EFFECT OF COMPENTENT BASED EDUCATION AND TRAINING FOR CLINICAL OFFICERS IN IMPROVING QUALITY OF HEALTHCARE DELIVERY IN TANZANIA

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CERTIFICATION

The undersigned certifies that he has read and here by recommends for acceptance by The Open University of Tanzania a dissertation entitled, Effect of competence -based education and training for clinical officers in improving quality of healthcare delivery in Tanzania. In partial fulfilment of the requirements for the award of Degree of Master of arts in Monitoring and evaluation (MAME) of the Open University of Tanzania

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DR. HARRIETH G. MTAE

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DATE

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DECLARATION

I **Yusuf Abdulrahman** declare that, the work presented in this dissertation is original. It has never been presented to any other University or Institution. Where other people's works have been used, references have been provided. It is in this regard that I declare this work as originally mine. It is hereby presented in partial fulfilment of the requirement for the Degree of Master of arts in Monitoring and evaluation (MAME)

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Signature

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Date

DEDICATION

This work is dedicated to my lovely family and to all tutors training middle cadre level.

ACKNOWLEDGEMENT

I'm significantly and exceptionally appreciative to All-powerful God for benefiting me strength and readiness to seek after this challenging responsibility. Unique thanks should go to my family and all individuals with whom I have worked with for the whole time of the study. This study was profoundly enriched by Dr. Harrieth G. Mtae, of the Open University of Tanzania for his directives, research Artisanship and tireless efforts .To her, I have debts I can never repay.

ABSTRACT

The study on effect of competency based education and training clinical officers to improve quality of healthcare delivery in Tanzania by assessing CBET in clinical officers training institutions in practicum sites. The study was guided by four goals; to asses students 'perception and practice in practicum sites, to determine availability of clinical instructors used for training, to determine availability of monitoring tools used and to identify barriers that imped training in practicum sites. The study adopted the cross sectional research design where questionnaires were used as data collection tool. The study uncovered 23.6% of students are not attending daily ward round, Some of clinical instructors were not around during clinical practices, majority of students were not aware of or having essential clinical guideline and more than 40% of students agreed that inadequate clinical instructors, large number of students in practicum site, few patients for learning in practicum site, inadequate learning materials in practicum site, inadequate time for practice and long distance to practicum site were barriers that impend training in clinical sites. There is a need of common standardized tool to be used by various stakeholders. It is advised that more days are expected for clinical instructors to train students during hands on work practice and other approach such as preceptor corners should be used in practicum sites. It has been recommended that; Giving customary and periodical supplemental class on CBET educational plan method of instructing, appraisal and assessment to clinical instructors and new employees wherever they are enlisted to join the preparation.

***Keywords**: Competence Based Education, Healthcare, Practicum site, clinical officers*

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LIST OF ABBREVIATIONS

AIDS	Acquired Immunodeficiency Syndrome
BRN	Big Result Now
CBET	Competency based Educations and Training
COHAS	College of Health and Allied Sciences
COME	Community oriented medical education
EM	Emergency Medicine
FBO	Faith Based Organizations
HTI	Health Training Institutions
MOH	Ministry of health
NACTVET	National Council for Technical and Vocational Education and Training
NBS	National Bureau of statistics
RBF	Result Based Financing
RHMT	Regional health Management Team
WHO	World health organization

CHAPTER ONE

INTRODUCTION

1.0 Background to the study

Tanzania is one among the nations in sub-Saharan Africa with serious human asset emergency incapable to meet population demand (WHO, 2006), this deficiency changes across various regions in the country with rustic regions being impacted more contrasted with metropolitan regions, shifts from 1:22,000 in Arusha to 1:308,000 in Kigoma (MOHS/IHI/WHO, 2013) all this are far from WHO recommendation of 1:10,000 doctor to patient ratio.

In 2005 the government of Tanzania introduced training curriculum in health training institutions (HTI) for Clinical officers' cadres and in 2008 gain momentum to fill the roles left behind by medical doctors. Ministry of health launched competency based education and training curriculum for health professionals with the vision of 2025 to produce quantity and quality healthcare workers equipped with knowledge and skills (Mmari, 2019).In 2014 Ministry of health human resource for health strategic plan 2014-2019 showed that there was a shortage of 56 percent of health care workers, estimate about 35,202 professionals healthcare workers in public sector represented 90,722 fewer than what was required. This crisis leads to bypass of patients from lower level health facilities in favor of hospital (Fredrickx, 1998). Patient contribution in medical care understudies' learning is fundamental in giving down to earth chances to encounter clinical thinking and practice. These pivotal learning open doors are expanded when understudies meet a few patients (NACTVET, 2022)

According to National Bureau of statistics(NBS) and 2015-16 Tanzania Demographic and Health survey showed that HIV/AIDS, ischemic heart disease, Tuberculosis, Congenital defects, Diarrheal diseases, Stroke, Malaria and Diabetes are top ten causes of death in Tanzania. Infants mortality rate is 43 national wide more in rural compared to urban areas, Births assisted by skilled health personnel was about 64 percent more in urban areas for about 87 percent and 55 percent in rural areas and prevalence of malaria in rural areas is about 18% compared to urban areas. Improving these indicators of health is multifactorial but competent health workers are important to increase life expectancy above 67 years. The reason for maternal death rate, newborn child death rate and grimness basically results from the failure of wellbeing framework to manage intricacies. The accessibility of trained healthcare workers is basic in guaranteeing top notch of medical services conveyance (Nancy, 2006)

Practicum destinations assume an imperative part in building and reinforcing clinical capabilities of students broadly supposed to give excellent consideration including the treatment of uncommon illnesses and complex patients. Patients have an interest in realizing whether medical clinics offer added benefit through a more excellent of care though the results have not still up in the air (Ayanian, 2002). According to Tanzania clinical medicine curriculum and NACTVET (2022); hospitals, health centers and dispensaries are recommended practicum sites for clinical officers' students to acquire competencies. Current number of students (45,615) in allied sciences institutes is multiple times the size of the accessible limit of medical services facilities to give clinical placement (10,227) despite everything muddled about learning conditions whether are viable with educational program NACTVET (2022). Lack of

responsibility is one of the ongoing concerns and the use of attendance and other tools for monitoring students is relevant to classroom based activities however less so with clinical activities (Deane, 2016). Monitoring tools are both management tools and a powerful feedback mechanism that may need to rely on multiple systems to compare and monitor the relevant indicators during and after training. Insufficient valid planning is a main driver of capability shortages and poor health outcome in health system (Nyamtema, 2022)

1.1 Problem statement

Quality of health has been a major concern in achieving universal health coverage which accentuates on quality, accessible, affordable and equitable health service (El-Jardali, 2016). Current data for indicators of health in Tanzania for maternal mortality rate, infant mortality rate and morbidity are unacceptable compared to number of enrolled and graduating students as work force from HTI with a special sensitivity to the efficiency of the health systems. According to NACTVET 2022 mushrooming of health and allied science (192) institutes together with number of student population (45,615) is multiple times the size of the accessible limit of health care facilities to provide clinical placements (10,227). Number of employed doctors and learning environment both in HTI and hospitals are insufficient and still unclear whether are compatible with current curriculum. Existence of different monitoring and evaluating tools from NACTVET, MCT and MOH within the same learning environment is also alarming whether recommended standards required to ensure skills and competency are attained during training. Manzi (2016) uncovered that scale-up of fundamental quality health services relies on presence of basic resources

including health workers, buildings, consumables, good management and leadership. Despite constraints facing quality of health services the government of Tanzania in health sector strategic plan IV had launched a number of programs including Big Result Now(BRN) ,Result Based Financing(RBF) and routine supervisions (conducted by RHMTs, CHMTs) to encounter challenges poor management of patients at primary health care. In view of these efforts of the government, this study will prompt understand the impact of competence based education and training for clinical officers in working on quality of healthcare delivery in Tanzania.

1.2 Research objectives

1.2.1 General research Objective

The effect of competence -based education and training for clinical officers in improving quality of healthcare delivery in Tanzania

1.2.2 Specific research objectives

i. To asses students ‘perception and practice in practicum sites
ii. To determine availability of clinical instructors used for training in practicum sites
iii. To determine availability of monitoring tools used in practicum sites
iv. To identify barriers that imped training in practicum sites

1.3 Research questions

To accomplish the above expressed objective the following questions will be answered by this study:

i. How do students perceive and practice in practicum sites during clinical rotation
ii. How does availability of clinical instructors used for training in practicum sites?
iii. How does availability of monitoring tools used in practicum sites?
iv. What barriers that imped training in practicum site?

1.4 Significance of the study

The fundamental responsibility of the public authority is to guarantee solid training establishment keep up with standard and quality in organizing health education. Due to the importance of training in provision of quality health education, the MOH has made efforts to strengthen the operations of mid-level health training institutions along with teaching hospitals. During practical training of students to get knowledge and competencies in these HTI alone is not sufficient, different resources and monitoring mechanism is needed to ensure the quality of healthcare workers. However Health training institutions need to ensure the availability of students, qualified clinical instructors and other resources are implemented but unfortunately there are no standardized tools which monitor implementation of quality in these institutes. Information acquired from this study will be vital to the government and other stakeholders not only to support training implementation fully, but also develop a tool which will assess students' clinical activities in these training institutes.

From this study the MOH will find means to improve training standards and ability to identify the quality of training in every institution in Tanzania and timely acting upon those instructions that fail to meet training standard. Curriculum developers', professional board and evaluators i.e. NACTVET, MCT and MOH will use this study to facilitate education and training easily be implemented by all health training institutions together with teaching hospitals without many obstacles and compromising standards at the same time.

The study will also empower the stakeholders in training organizations and help them understand the need of allocating more funds to employ more doctors, increasing facilitation materials as well as to have reasonable number of students per tutors and patients especially in private institution to assist in clinical practice training as well as supporting teaching hospitals in their regions.

CHAPTER TWO

LITERATURE REVIEW

2.0 Overview

This chapter centers around a few existing literary works connected with the proposed study. It first begins by defining the key terms by providing their operational definitions. Theoretical literature review featured in the conceptual framework is then provided for the study. The section then provide the empirical literature review which focuses on various study completed to around the world on effect of competence based education and training for clinical officers resulted into increase in quality of provision of health services. Thereafter research gap which portrays the unstudied measure or area and finally the conceptual framework describing relationship of variables

2.1 Definition of key terms

2.1.1 Quality of health care delivery

Appraisal and arrangement of compelling and safe consideration, reflected in a culture of greatness, bringing about the fulfillment of ideal or wanted wellbeing. This analysis proposes a conceptualization of medical services quality that defines its implied foundational components and has potential to improve the provision of quality care (Duck, 2017). According to Mosadeghrad (2013) define quality of healthcare delivery as "consistently delighting the patient by providing efficacious, effective and efficient healthcare services according to the latest clinical guidelines and standards, which meet the patient's needs and satisfies providers". Throughout this study (Mosadeghrad, 2013) is used to define quality of health care delivery

2.1.2 Practicum

.According to Tuli (2009) define practicum as a site where students-instructors practice the specialty of appearing in registered institute setting in which allocated instructors utilize explicit block of time that permit students to investigate current work place conditions, interior and outside factors influencing current structural hierarchical features and the effect of institute scheduling processes on tutorial corresponding to curriculum. In this study Tuli (2009) definition is used to define practicum.

2.1.3 Competency Based Education

CBE is result based method to training that consolidates means of educational conveyance that intend to asses learning domains by students during clinical practice that should be attained for professional required. (Gervais, 2016). Throughout this study (Gervais, 2016) is used to define Competency Based Education

2.1.4 Clinical officers

Type of mid-level cadre, might be a reasonable response for bringing doctor type assistances nearer to individuals that need them while long stretch solutions for choosing and holding qualified experts particularly in remote areas are looked for (Mbindyo, 2013). In this study a clinical officers are qualified health professionals capable of providing health care at the community level.

2.2 Review of the theory

This study embraces the skilled proficiency and technique of competency based method in training by professional theoretical approach. Even current colleges all over the planet are attempting to decide the basic requirements of competent professionals and the model graduates to a rapidly changing world to attain and explore the market. (Makulov, 2015). Competency based education and training for clinical officers has likely to improve quality of healthcare delivery and reduce health gaps. Even if many students struggle with clinical practice, even in framework with far and wide of hospitals. The current theoretical frameworks that addressing to improve quality of healthcare delivery focus on availability of clinical instructors used for training, availability of monitoring tools used and barriers that imped training, albeit such boundaries are negligibly adaptable in mark of clinical practice. Professional Competence and the Methodology of study is utilized here address to give a few bits of knowledge on how the entrance parts inside the clinical space work to improve healthcare delivery.

2.3 Empirical literature review

2.3.1 Students' perception and practice in practicum site

According to Abraham, (2022) conducted a study in Emergency Department (EM) at five university-affiliated hospitals; USA used prospective, qualitative observational study of consecutive medical students on first and second year electing to do a pre-clinical. The study found overall, 71.1% were portrayals of commendable examples of moral issues, 13.9% were viewed as typical collaborations, and 14.9% were considered as immoral manners. Many of these ethical interactions seem to

connected to the student's role as an observer of the health care team and how that role can lead to ethical tension. The researcher suggest educators need to shine a light on the subtle ethical issues that clerkship students struggle with daily and give them practical tools to deal with moral decisions required of them in medical practice.

The study by Getie(2021), on clinical ability and related factors among undergraduate nursing students studying in universities of southern regional state of Ethiopia. Study used Institutional-based cross-sectional design and the overall magnitude of clinical competency was viewed as unacceptable (59.9%). Unfortunate staff-student relationship, low fulfilment and negative attitude towards clinical practice were perceived as components related with clinical ineffectiveness.

Another Study conducted by Fariba, 2010 at Tehran University of Medical Sciences concerning medical ethics cases by recording in the logbooks of medical students. A cross-sectional approach was employed and the most widely recognized issues revealed were ethics during training by 20.1%, 18.8% professionalism and 7.6% confidentiality. Professionalism and related parts address one of the main areas of concerned that need to be addressed while organizing courses for medical students that revealed by this study results.

2.3.2 Availability of clinical instructors used for training in practicum sites

According to Getie (2021), conducted study at Southern regional state of Ethiopia concerning clinical competency and associated factors among undergraduate nursing students, generally the extent of clinical practice ability was viewed as inadmissible by (59.9%) using institutional based cross sectional study design. Unfortunate student- staff association and low fulfillment and negative disposition towards clinical practice were recognized as variables related with clinical inadequacy.

Establishing helpful clinical learning climate and integrating students with clinical staffs to work with learning and uplifting perspective difference in students towards their calling to expand level of fulfillment was recommended.

Also Gemuhay (2019) on factors affecting performance in clinical practice among pre service diploma nursing students in Northern part of Tanzania,84.4% of nursing students agree that clinical situation increase students adequate chance for bed side learning. 70.1% of the respondents report boundaries to successful clinical learning and the obstructions incorporate students' factors such as absenteeism and absence of self-assurance, school factors such as inappropriate supervision and unfortunate planning of clinical instructors. Students' elements and practicum based factors assumed a significant part to impact clinical growth opportunities. Offering preclinical course, conveying and explaining clinical learning targets to students, and regular visits and supervision in practicum site may further develop students' opportunity for growth in clinical placement.

2.3.3 Availability of monitoring tools used in practicum site

According to Deane (2013), in study conducted publicly funded university teaching hospital in Dublin, Ireland based on academic performance and student attendance in undergraduate Obstetrics/Gynaecology clinical rotations. A prospective cohort study design was used and the researcher found that 60% of disappointment grades appeared to those students with poor attendance below 80% at the 8-week of obstetrics/gynaecology clinical rotation. Attendance at clinical and lecture sessions was emphatically associated with overall assessment scores.

Then again, results from a study done in Estonia by Taba (2012) on implementation clinical practice guideline based on barriers and facilitators, Cross-sectional survey was employed and reveals 79% of respondents in their regular clinical activities use treatment guidelines. Utilization of refreshed proof based guideline is a fundamental for the excellent treatment of cases and perceiving the variables that influence guideline consistence makes it conceivable to pursue further developing guideline devotion in clinical practice. Accomplished by the outcomes regarding the study, leading health authorities are trying to foster uncommonly planned intercessions to carry out clinical practice guidelines, counting an effectively available web-based data set.

According to Ulyanova (2020) on study done at the Altai State University (ASU) and Altai State Pedagogical University, concerning the importance of self-monitoring among students having special medical needs in physical education classes. Students in the control and experimental groups were assigned questionnaires and comparative analysis revealed 39.5% of experimental group answered absolutely compared to control group. Investigation of the outcomes proposes that students who have not gone in-depth review and use of self-monitoring in actual training classes have irrelevant hypothetical information on restraint. In any case, they basically don't connote them and can't apply them. It was noticed that all issues are connected with self-monitoring diary.

2.3.4 Barriers that imped implementation of clinical practice in health training facilities

According to Jamshidi, 2016 conducted study at University of Medical Sciences, Shiraz, Iran on the challenges of nursing students in the clinical learning environment. Qualitative research involved content analysis resulted in three themes after analyzing data comprises of inadequate communications, lacking readiness, and profound responses. Medical students in Iran encountered a lot of barriers in the practicum sites apart from those three theme emerged from the study. Attention on students correspondence and psychological needs need to be praised by their clinical instructors. Same arguments were also noted by Getie (2021) who reveal that the generally extent of clinical skills were viewed as unacceptable and concentrating on in private program, non-favorable clinical learning climate, unfortunate staff-understudy communication, low fulfillment and negative mentality towards clinical practice were distinguished as variables related with clinical ineptitude.

The study by Addisie (2022) in Addis Ababa city, Ethiopia concerning clinical placement's challenges faced by nursing students, Cross-sectional study involving phenomenological was engaged and viewed that prevalence rate of challenges was 16.9% among the students.college responsibility, inadequate equipment, lack of communications, poor support and clinical instructor's guidance were arisen. Study Suggested to improve and plan on students' practicum sites and support at clinical setting by their facilitators and medical staff to make competent nursing students and reduce their challenges. Similarly Gemuhay et al (2019) also noted that barriers to active clinical learning was reported by 70.1% of the respondents report boundaries

to successful clinical learning and the obstructions incorporate students' factors such as absenteeism and absence of self-assurance, school factors such as inappropriate supervision and unfortunate planning of clinical instructors. Students' elements and practicum based factors assumed a significant part to impact clinical growth opportunities. Offering preclinical course, conveying and explaining clinical learning targets to students, and regular visits and supervision in practicum site may further develop students' opportunity for growth in clinical placement.

2.4 Research gap

The literature reviewed concerning effect of competence based education and training for clinical officers in improving quality of healthcare delivery has been introduced. It has been found that there is correlation between clinical officers training through competency based education and training approach. However, there is no clear strategy for HTI to implement properly competency based education and training for clinical officers as 60.3% differ that instructors invested sufficient energy for tutoring during clinical learning, 66.4% of the participants differ has adequate materials to conduct the practice and 43.3% of poor monitoring system during clinical rotations (Getie, 2021). The intention of this study is to assess the outcome of competence based education and training for clinical to improve quality of healthcare delivery in Tanzania. Most of graduates from clinical officers training institutes are equipped on knowledge based education and CBET curriculum is lowly being implemented especially on practicum sites. Nature of practicum sites, monitoring tools and guidelines together with availability of clinical instructors are crucial of clinical practice that may leads to poor acquisition of competencies among students.

Quantitative and qualitative methods were used contrary to this study which employed only quantitative. Hence uncovered methodological and contextual gap

2.5 Conceptual framework

A conceptual framework is depicted as a bunch of wide thoughts and principles taken from significant fields of enquiry and used to structure subsequent presentation. At the point when obviously expressed, a conceptual framework has forthcoming convenience as a tool to platform research and that help a researcher to make importance of resulting discoveries (Smyth, 2004). Prior to development of this conceptual framework, the researcher conducted analysis of literatures on competence based education and training in improving quality of healthcare delivery. The researcher had established this conceptual framework by considering quality framework designed by Donabedian also known to majority of quality medical research that represents the instinctive connection between three related ideas (McDonald,2007) i.e. First Structures characterized by physical and authoritative parts of care settings (e.g., gear, staff, functional, offices, and monetary cycles supporting clinical consideration, etc.). Second, the courses of students at the center of the illustration since they depend on the patient care activities and three outcome of teaching that involve patient's health status.

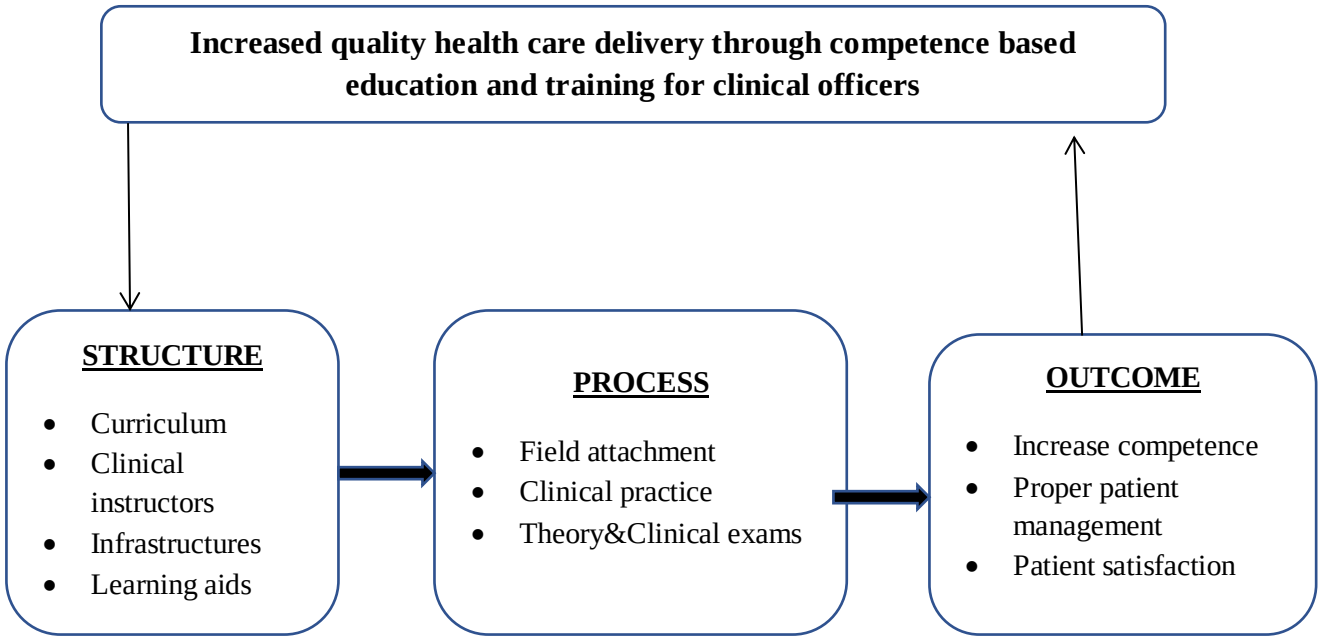


Figure 2.1: Conceptual framework Increased quality health care delivery through competence based education and training for clinical officers

Source: Modified from Agency for Healthcare Research and Quality

2.6 Policy review

2.6.1The National health policy 2017

National health policy of United republic of Tanzania derived to improve quality of health services through planning of fundamental health care delivery that are of good quality, available, reasonable, gender sensitive, fair and feasible(The National health policy 2017). However, qualified health care workers and some in health facilities remain inadequate. Also, there is insignificant emphasis on vulnerable group to be more receptive to the requirements of individuals to increase life expectancy through quality medical care (The National health policy 2017).

The policy based in strengthening training competent health care providers to curb the need for expertise in providing quality health care services. Dimness implementing of CBET curriculum that advocate Clinical and practicum competencies of future trained health workers.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Overview

This part distinguishes the overall features and qualities of the study and the methodology which was employed in the assortment, handling and analysis of data with respect to implementation. It focuses on the research design proposed and clarifies plan and methodology used during conduction of the study to carry out the following parts: area of the study, population of the study, sample size, sampling techniques, methods of data collection and techniques of data analysis and presentation. It fills in as a scaffold between research questions and execution of the study, making sense of how the researcher plans to lead the exploration.

3.1 Research design

This study employed a cross-sectional research design in which information were collected. Cross-sectional is beneficial as describe a variable “taking a snapshot” of a gathering of people at a solitary point in time and also distinctive since researchers are able to look at numerous characteristics at once (Julia, 2023). Quantitative method was employed when generating data from respondents by administering questionnaires to a sample of individuals.

3.2 Study area

3.2.1 Geographical Location

This study was done in Kinondoni district which is located in north west of Dar es Salaam's focal business area in Tanzania ,others being Temeke (to the far Southeast) and Ilala (downtown Dar es Salaam). Toward the east is the Indian Sea, toward the north and west is the Pwani region of Tanzania. The area of Kinondoni is 537 km2.

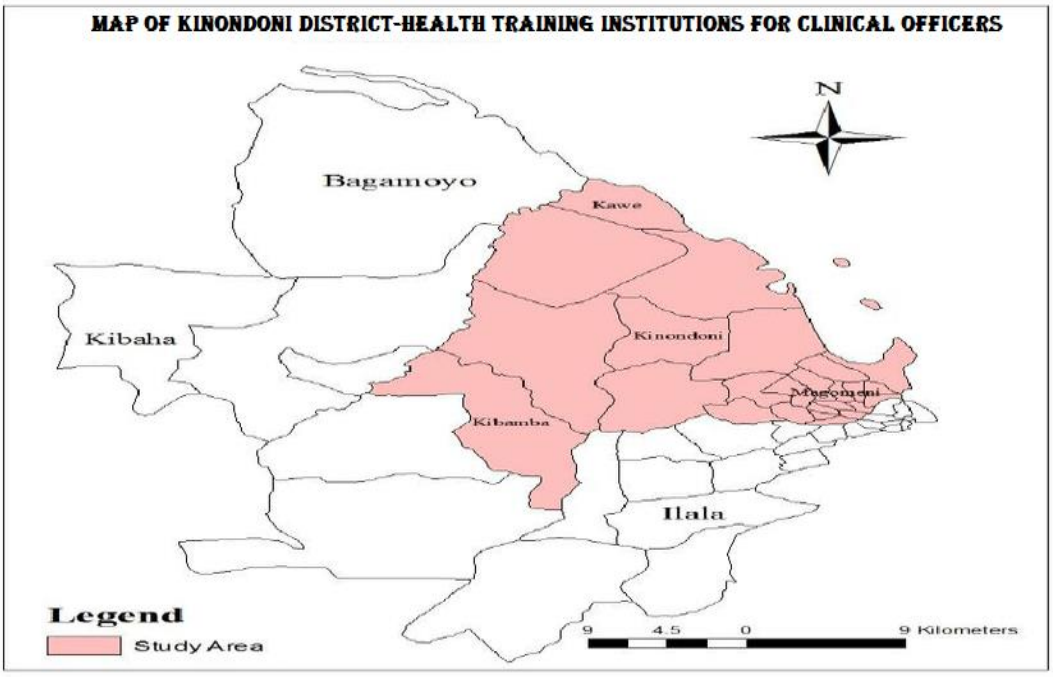
3.2.2 Area and Population

The District has a comprehensive area of 321 square kilometers. As per the 2012 populace Enumeration, the District had a populace of 929,681 where male were 451,653 and female 478,028. The populace is projected to be 1,245,861 out of 2018 where by male are projected to be 605,258 and female 640,603 with a development pace of 5.0% per annum.

3.2.3 Health Services

Health services are accessible through Kinondoni Municipal council in collaboration with private sector. The district presently has a total of 188 health facilities of which 27 are government owned, while the remaining 161 are owned by private.

Figure2.2: Map Study Area



Source: Kinondoni Municipal Profile 2018

3.3 Study population

As per data which the researcher accumulated from principals of four selected health training institutions, show that Excellent College of Health and Allied Sciences had 90 NTA level 6 students, Santamaria Institute of Health and Allied Sciences 54 NTA level 6 students, St. David College of Health Sciences 42 NTA level 6 students and KAM College of Health Sciences with 69 NTA level 6 students which make all out of 255 as the objective population.

3.4 Sample size

Sample size was obtained by using formula as for descriptive research, Yamane (1967) simplify how to get sample size by inverting simple and accurate formula of obtaining required sample size. This formula was used to calculate the sample sizes different combination of levels of precision, confidence and variability. P = 0.5 at 95% confidence with level of precision, e=10% are assumed.

$n = N / [1 + N (e)^2]$

Where e is the level of precision, N is the study population which is 255 and n is the sample size.

Then, when the formula is applied

$n = 255 / [1 + 255 (0.1)^2]$

n=72

Hence72 was the sample size used by this study.

Therefore sample size from the study population from selected HTIs was in a distribution of 25 Excellent COHAS, 15 Santamaria COHAS, 12 St. David COHAS and 20 KAM College of Health Science.

Table 3.1: Distribution of participants

Targeted Group	**Expected No.**	**Sample Selected**
Registered NTA level 6 students	255	72
Health Training Institutions	12	4

Source: Researcher's Computation, 2023

3.5 Sampling technique

3.5.1 Purposeful sampling method

Purposive sampling was employed in selecting health training institutions offering clinical medicine program with NTA level 6 students involved in study. In purposive sampling, to get a sample where researcher used capacity to pick explicit respondents that assisted the study to attain its objectives. These subjects have specific qualities that the researcher needed to assess research question (Frost, 2023).

A researcher chooses only element that was able to deliver the required data from HTIs offering clinical medicine program with NTA level 6 students, explicitly picked since they can give a researcher a lot about issues that are of significance to the research (Boeije, 2009). With this study 4 Health training institutes offering clinical medicine with NTA level 6 students was selected using purposive sampling technique among 11 of health training institutes in Kinondoni district.

3.5.2 Systematic random sampling method

NTA level 6 students from health training institutions as respondents were selected by using systematic random sampling methods by a researcher. To reduce bias during selection a list of NTA level 6 students were requested from the head of HTI by a researcher and respondents were chosen by selecting every 3rd student on a list of the registered students in requires academic year. Those who selected on every 3rd students on a list of the registered students were included in the sample size.

3.6 Data collection methods

3.6.1 Primary data

These are statistics assembled straightforwardly from respondents. Questionnaires were used as a data collection tool as the most popular in scientific research (Appendix 1). Structured quantitative questionnaires were used in this study to collect data from NTA level 6 students in health training institutions offering clinical medicine program. All 72 questionnaires were distributed in altogether 4 health training institutions were finished and resumed effectively.

3.6.2 Secondary data

Secondary data are the statistics that has proactively been accumulated through fundamental sources and made quickly accessible for researcher to use for their own research. Definitively conclusions and recommendations were made using past and present information that was obtained by a researcher. Not only different sources/records such as research reports, files and other documents from various offices that a researcher spent time on trying to explore statistical data but also several internet facilities which extracted helpful support in terms of papers and reports.

3.6.3 Data collection instruments

A researcher engaged structured questionnaires as a data gathering tool in which open-ended together with closed questions were developed to gather information. Quantitative analysis was done by using data from the study participants, quantitative

methodology was employed and therefore quantitative data collection instruments were used.

3.7 Data analysis methods

Manual cleaning to check accomplishment of the data gathering instrument, data gathered was coded, served into PC data set and checked for ordinariness for analysis by utilizing skewness and kurtosis. Statistical Package for Social Sciences (SPSS) version 20 computer software was used for analysis and presented results in tables and graphs. Univariate data was analysed using logistic regression to determine effect of competence based education and training in improving quality of healthcare delivery.

3.7.1 Pretesting the study tool

Pretested of data gathering tools i.e. questionnaires were done by choosing small number of selected students at St. David and Excellent COHAS to test for validity and reliability of the instruments. Validation and capability testing of the data gathering instruments before accumulating data for any kind of scientific study is one of crucial step for any sort of research. Pretesting before substantial information gathering of 72 participants was used to change the tool in terms of perceptions, perspectives and remarks.

3.8 Scope of the study

This study covered HTI (clinical officers training centers registered) by NACTVET specifically at Kinondoni district, Dar es salaam-Tanzania. The study was directed inside the context of effect of competence based education and training for clinical officers in improving quality of healthcare delivery. Descriptive cross-sectional study

method was applied to investigate in detail effect of competence based education and training to improve quality of healthcare delivery in looking at students' perception of clinical rotation, availability of clinical instructors used for training, availability of monitoring tools used and barriers that imped training in practicum site.

3.9 Limitations of the study

CBET for clinical officers permits vital intervention in improving quality of healthcare delivery when provided in appropriate practicum sites. However it did not cover other interventions like qualification of tutors, ownership of HTI, entry qualifications of students and motivation of staff. Also time was a key limitation to the study since the researcher had to ensure complete of the concentrate inside specified scholastic year which was sufficient to investigate exhaustively the viability of competence based education and determine its constraints.

3.10 Data validity

Validity is considered as the degree to which an idea is definitively measured in a quantitative study, (Roberta, 2015). No significant changes were observed to the questions after pretesting of questionnaires. Reaction of the respondents assured the researcher that they had common knowledge on the issue concerning CBET in improving quality of healthcare delivery. Also study validity was submitting and checking if the asked questions were compatible with the research objectives to the supervisor.

3.11 Data reliability

Reliability is described as how results are consistent after a while (Saunders, Lewis & Thornhill, 2012). The study used sample from different institutes scattered in various location with different experiences and surroundings. This conveyed to a researcher differed reactions on a comparable concern about CBET in improving quality of healthcare delivery. This expanded the appropriateness of the results than that might have been generated from an sample in one HTI in particular.

3.12 Ethical considerations

The researcher considered secrecy and obscurity on findings obtained by agreement from respondents before filling questionnaire. Participant had the right to pull out and decline to participate in research by observing unprejudiced nature and objectivity including permission that was obtained from Open University of Tanzania, The National Council for Technical Education (NACTVET), Ministry of health (MOH) and HTIs. The researcher ensured before data collection the office of the Directorate of Postgraduate studies of the Open University of Tanzania allowed attaining of research clearance. Names of respondents were not required in the data collection instrument and thusly were not been used in the research. Data was attained by the consent of respondents.

CHAPTER FOUR

FINDINGS AND DISCUSSIONS

4.0 Overview

The research findings are presented in this chapter that signifies the main objective of this study concerning the effect CBET for clinical officers in improving quality of healthcare delivery in Tanzania. The results were placed into four categories according to the following specific objectives of the study that were; to asses students 'perception and practice in practicum sites, availability of clinical instructors used for training in practicum sites, availability of monitoring tools used in practicum sites and to identify barriers that imped training in practicum sites

4.1 Social-demographic characteristics of the study participants

Social-demography factors such (sex, age, marital status, education, and income) are important factors that help to categorize audience into different sub-groups, as in this study competencies, social characteristics and training domain such as altitudes, knowledge, skills and future outcome of graduate together have impact in clinical practice. Respondents socio-demographic characteristics including gender, marital status and address, are presented in Table 4.1. Four Colleges was involved in the present study and most of participants were Male 47 (65.3%). Most of NTA Level six students 94.4% were single and close to one third (33.3%) were residing to own/rent houses.

Table 4.1: Social-demographic characteristics of the study participants (n=72)

Character	Variable	Frequency	Percentage (%)
College	KAM College	20	27.80
	Santa Maria College	15	20.80
	St. David College	12	16.70
	Excellent College	25	34.70
Gender	Male	47	65.30
	Female	25	34.70
Marital status	Single	68	94.40
	Married	4	5.60
Living arrangement	Dormitory	19	26.40
	Family house	13	18.10
	Own/rent house	23	31.60
	With parent	13	18.10
	With husband/wife	4	5.60

4.2 Student Practice and perception in practicum site

4.3.1 Student perception in practicum site

Student perception in practicum site was determined, as indicated in Table 4.2 The dichotomous scale was employed to determine students' perception in practicum site during clinical rotation The descriptive statistics in Table 4.2 show that 100 percent of the respondents indicate that consent was asked before attending patients in clinical areas, 100% indicate that confidentiality was ensured to the patients before attending them, 98.6% show that professional dress code was used in practicum site, However, 23.6% was not regularly attending daily ward rounds in practicum sites.

The above results are supported by Fariba et al., (2010) who show that the most well-known issues revealed by students connected with ethics in clinical training 20.1%, professionalism 18.8%, confidentiality 7.6% and informed consent 7.0%. Similarly

Abraham et al., (2022) indicates overall, 71.1% were portrayals of excellent occurrences of moral issues and 14.9% were categorized as unethical behaviour.

These results suggest that students are not well informed the importance of attending daily ward round, in this case students who are not attending rounds are more likely to have unethical and bad altitudes when attending patients that may result to poor health outcome.

Table 4.2: Student Perception in practicum site (n=72)

Item(s)	Response	Frequency	Percent (%)
Asking for consent before attending patients in clinical areas	Yes	72	100.00
	No	-	-
Ensuring confidentiality to the patients before attending them	Yes	72	100.00
	No	-	-
Having professional dress code used in practicum site	Yes	71	98.60
	No	1	1.40
Attending daily ward rounds in practicum sites	Regularly	55	76.40
	Not regularly	17	23.60

4.3.2 Students practice in practicum site

The study findings(Figure 4.1) indicate that 45.7% of the participants disagree that issue concerning doctor–patient relationship was reported, 26% disagree that clinical instructors were available for support and impact their clinical skills, 20.8% disagree that time allocated for Clinical rotation is sufficient for learning and practicing, 44.4% disagreed that number of patients and conditions was sufficient for learning and 18% disagreed about setup of the clinical practicum site assist them in improving their clinical skills.

The above findings hold on Getie et al., (2021) indicated clinical incompetency was associated by the following identified factors such as negative attitude towards

clinical practice, poor staff-student interaction and low satisfaction. 59.9% of clinical incompetency was associated with the overall magnitude of these factors. Also Gemuhay et al., (2019) found that absenteeism and self-confidence were among the factors contributing to poor. We argue that learning environment and follow up of students in clinical areas should be compatible with CBET curriculum. Before and during clinical placement assessment of practicum sites and orientations of clinical instructors should be done to structural and operational elements to upgrade a positive instructing and learning experience. In this way, logically important frameworks pointed toward supporting the execution and supportability of good learning conditions ought to be created.

These findings shows that, significant number of students 45.7% and 44.4% disagreed on reported issue concerning doctor–patient relationship was reported and the number of patients/cases were sufficient for learning respectively. These results suggest that students are not involved in solving issue raised due to malpractice as well as to have enough cases for learning during clinical training. In this case ability of many students to manage cases in appropriate quality is compromised and may lead to poor competencies upon their graduation.

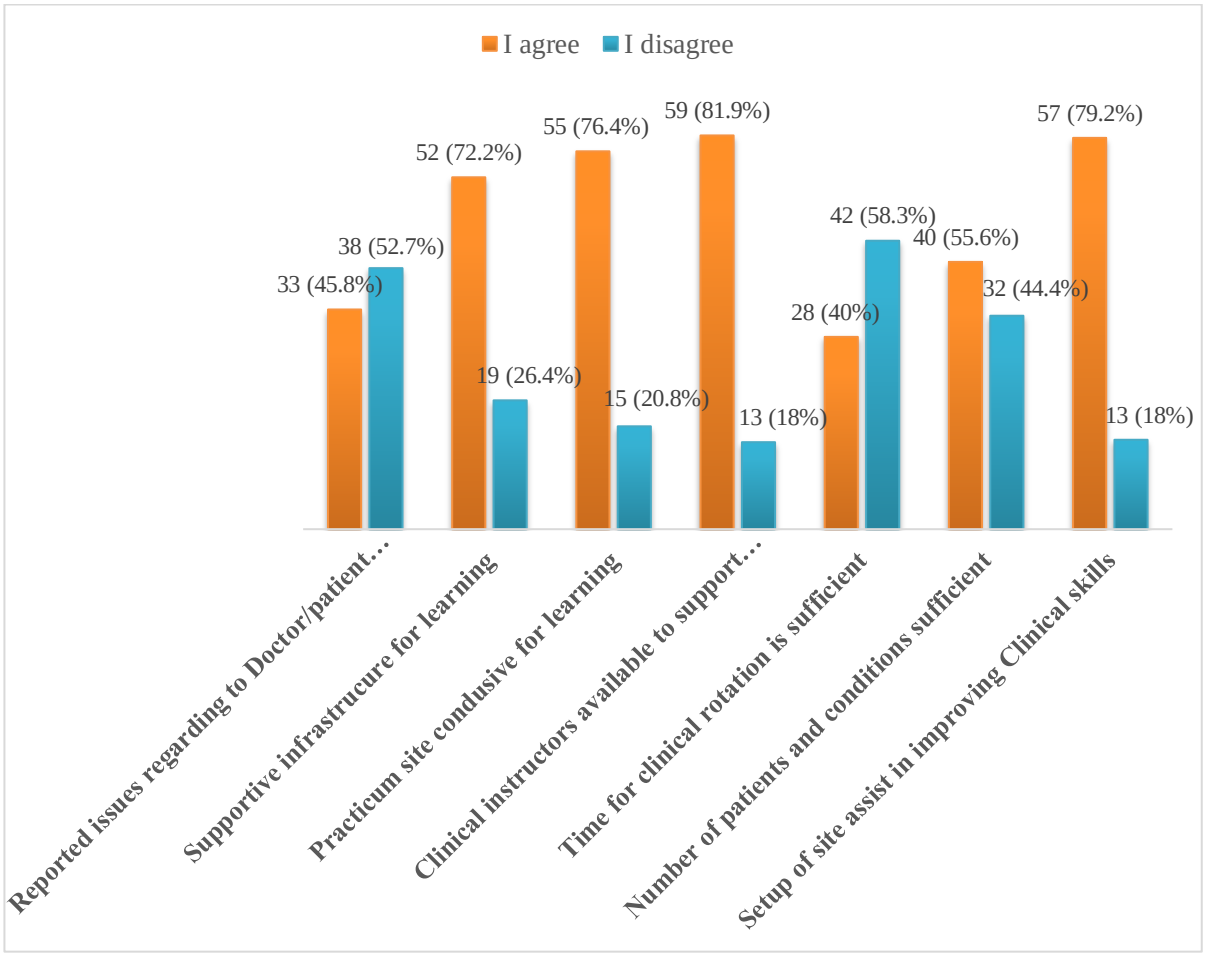


Figure 4.1: Students practice with regards to practicum sites (n=72)

4.3 Availability of clinical instructors in practicum site

Availability of Clinical instructors in practicum site was determined, as indicated in table 4.3 suggest that, 87.5% of the participants show that clinical instructors were available to orient them on objectives before starting clinical rotation, 94.4% agree that Clinical instructors integrate theory into practice during Clinical rotation, 90.3% agree that clinical instructors facilitate bedside teaching. However 29.2% differed that clinical instructors had enough time for coaching and supervising them during clinical rotation.

The above findings of clinical instructors to spent little time during training in the practicum sites are in accordance with Gemuhay et al., (2019) indicated that 84.4% of nursing students agreed on practicum sites having adequate opportunity for students to learn clinical skills although poor preparation of clinical instructors, improper supervision and clinical facility factors were among the barriers that imped training. These results enforce HTI to employ and train more clinical instructors as required by CBET curriculum and facilitation of good working condition to improve learning to students

These results suggest that, some of clinical instructors were available but performing other duties those are not beneficial to students during their clinical rotation. Time spent by clinical instructors to students determine the outcome of competencies for students and security of the patients.

Table 4.3: Availability of Clinical instructors in practicum site (n=72)

Item (s)	Response	Frequency	Percent (%)
Clinical instructors' availability to orient objectives before clinical rotation	Yes	63	87.50
	No	9	12.50
Clinical instructors integration of theory into practice during Clinical rotation	Yes	68	94.40
	No	4	5.60
Clinical instructors facilitation of bedside teaching	Yes	65	90.30
	No	7	9.70
Clinical instructors had enough time for mentoring and supervising during clinical rotation	Yes	51	70.80
	No	21	29.20

4.4 Availability of monitoring tools at practicum site

Availability of Monitoring tools at practicum site was determined, as indicated in table 4.4 shows that, 98.6% of the respondents sign daily attendance in practicums site, 100% agree that have procedure book used for assessment during clinical practice, 93% disagreed that clinical guidelines was used for Clinical practice, 90.1% agree to submit case report/clerkship after case presentation for marking and feedback. However, 13.9% disagree that clinical instructors sign their procedure books during clinical practice

This hold Deane et al., (2013) revealed greater part of disappointment grades 60% appear to those students with poor attendance of less than 80%, overall examination results were most likely linked to lectures and clinical activities. On the other hand Taba et al., (2012) reveal most respondents (79%) involved treatment guidelines in their day to day clinical practice. Also Ulyanova et al., (2020) propose application of self-monitoring in practical training classes have insignificant theoretical knowledge of self-control to students who have not undergone a more in-depth during learning.

This finding shows that, monitoring tools used in clinical practice are not up to date in capturing information required to show real practice of the students. There is clear indication that some of clinical instructors signed students' procedures books days after the procedures were performed and lack of CBET training among clinical instructors may be the cause of these actions. Change of technology and presence of digital platforms may increase a faults in current available tools used.

Table 4.4**: Availability of Monitoring Tools at practicum site (n=72)**

Item (s)	Response	Frequency	Percent (%)
signing of daily attendance in practicums site	Yes	71	98.60
	No	1	1.40
Having procedure book used for assessment during clinical practice	Yes	72	100.00
	No	-	-
Clinical instructors sign procedure books during clinical practice	Yes	62	86.10
	No	10	13.90
Having clinical guidelines used for Clinical practice	Yes	66	93.00
	No	6	7.00
Submission case report/clerkship after case presentation for marking and feedback	Yes	64	90.10
	No	8	9.90

4.5 Challenges encountered in practicum site during Clinical practice

The response on student barriers that imped of implementation of clinical practice in health training facilities in figure 4.2 shows that, 41.3 percent of the respondents showed inadequate clinical instructor, 75 percent of the respondents count large number of students, 69.4 percent of the respondents showed few patients for learning, 43 percent of the respondents showed inadequate learning materials**,** 66.6 percent of the respondents indicated inadequate time for practice and 44.4 percent of the respondents indicated long distance to practicum sites.

These findings agree with Addisie et al., (2022) who observed the prevalence of challenge faced by nursing students, viewed that prevalence rate of challenges was 16.9% among the students. College responsibility, inadequate equipment, lack of communications, poor support and clinical instructor's guidance were arisen. More over Gemuhay et al., (2019) indicated that the reported barriers to active clinical learning was 70.1% of the respondents including boundaries to successful clinical

learning and the obstructions incorporate students' factors such as absenteeism and absence of self-assurance, school factors such as inappropriate supervision and unfortunate planning of clinical instructors. Significant roots causes of existing barriers are due to poor management and appropriate actions needed by HTI. Students need to overcome these barriers in order to be competent clinician for quality health services delivery. Academic committee need to address these challenges to plan clinical rotation before enrolling and placing students in practicum sites.

This finding shows that, large number of students alongside other challenges showed significant barriers that students need to overcome in order to attain competencies for quality health services delivery. Academic and admission committee has a role to address these challenges to plan clinical rotation before enrolling and placing students in practicum sites.

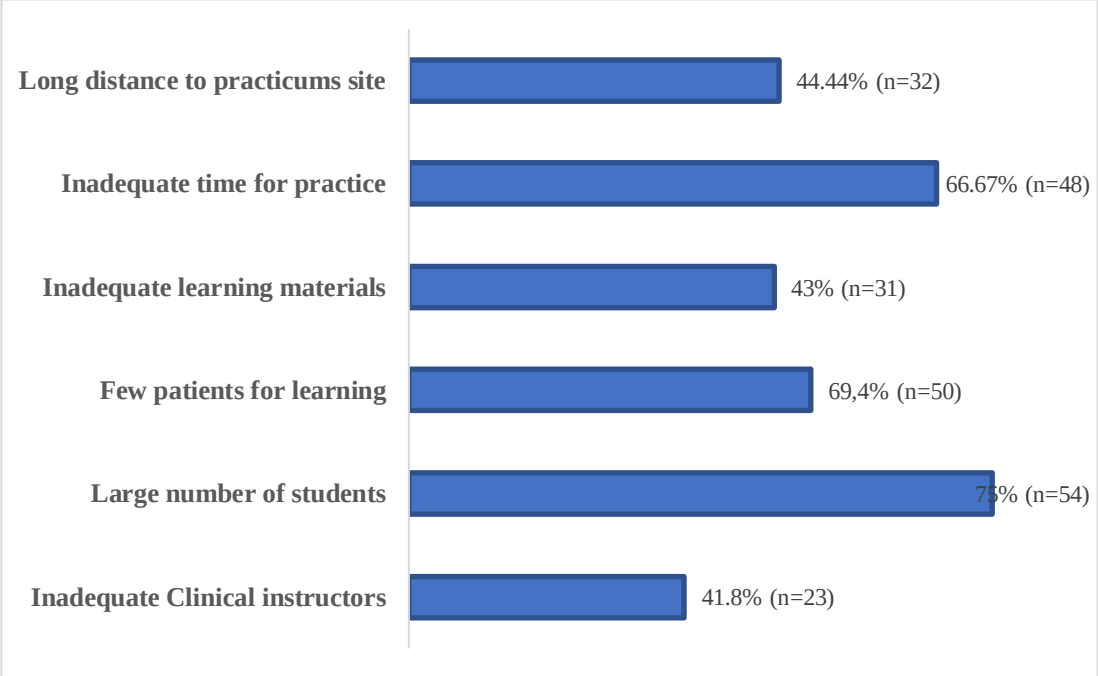


Figure 4.2: Challenges encountered in practicum site during Clinical practice

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATION

5.0 Overview

This chapter discusses the conclusion of the study and the recommendations. The discussion is organized according to the specific objectives of the study which were to; asses students 'perception and practice in practicum sites, determine availability of clinical instructors used for training in practicum sites, determine availability of monitoring tools used in practicum sites and to identify barriers that imped training in practicum sites.

It consequently investigates how the targets of the study were met and the primary findings that have been uncovered.

5.1 Conclusion

The findings from the analyzed data reveled that, some of students are not attending daily ward round, Clinical instructors are not oriented on CBET curriculum before training students in practicum sites. Some of clinical instructors were not around during clinical practices. More days are required for clinical instructors to regulate students during hands on work practice and other approach such as preceptor corners should be used in practicum sites, majority of students were not aware of or having essential clinical guideline used during clinical practice. There is a need of harmonized/common tool used from various stakeholders, inadequate clinical instructors, large number of students in practicum site, few patients for learning in practicum site, inadequate learning materials in practicum site, inadequate time for practice and long distance to practicum site.

The conclusion of findings involves the four main objectives of the study which include; asses students ‘perception and practice in practicum sites, determine availability of clinical instructors used for training in practicum sites, determine availability of monitoring tools used in practicum sites and to identify barriers that imped training in practicum sites.

5.1.1 Students ‘Perception and Practice in Practicum Sites

In assessing students ‘perception and practice in practicum sites; the study revealed that, the clinical instructors were not aware of students behavior of skipping ward round as one of important aspect of building competencies according to CBET curriculum in supervising and training students at the practicum sites. This gave a disparity to understudies to accomplish 90% attendances as required by curriculum and disqualify them to their final examination. For this course, there was a need to orient clinical instructors prior assigning them to train students at practicum sites using CBET curriculum. Orientation is crucial for building competencies to students that will improve quality of health delivery to patients and clients during health service delivery

5.1.2 Availability of Clinical instructors in practicum site

In determining availability of Clinical instructors in practicum site; the study revealed that, indeed most of clinical instructors were available during clinical activities and they conducted bedside teaching. However, some of them were not around during training or were on other duties thus did not spend enough time during clinical practice. Periodical refresher courses on CBET methods of teaching are required for clinical instructors to implement training, every novice employee has to

be oriented on CBET methods of teaching wherever they are employed, students clinical rotations require four weeks to each department to give great execution, more days are expected for clinical instructors to manage students during hands on work practice and each training area to plan preceptor corners in practicum sites furnished with preparing materials to work on clinical training. More days in clinical practice increase skills and altitudes to students that minimize errors during healthcare delivery.

5.1.3 Availability of monitoring tools used in practicum site

In determining availability of monitoring tools used in practicum site; the respondents agreed that, majority signed daily attendances and having practical procedure books required clinical activities and during bedside teaching. However, some of clinical instructors are reluctant in signing practical procedure books and majority of students were not aware of having essential guideline during clinical practice. This is in opposition to CBET method of training since it demands objectivity during training, assessment and evaluation. Also existing of different monitoring tools from different stakeholders should be addressed to harmonize them for proper training and tracing of students. Also this avoids double standard during quality inspections among HTI and teaching hospitals.

5.1.4 Barriers that imped implementation of clinical practice in practicum site

In identifying barriers that imped of implementation of clinical practice in practicum site; the study revealed that, significant number of students faces different challenges in implementation of clinical practice in practicum site comprising of inadequate clinical instructor, large number of students, few patients for learning, inadequate learning materials, inadequate time for practice and long distance as a obstacles.

These challenges are multidimensional which require all stakeholders in health and education sector to site together to ensure all guidelines of establishing health training institutes and teaching hospitals are adhered. There is a need to review laws and policies of establishing clinical medicine training for every HTI to have its own practicum site or one practicum site for one HTI to improve quality and avoiding overcrowding of students in the wards.

5.2 Recommendations

5.2.1 The Ministry of Health ,NACTVET and MCT has to take the deliberate measures to;

- Provide standard and periodical supplemental class on CBET educational program method of educating, appraisal and assessment to clinical instructors and to new employees any place they are enlisted to join the training.
- Situate clinical instructors on CBET method of instructing and assessment of students learning.
- Instruct HTI to utilize more clinical educators to oblige the quantity of students pivoting at the practicum sites and if conceivable to make clinical instructors sub cadre that will be formally acknowledged according to scheme of service to expand abilities of students.
- Create standardized monitoring tools to HTI order to track clinical practice in practicum site to enable timely and easy evaluation of training.
- Number of students should tally with recommended standard of NACTVET and MCT.

- Clinical guidelines and monitoring tools should be available to students during clinical practice.
- Students should be assigned to night call or shift in order to attend more cases that will increase their competencies
- Students should live near practicum sites to have more time of practice
- Students should reports other barriers such as sexual harassments during clinical practices to appropriate authorities to improve clinical practice in practicum site
- Colleges are advices to arrange for transport facilities during practicum rotation. For distant areas, colleges should arrange for accommodation near practicum sites.
- Students are recommended to adhere to practicum guidelines, assessment tools, attendance and uphold clinical training in ethical manner.

5.2.2 Recommendation for Further Studies

Other researches need to be piloted among clinical officers training centers in order to increase and improve clinical competencies among students by using CBET curriculum. The new studies are suggested to ascertain measures to overcome challenges of CBET curriculum implementation for clinical officers in teaching hospitals to increase quality of health care delivery in Tanzania.

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APPENDICES

APPENDIX I: QUESTIONNAIRES

Effect of competence -based education and training for clinical officers in improving quality of healthcare delivery in Tanzania

Questionnaire

PURPOSE OF QUESTIONNAIRE: Quality of health delivery is said to be successful if training curriculum implementers and learning environment are properly utilized by healthcare providers during their training. This research will assess effect of competence -based education and training for clinical officers in improving quality of healthcare delivery in Tanzania. The purpose of questionnaire is to asses' learning environment in practicum sites during training in order to improve quality of healthcare delivery. Your response is highly important and will be confidential.

Instructions: Please kindly tick in the boxes provided or write in the spaces provided your responses.

Section 1: Respondent's data

1. Email ID/Cell phone…….
2. Institutional name…….
3. Gender:
    a) Male
    b) Female

4. Marital status
    a) Single
    b) Married

5. Address
    a) Dormitory
    b) Family's house
    c) Own house (without parents)
    d) With parents
    e) With husband/wife

Section 2: Perception and practice in practicum sites

6. Do you ask for consents before attending patients in clinical area?
    a) Yes
    b) No

7. Do you ensure confidentiality to the patients before attending patients in clinical area?
    a) Yes
    b) No

8. Do you have professional dress code used in practicum sites?
    a) Yes
    b) No

9. Is there any issue reported concerning doctor–patient relationship?
    a) Yes, I agree
    b) No, I disagree

10. Do you have supportive infrastructures for learning in practicum sites?
    a) I agree
    b) I disagree

11. Is practicum site conducive for learning?
    a) I agree
    b) I disagree

12. Do you attend daily ward rounds in practicum sites
    a) Regularly
    b) Not Regularly
    c) Other specify……..

13. Clinical instructors are available for support and impact my Clinical skills
    a) I agree
    b) I disagree

14. Time allocated for Clinical rotation is sufficient for learning and practicing
    a) I agree
    b) I disagree

15. Number of patients and conditions is sufficient for learning
    a) I agree
    b) I disagree

16. Setup of the clinical practicum site assist me in improving my Clinical skills
    a) I agree
    b) I disagree

Section 3: Availability of clinical instructors

17. Did you oriented for clinical practice objectives before clinical rotation?
    a) Yes
    b) No

18. Did clinical instructors integrate the theory into practice during clinical rotation?
    a) Yes
    b) No

19. Did clinical instructor facilitate bedside teaching?
    a) Yes
    b) No

20. Did clinical instructors had enough time for mentoring and supervising during clinical practice
    a) Yes
    b) No

Section 4: Availability of monitoring tools

21. Do you sign daily attendance in practicum site?
    a) Yes
    b) No

22. Do you have procedure book used for assessment during clinical practice?
    a) Yes
    b) No

23. Did clinical instructors sign procedure book during clinical practice?
    a) Yes
    b) No

24. Do you have clinical guidelines used for clinical practice?
    a) Yes
    b) No
25. Do you submit the case report/Clerkship after case presentation for marking and feedback
    a) Yes
    b) No

Section 5: Factors that imped training in practicum sites

26. Is there any obstacle that hinders to meet the objectives of clinical practice?
    a) Yes
    b) No

If you yes, proceed to question 22

27. What challenges your encounter in practicum site during clinical practice?

Challenge	Yes	No
a) Inadequate clinical instructor		
b) Large number of students		
c) Few patients for learning		
d) Inadequate learning materials		
e) In adequate time for practice		
f) Long distance to practicum sites		

Others: Specify

……

Thank you for your time