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Experiences of clinical teaching-learning among medical and nursing graduates during internship and their supervisors in Tanzania

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Received: 17 June 2022 / Accepted: 18 October 2022
Published online: 07 November 2022

Abstract

Background Health professions training in Tanzania has gradually adopted the competency-based curricula (CBC) approach that focuses on learners' acquisition of competencies in knowledge skills and aptitude. Feedback from the graduates is crucial for improving CBC implementation and review to ensure that graduates acquire clinical competencies and thus improve patient care.

Objectives To explore the teaching–learning experiences of medical and nursing graduates during their internship and their supervisors in three teaching hospitals.

Methods Exploratory qualitative data from in-depth interviews and focus group discussions were analysed using a content analysis framework. Medical and nursing graduates who were in an internship program in three teaching hospitals in Tanzania were conveniently recruited based on their availability during the data collection period.

Results The use of clinical logbooks, guidelines and protocols, bedside teaching, mentorship, and supervision were important for the acquisition of clinical competencies. Graduates demonstrated inadequate clinical competency including confidence, commitment, and professionalism because of a lack of clear clinical guidelines and protocols, inadequate bedside teaching including supervision by faculty and ineffective communication and feedback.

Conclusions Clinical teaching–learning tools and approaches facilitate students' acquisition of clinical competencies. However, inadequate use of guidelines and protocols, bedside teaching, clinical supervision and effective communication was observed. Use of these clinical teaching approaches should be emphasized for students' clinical competency acquisition.

Keywords Clinical teaching–learning experiences · Competencies · Medical and nursing graduates · Supervisors · Tanzania

Abbreviations

CBC	Competency-based curricula
CUHAS	Catholic University of Health and Allied Sciences
KCMCUco	Kilimanjaro Christian Medical University College
MUHAS	The Muhimbili University of Health and Allied Sciences

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THET	Transforming Health Professions Education in Tanzania
FGD	Focus Group Discussion
IDI	In-depth Interviews
MD	Medical Doctor
NUR	Nursing
MNH	Muhimbili National Hospital
BMC	Bugando Medical Centre
KCMC	Kilimanjaro Christian Medical Centre

1 Background

In the current competitive and globalised economy, employers and professional organisations call for higher education institutions to produce graduates with relevant competencies and skills. Appealing to this situation, health professions Universities in Tanzania are in a transition to adapt Competency-Based Curriculum **(**CBC) training that focuses on student-centred rather than the traditional teacher-centred approaches. The Muhimbili University of Health and Allied Sciences (MUHAS) as pioneers of using the CBC started implementing CBC learning and teaching approaches in 2012, while other two Universities namely the Catholic University of Health and Allied Sciences (CUHAS) and Kilimanjaro Christian Medical University College (KCMUCo) started using CBC approach in 2020/21 academic year.

Competence involves a combination of knowledge, skills, attitudes, values, and abilities that underpin effective performance in the world of work. The CBC training focuses on learners' ability to perform tasks [1]. It emphasises clinical teaching as an essential facilitator of building clinical competence among learners. For the students to acquire the required clinical competencies, the training environment should be authentic, well-equipped with adequate support from faculty, supervisors and the clinical team. To ensure effective execution of CBC, medical and nursing faculty were trained to understand and interpret the curriculum, equipped with facilitation skills, and practical tools were developed to support implementation of CBC including assessment guides, practicum handbook and students' logbooks. These measures ensured that at the end of clinical practice, learners can perform various clinical procedures and act professionally in the actual work environment.

Studies in Tanzania [2, 3] and elsewhere [4–6] have reported that medical and nursing graduates had limited skills in performing clinical procedures, making clinical interpretations, communicating effectively and conducting physical examinations (PE). Inadequate PE was reported to significantly contribute to adverse patient events and enhanced PE skills training should be considered as an important and viable approach to medical error reduction [5]. Further, significant gaps in the clinical performance among the newly graduates elsewhere raised concerns about models of training [7]. For example, a study in Norway reported that graduates gave the highest self-assessment ratings for the need for further training in medication effects and interactions [8], implying that clinical competencies were not fully mastered during their training. Understanding constraints for inadequate skill acquisition among medical and nursing students help in restructuring and creating an authentic clinical teaching environment necessary for real hands-on clinical practice [9].

In low and middle-income countries including Tanzania, few studies have emphasised on graduates' clinical competencies as the product of clinical teaching with common modes of delivery used to impart clinical skills such as simulations, role-plays, problem-based learning, clinical clerkship, hands-on and observation [10, 11]. Improved clinical teaching and learning would ensure acquisition of clinical competencies among medical and nursing graduates and thus improved patients' care and outcomes.

In Tanzania, health professional graduates undergo a 1 year internship to further reinforce their clinical skills prior to being independent practitioners. During this period the graduates works under the supervision and guidance of clinical supervisors and faculty [2]. This study aimed at describing the clinical teaching–learning experiences among medical and nursing interns and their supervisors in Tanzania.

2 Methods

2.1 Study design and setting

This is an exploratory qualitative study [12] nested in the large project that focused on analysing the implementation of competency-based curricula for Medicine and Nursing programs offered at Muhimbili University of Health and Allied Sciences (MUHAS). The large project, Transforming Health Education in Tanzania (THET) is a 5 year effort to use innovative educational strategies to transform health education, using Competency-Based Curriculum (CBC) to produce health professionals who are competent to practice upon graduation. Competency-based Curriculum approaches of teaching and learning focuses primarily in developing graduates' skills than a theoretical concept [13]**.** In addition to the use of CBC and related educational strategies to produce competent health professionals, THET also aims to support the development of junior faculty to become successful inter-professional researchers. Specifically, this study draws data from 3 teaching and referral hospitals of Muhimbili National Hospital in Dar es Salaam, Bugando Medical Centre in Mwanza, and Kilimanjaro Christian Medical Centre in Kilimanjaro that form a Transforming Health Professions Education in Tanzania (THET) consortium. Muhimbili University of Health and Allied Sciences (MUHAS) is the first medical University in Tanzania which trains undergraduate and postgraduate students from different countries. MUHAS was established in 1960s with 3 core functions of teaching, research and consultancy. It started implementing CBC in 2012 in its various undergraduate and postgraduate programs including medicine and nursing. This study considered MUHAS as a case study to input the harmonised generic CBC given MUHAS is a pioneer for CBC implementation in medical Universities in the country [14]. The findings of the study are expected to inform preparation of the harmonised CBC curricular for Nursing and Medicine programmes that would produce competent graduates who would respond to national and international changes. These are changes in- the labour-market dynamics, burden and patterns of the disease, political and economic orientations and community needs and technology advances [15].

2.2 Participants and data collection

The study involved two types of participants, graduates in nursing and medicine who were in the internship program and clinical supervisors who guide medical and nursing students, as well as interns. The nursing and medical doctor graduates were those who completed University between 2017 and 2018 and were in the internship program at Muhimbili National Hospital (MHN), Bugando Hospital, and Kilimanjaro Christian Medical Centre (KCMC). Even though the primary aim of the study was to explore information that would be used to input the development of the national harmonised CBC template for nursing and medicine degree programs**,** it was deemed necessary to include graduates from other medical universities that were not trained using CBC. The purpose of this was to holistically identify core competency gaps in graduates to be able to develop relevant and sustainable curricula. Furthermore, the s**t**udy included clinical supervisors who guide medical students, nursing students and interns in the 3 teaching hospitals. Participants were conveniently recruited based on their availability during the data collection period [16]. Before the data were collected all participants were informed about the nature and procedures of the study and voluntary nature of their participation. They were also informed that information they provided will be kept confidential, only members of the research team would have access to the information. All participants provided written consent to participate in the study and their conversions to be audio-recoded. The study did not necessitate ethical clearance because it was conducted as part of quality improvement of nursing and medical training for the Muhimbili University of Health and Allied Sciences under the THET project.

To explore the learning teaching experiences, two methods of data collection were used which are in-depth interviews (IDIs) and focus group discussions (FGDs). Fifteen (15) in-depth interviews were conducted with six nurses' supervisors, six medical doctors' supervisors and three with medical doctor graduates. Additionally, eight FGDs each having between 6–10 participants were conducted, 5 groups were of nurses and 3 of medical doctors (see Table 1).

As indicated in Table 2, the interview guide consisted of four questions focusing on participants' experiences of teaching–learning clinical competencies. The guide was revised in the course of data collection to allow new emerging experiences to be included for subsequent interviews. The discussions were moderated using a common guide that had six questions aimed at exploring how the clinical teaching and learning facilitated acquisition of

Table 1 Graduates and clinical supervisors involved in the study

Category	In-depth interviews (IDIs)	FGD discussions and participants			Number of participants
		Bugando	KCMC	MHN	
MUHAS nursing graduates	0	0 (0)	1 (6)	1 (7)	13
Non-MUHAS nursing graduates	0	1 (10)	1 (6)	1(6)	22
MUHAS-MD graduates	3	0 (0)	1 (6)	1 (8)	17
Non-MUHAS MD graduates	0	1 (6)	0 (0)	0 (0)	6
Clinical supervisors	12	0 (0)	0 (0)	0 (0)	0
Total	15	2	3	3	58

Table 2 The In-depth Interview and Focus Group Discussion Guides

A. In-depth interview guide for supervisors

1. What is your experience of supervising interns? (Probe: What common weaknesses do you observe? What areas of competence that needs to be strengthening? Are there any differences in terms of competences among interns from different institutions? Anyone in particular?)
2. Upon recruitment, what were MUHAS graduates capable/ not capable of doing in their daily responsibilities? (Probe: To what extent do they/don't they meet your expectations?)
3. How can the training of MD/BScN in Tanzania could be improved? (Probe: What are the key issues to consider during the training of these professionals?) How can the curricular be structured to ensure effective translation of theory into practice for the MD /BScN programs?
4. What are your recommendations for improving training at MUHAS for better health care provision? (Probe: new programs, knowledge, skills, professionalism)

B. FGD guide for graduates

1. Please share your experience of training at MUHAS (Probe: teaching methods, teaching environment, students/teacher's relationship, competency (missing), content –integration, redundancy/overlap, success; barriers.)
2. Immediately after programme completion, what were you capable of doing? or not doing. (Probe: Did you feel inadequate in terms of skills, knowledge, and attitude towards clients?)
3. What is your opinion regarding program structure in relation to acquisition of clinical competencies? (Probe: course content, sequence, integration, duration of courses)
4. In what ways the training you undertook ensured translation of theory/skills into practice? (Probe: clinical/practical placement, clinical/practical supervision/mentorship, professionalism)
5. What should be improved with regard to training at MUHAS to ensure effective translation of theory/skills into practice?
6. What is your opinion regarding the students' assessment? (Probe: theory, clinical, practical)

clinical competencies among Medical and Nursing graduates. Prior to the discussion, ground rules were set whereby participants were asked to respect each other's opinions and were informed that the discussion is confidential and therefore they should not share information outside the group. They were also encouraged to actively participate during the discussion. Interviews and discussions were conducted by the researchers in Kiswahili language after working hours, within the hospital premises in an environment that was quiet and out of reach of other providers and patients. Using FGD and IDI methods of data collection increased trustworthiness of the study findings [17]. Interviews and FGDs were conducted within the hospital settings for convenience reasons and lasted within 90 min.

2.3 Data analysis

The qualitative content analysis approach [18] guided the analysis of data that was done manually. Recorded interviews were transcription verbatim by the hired persons and two researchers reviewed the transcripts against audio-recorded materials to ensure completeness of the transcription. Kiswahili transcripts were used for analysis. Transcripts were careful read sentence by sentence to obtain a sense of the whole content as narrated by the participants. Phrases and sentences related to experiences of clinical teaching learning were coded in the margin of the transcript sheets independently by researchers. To ensure content validity and conformability, researchers reflected, discussed the codes several times and after they agreed to the codes [19], the codes were brought together into categories based on their similarities. 'Member checks' [19] was done throughout the analysis process to increase credibility.

3 Results

As shown in Table 3, three categories and eight subcategories emerged from the experiences of graduates and supervisors on clinical teaching–learning. The emerged categories describe results of larger amount of text into meaningful information reflecting participants' experiences of clinical teaching and learning. The sub-categories occurred as smaller textual meanings, and when grouped together formed a category. These experiences have been supported by quotes from the interviews and discussions abbreviated as NUR for nurse and MD for medical doctor.

3.1 Clinical teaching and learning

3.1.1 Tools for clinical teaching and learning

Various approaches and strategies of clinical teaching were reported to be useful for ensuring that students acquire necessary clinical competencies. These competencies include using simulated patients, bedside teaching, ward rounds, and the use of clinical logbooks which identify competencies needed to be achieved by the students. Graduates acknowledged the usefulness of logbooks as an important tool to students' acquisition of competencies during the clinical practice:

I really appreciate the use of logbooks to guide clinical competencies to students. Previously when these logbooks were not in practice, students chose what to learn/practice in the clinical placement... each student was doing what he/she felt like doing!... But now there are logbooks with lots of skills one has to practice. This is very good. (FGD, BScN MUHAS intern MNH)

During discussion the graduates also appreciated the use of guidelines and protocols that were available in the clinical sites because they were able to use them as job aids in gaining skills and knowledge competencies.

"During clinical practice, it was emphasized that we use guidelines and protocols for patient management and therefore each student was keen to use them. In that way we gained more knowledge and skills" (FGD, Non-MUHAS graduates- MNH)

Additionally, the role of faculty was emphasized:

Actually, faculty ensures that we [students] are committed in the wards such that we did lots of clinical procedures including dispensing medicine, taking samples from patients for investigation. We made sure that all procedures listed in the logbook are practiced and they [faculty] were very serious about it. … so we had to go to the clinical area even during the night to ensure that we practiced skills listed in the logbook. (IDI, MUHAS MD graduate, BMC)

However, other graduates expressed a lack of clear clinical guidelines to enhance practice during the internship. The availability and use of clinical guidelines would guide time spent and required supervision.

We rotated for two weeks in Ophthalmology, there were no examinations. We just pass by and observe; we leave the rotation. Therefore, it gives a picture that we are learning but no one judged our performance (FGD, Non-MUHAS MD graduates, MNH)

During the clinical teaching, pre-service graduates, defined as those who were registered at the University directly after secondary education, were disadvantaged because the clinical supervisors assumed they were as skilled as

Table 3 Experiences of clinical teaching learning among graduates and their supervisors

No	Categories	Subcategories
1	Clinical teaching and learning	Tools for clinical teaching and learning, Bedside teaching, Mentorship and supervision
2	Reinforcing clinical competencies	Communication and feedback, Being competent, confident and committed, Divulging bad news
3	Demonstrating professionalism	Abiding to professional dress code, Devotion to work

in-service staff, defined as those who had prior professional orientation at Diploma level. Thus, little attention was paid to them during the clinical supervision. The graduates felt the need to have harmonized guidelines for both pre and post-service.

We need to have a common teaching guide for all nursing students, regardless of whether they are in service or pre-service (FGD, Non-MUHAS NUR graduates - KCMC)

3.1.2 Bedside teaching

Participants commended the use of bedside teaching and other clinical procedures to reinforce acquisition of clinical competencies. They appreciated having opportunity to practice with real patients. The graduates felt the bedside teaching by some faculty was inadequate and emphasized its use.

"The bedside teaching needs to be emphasized because it is less used. … students may choose an interesting case or procedure with the guidance of the faculty and the faculty may have discussions with students at the bedside. These days we don't have these bedside teachings". (FGD, MUHAS-NUR graduates- MNH)

Supervisors reported faculty tried their best level to teach students in the clinical area. However, commonly faculty spend inadequate time with students and therefore the students were unable to competently demonstrate clinical skills.

3.1.3 Mentorship and supervision

Clinical supervision and mentorship from experienced and competent personnel were essential to ensure that students were constantly guided to acquire necessary clinical skills. The supervision and mentorship of nurse students' clinical skills are commonly done by faculty and designated clinical instructors who have been trained to assume instruction roles. However, participants reported that clinical supervision by faculty was limited. Consequently, graduates failed to gain expected clinical skills and requested this training approach to be strengthened to enhance the acquisition of clinical competencies.

There is a need for the faculty to also make close supervision. When students are supervised closely and supported they will definitely develop adequate clinical skills (IDI, NUR Supervisor 5—BMC)

Clinical supervision is commonly done by health care providers, employed by the hospital, who assist students in the acquisition of clinical skills based on their needs. However, Supervisors thought there should be specific criteria set for one to serve as a clinical supervisor.

Clinical instructors are mostly done by voluntary people. They work for a certain period, and they may work beyond regular working hours depending on student needs…; we are there to help them [students]... we have to be careful on the selection of clinical supervisors (IDI, NUR Supervisor 4 - KCMC)

The clinical supervisors expected the graduates to demonstrate competency in carrying out clinical procedures during the internship. However, it was realized that graduates needed more support even during this time of clinical practice.

I expected the intern nurse to demonstrate clinical competency …but most of the time we have to show them how to do most of the common nursing procedures. So if you leave them to work independently they may cause problems … they still need a lot of support to carry out practical procedures. (IDI, NUR supervisor 6 - BMC)

However, the graduates lamented the implications of not having adequate clinical supervision during their training:

Yes, we faced challenges, sometimes we attended clinical practice because we were encouraged to see patients and write notes on the patients' files but faculty were not present to guide us. So as a student it puts you off because you clerk patients without presenting and being guided by senior doctors (IDI - Non-MUHAS MD graduate X, KCMC)

3.2 Reinforcing clinical competencies

3.2.1 Communication and feedback skills

Communication in teaching and learning is pertinent for the acquisition of clinical skills. Nevertheless, participants reported insufficient communication between faculty teaching the clinical courses and the clinical instructors to assist students in the clinical area to master competencies.

In the absence of course, faculty to supervise students in clinical areas, students become unwilling to perform some clinical procedures claiming that they were not taught such skills. (IDI, NUR Supervisor 2, MNH)

3.2.2 Being competent, confident, and committed

The supervisors thought that the majority of graduates were confident in theoretical knowledge, but failed to apply the knowledge gained while taking care of patients:

Interns are well prepared theoretically, even when you ask them questions they correctly respond to them, but practically, no they still need help [pause]. The majority lack clinical skills as if they were never taught during training. (IDI, NUR Supervisor 6- BMC)

Consistent with findings shared by supervisors, graduates acknowledge having very good theoretical knowledge for clinical reasoning but fail to apply the concepts when performing various clinical procedures.

During training, I learned a lot of theories that build my confidence and reasoning when caring for patients. However, sometimes I fail to apply the theoretical knowledge into clinical practice. We commonly used very limited time for clinical exposure and there was no clinical mentorship (FGD, MUHAS NUR graduates—MNH).
As an intern I feel that I am still learning clinical skills because we had very limited time for clinical experience during training, we had very few activities that could build psychomotor skills, therefore I am gaining a lot of confidence working with patients now as an intern than during training. (FGD, MUHAS NUR graduate- MNH).

Graduates reported missing some important clinical competencies including theatre management, management of complicated deliveries, and managing most surgical procedures. They were worried with their incapability of performing various clinical procedures in case they were posted to work independently in remote places.

'Imagine if I was posted in the Mpanda region [more remote rural setting with shortage of doctors] and assigned to work in the theatre. … there would be a lot of expectations knowing that I am a graduate coming from the National hospital. … the truth is, we never learned that competencies or practised in theatre (FGD, MUHAS NUR graduates—MNH)
I think we are missing surgical skills; we are a bit theoretical and we don't get adequate time to practice surgical skills. The placement is not favoured by MD students to conduct surgery. Surgical procedures are limited and there are residents [MD on residential postgraduate programs] and therefore cases are limited for each student to practice before graduation (FGD, MUHAS MD graduates—MNH).

3.2.3 Divulging bad news

Participants had the opinion that graduates had inadequate competency skills of divulging bad news. Graduates reported that they did not know when, what and how to break the bad news to patients and their relatives despite the inclusion of medical ethics compulsory course in the curriculum that was also aimed at teaching students how to effectively communicate bad news:

When I was in the fourth year, I had a 9 years child who had a fracture 10 days later on the day of examination the child died. One of the residents was around, so he asked me "you are an MD 4, right? Yes. Have you ever tried to break the death news to the relative? No." then he told me "then this is your time you can try". So it was very difficult for me to inform the relatives about the death. This is because I had never done it. (FGD, Non-MUHAS MD graduate—KCMC)

3.3 Demonstrating professionalism

Participants expressed graduates lack of professionalism in different aspects of clinical practice including demonstrating professional dress code, respectful behaviour to seniors, and commitment and devotion for work.

3.3.1 Abiding to professional dress code

Supervisors reported that the clinical professionals' dress code was still a problem to many students and graduates. The problem of dress code was attributed to lack of seriousness among teachers and supervisors where some of them do not bother to follow-up the issue of dressing:

Sometimes you don't even understand, you can't really say if this is a doctor, sometimes we send them back home for them to dress properly. How can you come to the rounds like this on tights, somebody wears it for the ward-round, you see. You ask yourself, was this person really trained, and was this person really mentored? So I think there is a problem with mentorship. (IDI, MD Supervisor 1—MNH)
A student comes in the wards wearing a top and she knows that professionally it is not acceptable. You wonder how she got off home. …. Some students are very bright and committed, but the way they dress is a problem.] (IDI, NUR Supervisor 4—KCMC).

Graduates further reported that during their training, they commonly adhered to dress code on the days of clinical examinations but not on other days:

Most of the time students dress very well during examinations you will see the student wearing a suit and a tie, looking very smart. Other days we just dress casually and we are perceived by staff as not professionals. But during basic sciences is when the foundation of professionalism is built therefore they should teach students how they are supposed to dress (FGD, MUHAS MD graduates—KCMC).

Other graduates reported that mentors and supervisors had an influence on the dress code. They expected the teachers to be the role model in dressing; however some supervisors were not good models while interacting with patients.

You may find your mentor who you are working with and learning from…the way she responds to the patients! You may be disappointed. (FGD, Non-MUHAS MD graduates—KCMC)

3.3.2 Devotion to work

It was also learned from the participants that individual graduates differed in their commitment and devotion for work. While some of the graduates were devoted, committed to their work and performed clinical procedures without being told, which indicated that they were competent, some needed to be taught and asked to carry out procedures.

In general, students should to be taught to be committed, because if you are committed you will need minimal supervision. I don't know what the faculty will do to build a sense of commitment and accountability to students. I believe with self-commitment the time that we spent in the clinical area would be enough to learn most clinical skills. (FGD, MUHAS NUR graduates—KCMC)

The supervisors confirmed the lack of commitment among graduates:

There are individuals who are very committed to what they are doing and they seem to display that they are competent but some graduates do the work as if they were forced to join *the profession".* (IDI, NUR Supervisor 2—MNH)

It was further reported that the commitment of graduates depended much on prior expectations that were sometimes not met hence low morale to work. The situation that affects their commitment and devotion to give quality services to clients and patients:

Faculty are doing a great job; however, the expectations of a bachelor's degree graduate are shut down when they start clinical rotations. When they realize that they have to perform bedside care, they become frustrated and their morale goes down. Most think that their job is to administer drugs and do administrative work." (IDI, NUR Supervisor 3-KCMC)

During the discussion with medical doctors, it was shared that students were taught to cooperate with everyone they work with within the clinical setting despite the level of education for the interest of patients.

4 Discussion

Our study demonstrated the importance of logbooks, guidelines, and protocols as tools during clinical practice. The importance of bedside teaching and other clinical procedures to reinforce clinical competencies were also emphasised, although bedside teaching was reported to be inadequately practised. The study has revealed that most faculty were not available for clinical teaching and mentorship and when present, they spent inadequate time with students. Furthermore, this study demonstrated that graduates had limited clinical competencies, lacked communication skills, and were not committed to work. Lack of professionalism among new graduates was also observed.

The use of logbooks can influence communication and regular feedback in different contexts. In this study, the fact that graduates embraced the use of logbooks to guide the acquisition of clinical competencies during the practice is worth noting. The use of logbooks may facilitate the timely acquisition of prescribed skills and regular feedback from the supervisors. In Saudi Arabian University, despite poor-quality feedback, missing opportunities for feedback discussion, and unfair marking, logbooks have been found to enhance students' learning through the identification of areas of weaknesses and reading in-depth about some topics [20]. Further, clinical decisions at the bedside and hospital operational rules are commonly influenced by guidelines or protocols. These clinical guidelines are expected to provide clear instructions on how one works with patients. During training, graduates were emphasized to make use of guidelines and protocols to guide clinical practice. The guidelines (i.e. SoPs and Protocols) provide instructions on how to carry out clinical procedures. For example, which diagnostic or screening tests to order, how to provide medical or surgical services, how long patients should stay in the hospital, or other details of clinical practice [21].

Student-centred clinical teaching approaches and strategies such as bedside teaching, supervision and provision of regular feedback and debriefing are key for students' acquisition of clinical competencies [22, 23]**.** However, as reported in this study and in other countries [24–26], bedside teaching and mentorship are inadequately used. The fact that graduates demanded supervision and mentorship from competent personnel implies that a partnership between trainees and clinical supervisors needs to be strengthened. Students can benefit from positive reinforcement of their efforts by the supervisors when they work as partners [27, 28]. In the Tanzanian context, supervision of students from the clinical instructors may significantly improve the quality of clinical training because of the opportunity to focus on the needed competencies as well as balancing the human resource efforts. In Poland, midwifery students acknowledge the role of the mentoring that allows repeated performance of the same activities which improve their clinical skills [29]. In our study, whereas the supervisors expected the graduates to effectively demonstrate skills when working with patients during clinical placements, the graduates' claims that clinical supervision was not commonly practised leading to inadequate competency acquisition. Mentoring is becoming an innovative form of teaching clinical skills in medical education that allow improvements in the quality of internships [29]. Faculty as mentors can sure trainees acquire the needed skills before they graduate. Curriculum developers are expected to design curricula and teaching/learning models that promote self-learning supported by competent mentors to make sure newly graduates have necessary abilities to provide high-quality and evidence-based care. Acquisition of new knowledge and practice skills however require collaborative effort [27, 30], which can only be promoted by committed faculty, clinical supervisors and students.

The clinical competency in terms of knowledge, skill, attitude and ability for safe and effective practice without supervision is considered as the final outcome in medical education. The subpar clinical competency of nursing graduates was also reported in studies in Europe where nursing graduates' abilities for undertaking clinical skills were rated low. More than 30% of graduates performed poorly or very poor [31]. Clinical teachers or Clinical Supervisors who implement bedside teaching can significantly improve graduates' performance [32]. The findings of this study indicate that these strategies are inadequately used for teaching medical and nursing students in the health training institutions in Tanzania. In the USA, all nursing students reported a significant increase in their confidence with performing the competencies associated with generalist nursing practice in the high dose simulation clinical teaching model from the program midpoint and end of

the program [33]. In addition, a recent study proposes One-Minute Preceptor and Bedside presentations being among the techniques for improving clinical teaching [32]. The reported inadequate communication between faculty and clinical instructors in the present study appears to hinder students' acquisition of clinical competencies. Effective communication can complement clinical teaching through the promotion of a secured learning environment. The senior Australian nursing students suggested that the development of a positive relationship with the clinical teaching staff was crucial in generating the ideal clinical environment [34].

Consistent with findings reported elsewhere [35], this study has indicated that medical graduates did not demonstrate professionalism. Professionalism is the belief system in which group members (professionals) declare to each other and the public the shared competency standards and ethical values to uphold in their work and what the public and individual patients can and should expect from such professionals. These values can be demonstrated in various ways including high standards of ethics, ability to work in a team, showing compassion for others, responding appropriately to the emotional response of patients and family members, demonstrating respect for others, demonstrating a calm, compassionate and helpful manner toward those in need and being supportive to others. These values also integrate principles of ethics that are commonly taught in most medical schools in the world including Tanzania. At MUHAS for example, professionalism is one of the nine competency domains of the competency-based curriculum for MD and Nursing programs. Why were the graduates unable to demonstrate professionalism?? How is professionalism taught, reinforced, demonstrated, and assessed in medical education? Studies have reported the challenging nature of teaching professionalism, how it is understood and taught [36, 37] and others [38] thought that professionalism was given low priority in medical school curriculum. In the literature, it has been reported that class-room based approaches to teaching professionalism are misaligned with the nature of professional practice [39]. Professionalism is commonly taught theoretically and it appears difficult to assess practically. There is a need for medical training institutions to focus more on the abilities of the students to demonstrate professionalism throughout training and ensure that professionalism becomes a key criterion for qualification. Researchers have proposed ways in which professionalism can be taught in medical education including persuasive communication, case vignettes, role plays, simulations, videotape reviews, role modelling, mentoring, hidden curriculum, reflective practice, effective communication, work-based groups, and use of experienced facilitators who could role model and build trust in the groups [36, 40–42]

4.1 Strength and limitations

This is the first qualitative study to be conducted in Tanzania describing experiences of clinical teaching and learning among medical and nursing graduates and their clinical supervisors. The study uncovered where interventions are most needed to improve curriculum implementation fidelity and ensure that graduates acquire clinical competencies to provide quality health care. The findings emphasize use of leaner-centred approaches in teaching and learning. The study was conducted with rigour. The use of Kiswahili language during data collection and analysis allowed the participants to speak freely and made the researchers to stay close to participants own native language in identifying the meaning units and codes. The triangulation of multiple sources of data from nurses, medical doctors and supervisors, and from three University teaching hospitals increased trustworthiness of the findings which is important in qualitative research [17, 43]. Further, validation of codes and categories was achieved through dialogue with members of the research team and continuous reflection and revision of codes ensured accurate fit [43]. The direct quotes from participants description of their experience of clinical learning and teaching are presented to allow the reader to ascertain the dependability of the study findings. Nevertheless, there are some limitations to this current study, findings of the study were limited to only graduates and supervisors in teaching hospitals, it is likely that those found in other nonteaching hospitals may have different experiences. Data was collected by health care professionals teaching in the University, it is likely this had influenced participants' answers by under reporting their experiences of learning and teaching. However, their openness, instant and consistent responses to the questions and probes during interviews left little doubt that participants provided accurate experiences of their clinical learning and teaching. We believe that these findings do broaden our understanding of clinical teaching learning and are relevant in many other settings of sub-Saharan Africa with context similar to that of Tanzania.

5 Conclusion

We conclude that logbooks, guidelines, and protocols are important tools to students' acquisition of competencies during clinical practice. However, clear guidelines and protocols were not adequately used in some medical universities. The study revealed inadequate use of bedside teaching by faculty despite its importance in reinforcing clinical competencies.

A need for faculty to make close supervision and mentorship was also appealed. It is also concluded that graduates who were trained in universities that were not using CBC, lacked sufficient communication skills. The study also revealed that the majority of graduates lacked clinical skills, competency, confidence, and commitment to work. The study has also demonstrated a lack of professionalism in different aspects of clinical practice including demonstrating professional dress code, respectful behaviour to seniors, and commitment and devotion for work among graduates.

Acknowledgements The authors would like to thank and acknowledge all the nursing and medical graduates and their clinical supervisors who participated in this study.

Author contributions LTM, EAMT, DM and NS developed the concept of the study and the design, also organized and collected data. LTM, EAMT, DAM, DM and NS did the data analysis and interpretation. LTM drafted the paper which was critically reviewed ET, DAM, DM, NS, HD, RML NS and JMH. All authors read and approved the final manuscript.

Funding This work was supported through the Transforming Health Professions Education in Tanzania (THET) consortium, under the Health Education Partnership Initiative (HEPI) Project, funded by the NIH through the Fogarty International Centre, Grant No. IR25TWO11227-01.

Data availability Audio recorded interviews and discussions will not be shared because participants did not consent for the original information to be published. However, the analysed data that has not participants identifiers can be shared upon request from the coordinator THET project, Muhimbili University of Health and Allied Sciences, PO Box 65,001, Dar es Salaam, Tanzania. Email: drsirili@gmail.com.

Declarations

Ethics approval and consent to participate This study was conducted as part of quality improvement of nursing and medical training for the Muhimbili University of Health and Allied Sciences (MUHAS) under THET project and therefore the study did not require approval from the research ethics committee. Permission to interview intern doctor and nurse graduates and supervisors was sought from authorities and employers at the three Teaching hospitals. All participants provided informed consent after they were informed about the purpose of the study, the rights and benefits of their participation.

Consent for publication Not applicable.

Competing of interests The authors declare no conflict of interest.

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