitude of candidates. This study reveals that health sector candidates have attitude problem towards COC. This might emanate from their limited awareness about the importance of occupational competency assessment designed by the government.

This study has clearly indicated that there is a correlation between capacity of the training centers and assessment results. Although variations have been observed on the capacity of health science training centers in this study, most training centers were unable to prepare their students for assessment due to capacity limitation.

Cooperative training has a positive association with occupational competency result. There are also gaps on cooperative training centers, which are mainly reported as lack of proper practices, follow up and supervision, insufficient practical time, and lack of equivalent practice at cooperative trainings.

The final conclusion is related to subjectivity of assessors that influence occupational competency result of candidates. More specifically, inexperience, inefficiency, lack of preparedness and being only one assessor (not becoming team) were major contributing factors that influence occupational competency of health sector candidates.

Recommendations

Overall, this study clearly indicated that many of the candidates, institutional and other external factors such as assessor efficiency and skills and cooperative training centers influence occupational competency assessment results. To deal with the shortcomings identified in this study, the following recommendations are forwarded.

- 1.** Provision of institutional assessment- It is best practice and would be continued and have to be scaled up in training centers that do not incorporate in school pre-assessment.
- 2.** It would be better if OCAAC recognizes assessor's subjectivity and plan to make assessment decision by a group of assessors. In addition to this, it is recommended to make assessors to be well prepared before coming to the assessment center, TVET to train assessors in refresher training so as to make them more skillful.
- 3.** During cooperative training, training centers should work in collaboration with other centers so as to avoid clashes for practical sessions. Small number of candidates should be assigned on apprenticeship so that each candidate will have exposure in all type of practical activities
- 4.** Recommends TVET agency to make a sudden visit of licensed training centers to monitor capacity and quality of training centers.

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