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Is harmonisation of curriculum enough to ensure clinical competencies of graduates? Experience of faculty and students from two health training institutions in Tanzania: a qualitative study

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ABSTRACT

Objective The growing complexity of global health issues underscores the need for a skilled workforce, achievable through competency-based training (competency-based curricula, CBC) that integrates knowledge and practice. Starting from 2022, medical and nursing CBC were harmonised across universities in Tanzania to ensure all graduates attain nationally defined core competencies. The reform aligned programme structure, learning outcomes and assessment methods to promote consistency and interprofessional collaboration. However, questions remain about whether harmonisation alone can ensure the development of practical clinical competencies among students. This study explored the experiences of medical and nursing faculty and students in implementing clinical training as a component of CBC in two health training institutions in Tanzania.

Design An exploratory qualitative case study was conducted with 67 participants, using 8 in-depth interviews with administrators and 8 focus group discussions with faculty and students. Data were analysed using Braun and Clarke's thematic approach.

Setting Two private, faith-based medical universities in the United Republic of Tanzania.

Participants The study purposefully recruited a total of 67 participants. The participants included university administrators (including Deputy Vice Chancellors for Academics, quality assurance officers and deans), medical and nursing faculty and students (fourth-year medical and third-year nursing students).

Results Two main themes emerged: challenges in implementing clinical training and strategies used to enforce clinical training. Key challenges included curriculum design gaps, inadequate faculty and clinical instructors, a large number of students and a shortage of hospital staff. Strategies used were utilisation of clinical skills and simulation laboratories, involvement of non-academic clinical specialists' staff, use of student-centred learning methodologies and leveraging regional, district and specialised private hospitals for clinical teaching.

Conclusions Despite notable challenges in clinical training, the institutions in this study have implemented proactive strategies to support clinical training. Based on the findings, stakeholders should invest in increasing faculty and clinical instructors and expanding clinical placements to regional, district and private hospitals.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ This is the first study to evaluate the competency-based curricula (CBC) in Tanzania since its national rollout, offering timely evidence for curriculum improvement.
⇒ The findings are informed by the direct experiences and perspectives of all key CBC stakeholders, including administrators, faculty and students.
⇒ Data triangulation across multiple settings and participant groups provided a comprehensive understanding of CBC implementation.
⇒ While findings are not broadly generalisable, they offer transferable insights into CBC implementation challenges.

INTRODUCTION

The rising burden of diseases, rapid technological achievements and increased emphasis on patient-centred care present complex challenges to global health systems underscoring the critical need for a competent and adequate health workforce.[1] In response, the Lancet Commission for Transforming Health professional education has advocated for a shift to competency-based education, which aims to produce healthcare professionals who are capable of integrating cognitive, psychomotor and affective competencies required for high-quality care.[2]

Despite this global shift towards competency-based curricula (CBC), persistent gaps remain in the practical competencies of graduating healthcare professionals. Evidence from both international and local contexts indicates deficiencies in clinical decision-making, procedural skills and communication.[3 4] These deficiencies are often attributed to variations in curriculum design and implementation approaches.[5] Addressing these issues is particularly urgent in low-income and middle-income countries such as Tanzania, where health workforce shortages and variation in clinical competence can significantly affect the quality and equity of healthcare delivery.

Tanzania adopted competency-based training for health professionals in 2008, as part of a national strategy to build a skilled workforce.[6] A leading institution, Muhimbili University of Health and Allied Sciences pioneered its implementation in 2012/2013, supplementing curriculum reform with investments in faculty development and learning infrastructure.[7] However, the continued use of traditional knowledge-based curricula by other institutions led to marked disparities in graduates' clinical competencies.[8] These variations evident in skills such as patient assessment, documentation, clinical reasoning and communication, undermined uniform care standards and hindered the mobility of students and faculty across training institutions.

To address these challenges, a consortium of five health training universities under the Transforming Health Professions Educations in Tanzania (THET) initiatives comprising three Tanzanian and two US universities developed a harmonised CBC for medical and nursing education in 2019.[7] This harmonisation process aligned curriculum structure, learning outcomes and competency domains across institutions to ensure all students acquire comparable knowledge, skills and professional behaviours thereby facilitating mobility and promoting national consistency in quality of graduates.[8]

The harmonised CBC curriculum delineated clear competency domains, promoted student-centred pedagogies and emphasised experiential and clinical learning to enhance practical skills acquisition. The agreed national core competencies include professional knowledge, clinical/practical skills, maintaining good practice, communication skills, working within the system and context of healthcare, relationship with patients, clients and community, professionalism, intraprofessional and interprofessional practice and collaboration, and scientific inquiry and critical thinking.[7] Clinical training forms the backbone of competency development in medical and nursing education. Through a combination of simulation-based learning in clinical skills laboratories and supervised hospital exposure, students progressively acquire, practise and refine essential clinical skills such as patient assessment, clinical reasoning and procedural performance.[9] However, the effective implementation of clinical training which combines simulation-based learning and supervised hospital practice is highly dependent on variable factors such as human and material resources, supervision quality and institutional readiness across training sites.

Given these contextual realities, this study provides one of the first evaluations of the implementation of the harmonised CBC in Tanzania, with a specific focus on clinical teaching and learning components at two major universities. By examining the challenges and adaptive strategies, this study aims to inform continuous curriculum improvement, promote consistency in competency outcomes and guide national effort to strengthen the health workforce for enhanced service delivery.

METHODS

Study design

We employed an exploratory qualitative case study to analyse the experiences of medical and nursing faculty and learners in implementing CBC from Catholic University of Health and Allied Sciences (CUHAS) and Kilimanjaro Christian Medical University College (KCMUCo). The design is appropriate for exploring and obtaining rich and deep information from participants on the clinical teaching strategies used and challenges faced by faculty and students to inform continuous improvements in the clinical learning and teaching experience for undergraduate medical and nursing students. Furthermore, implementing CBC is not a linear process but rather a complex phenomenon with multiple social interactions.[10]

Study context

This study was conducted in two medical universities in Tanzania: the CUHAS and KCMUco. Both universities are major faith-based institutions offering undergraduate and postgraduate health-related national and international programmes. The universities have high-fidelity clinical simulation and training laboratories to bridge theoretical training and clinical practices. CUHAS is primarily affiliated with Bugando Medical Centre, while KCMUco uses Kilimanjaro Christian Medical Center. In addition, students gain practical experience at various regional referral and district hospitals. For CUHAS, these include Sekou-Toure Regional Referral Hospital, Sengerema District Hospital, Shinyanga Regional Referral Hospital and Shinyanga Municipal Hospital. For KCMUco, placements include Haydom Lutheran Hospital, Mount Meru Regional Hospital, Seriani Lutheran Hospital and St. Elizabeth Hospitals, ensuring broad exposure to diverse clinical settings.

The CBC spans 5 years for medicine and 4 years for nursing. The first 2 years emphasise foundational skills for both programmes, focusing on biomedical and behavioural sciences where both nursing and medicine undertake basic sciences (ie, anatomy, physiology, biochemistry, health psychology, microbiology, parasitology and pharmacology). The third year to fifth year in medicine is dedicated to clinical rotations in core disciplines such as internal medicine, surgery, psychiatry, paediatrics, obstetrics and gynaecology, and community

Table 1 Study participants

Category of participants	In-depth interviews		Focus group discussion (number of participants)		No. of participants
	CUHAS	KCMUCo	CUHAS	KCMUCo	
University administrators	4	4	–	–	8
Medical faculty	–	–	1 (6)	1 (6)	12
Nursing faculty	–	–	1 (7)	1 (6)	13
Medical students	–	–	1 (8)	1 (7)	15
Nursing students	–	–	1 (10)	1 (9)	19

CUHAS, Catholic University of Health and Allied Sciences; KCMUCo, Kilimanjaro Christian Medical University College.

medicine. For nursing, the focus is on clinical placements in medical and surgical nursing, midwifery, paediatrics and mental health and psychiatry. This structure ensures a progressive transition from classroom learning to supervised clinical practice.

Study participants and recruitment

A total of 67 participants were purposively recruited from two Tanzanian universities implementing the harmonised CBC. The participants included nursing and medical undergraduate students, faculty and university administrators (table 1). University administrators (n=8) were included for their crucial role in curriculum oversight and implementation. The faculty consisted of 12 medical and 13 nursing educators involved in undergraduate teaching. The students' participants were 15 medical and 19 nursing students in their third and fourth year, who had sufficient exposure to the harmonised CBC and substantial clinical training experience, and they represented the second cohort of the programme, where initial implementation challenges were presumed to have been addressed. The recruitment was facilitated with the support of respective deans' offices. All individuals who provided informed consent were scheduled for either in-depth interview (IDI) or a focus group discussion (FGD). This sample size achieved data saturation across all participant groups, ensuring a comprehensive range of perspectives and experiences on clinical training under new harmonised curricula.

Data collection

Data were collected through IDIs and FGDs. The IDIs were conducted with eight faculty members teaching medical and nursing programmes who also held key administrative roles (eg, deans, directors or deputy vice chancellors for academics). These interviews took place in the participants' offices after working hours to ensure privacy and minimise interruptions. The FGDs involved 59 participants, comprising 25 faculty and 34 students, and were conducted in secure, designated locations within the universities. All interviews and FGDs were facilitated by two experienced qualitative researchers (LTM and DM) using interview guides. These guides were developed based on the study objectives and a review of relevant literature, allowing for in-depth exploration of emerging themes (online supplemental material 1). To ensure data security and confidentiality, all audio recordings were stored on password-protected laptops, and filed notes were kept safe in locked cabinets within the researcher's offices.

Data analysis

The analysis followed Braun and Clarke thematic analysis approach.[11] All audio recordings were transcribed verbatim and translated into English. To ensure semantic consistency, a back translation into Kiswahili was performed before coding. The analysis process began with the research team repeatedly reading the transcripts to familiarise themselves with the data. An inductive data coding approach was used, with no pre-existing theoretical framework applied.[12] To establish a consistent coding framework, three researchers independently coded one transcript and then met to discuss and reach a consensus on the initial codes. These agreed codes were then applied by the team to all transcripts line by line, using the constant comparative method[13] to refine them.

Microsoft Excel was used to manage, visualise and group the codes. Through iterative team discussions, the codes were grouped into conceptually related subthemes, which were then organised into broader themes. This process revealed that the data naturally clustered around two overarching themes (1) challenges in implementing clinical training and (2) strategies adopted to facilitate clinical training. The research team held multiple discussions to ensure that these themes were internally coherent, distinct from one another and supported by sufficient data.

The final themes and subthemes were refined through iterative review to confirm their clarity, consistency and analytical depth. Consensus was reached on all themes ensuring they reflect the participants' experience rather than researchers' assumptions. Verbatim quotations were used to illustrate the findings. Although the process is described as linear, the actual process was iterative (table 2).

Table 2 Thematic matrix: challenges and strategies in implementing clinical training

Theme 1: Challenges in implementing clinical training	
Subthemes	Exemplar codes
Curriculum design gaps to meet clinical learning needs	► 2 weeks is not enough to cover clinical objectives ► The time allocated for junior rotation is inadequate ► Less link between theoretical courses and clinical training ► Students taught theory in one semester and clinical rotation in another semester
Inadequate faculty and clinical instructors for clinical training	► A mismatch between the number of students and faculty ► Shortage of clinical supervisors for student supervision ► Large number of students compared with faculty ratio ► Clinical instructors have administrative responsibilities limiting supervision time
Large number of students hindering effective learning	► Students' congestion in clinical departments ► Limited caseload for practice ► Student congestion during ward rounds
Shortage of hospital staff limiting student learning	► Students doing tasks they were not taught ► Facility workload hinders students' learning ► Shortage of staff makes students work instead of learning
Theme 2: Strategies to enforce clinical training	
Subthemes	Exemplar codes
Use of clinical learning tools to guide skills acquisition	► Clinical learning objectives guide clinical training ► Procedure checklists guide clinical training ► Logbooks indicate procedures to assist and perform ► Midwifery instructors follow-up logbook filling ► Logbook guides clinical learning
Utilisation of clinical skills and simulation laboratories	► Faculty teach students in the skills laboratory ► Students use simulation labs before going to clinical practice ► Simulation labs used to learn basic nursing procedures ► Students learn midwifery skills in the skills lab
Involvement of non-academic clinical specialists to support teaching	► Availability of clinical instructors for teaching ► Instructors and specialists teach students in clinical areas ► Clinical instructors trained in clinical teaching ► Clinical specialists given academic titles
Use of student-centred learning methodologies	► Students demonstrate procedures under observation ► Students use extra time to gain clinical skills ► Placing students on call to enhance exposure ► Compensating limited clinical time with assignments ► Using case study teaching methods
Leveraging of diverse hospitals for clinical placement	► Use of regional, district and specialised private hospitals for clinical teaching ► Students exposed to clinical skills in peripheral hospitals ► Increasing neurology and orthopaedic wards to accommodate students

Patient and public involvement

Patients or the public were not involved in this study as its focus was on the institutional perspectives and experiences of university administration, faculty and students regarding implementation of the harmonised competency-based medical and nursing curricula.

RESULTS

Two themes and eight subthemes emerged from the experience of implementing harmonised CBC in clinical teaching and learning. The first theme describes the challenges encountered by faculty and students in clinical training. The second theme describes strategies for enhancing clinical training.

Challenges in implementing clinical training

Curriculum design gaps to meet clinical learning needs

Participants expressed concern over the curriculum design gaps in meeting clinical learning needs. The gaps were expressed in three forms: limited time for clinical placement, module sequencing and untailored foundational courses to meet the learning needs of the students. A short time allocated for clinical studies was reported in medical and nursing curriculums. Participants felt that the time allocated in junior medical rotation, principles of nursing, medical nursing and surgical nursing was inadequate to cover the stipulated clinical skills. For instance, medical students cited that 2–4 weeks allocated for clinical placement in major departments like surgery

and internal medicine were insufficient to meet their clinical learning needs.

> The curriculum is good because it is competency-based; however, when you look at the timeframe used to implement the curriculum, it is limited; for example, in the surgery department, when you rotate, you want to see how the burn is managed, but it is difficult because in there you have to be one day, and then you move to another unit within the department, so the time is short to acquire these competences. FGD member 02: KCMUCo medical student.

Another reported curriculum design gap was misalignment of the foundation courses with the clinical learning needs and module sequencing. Participants felt that the teaching in the theoretical foundation's modules needed to adequately focus on laying the foundation for clinical learning needs, instead of generalising it to all first-year nursing and medical students. Nursing faculty and students reported that the theoretical foundation of some clinical courses, such as principles of nursing, midwifery and medical and surgical nursing, was taught in separate semesters with their respective clinical placements. Having taught in different semesters, they felt it took more work for students to remember what they had learnt during theoretical sessions and apply them during clinical practice.

> Students learn the theory of normal and abnormal midwifery within the same semester, and then they will go for clinical rotation in another semester. I find it difficult because they were supposed to get exposure to normal midwifery before doing abnormal. FGD member 3: KCMUCo nursing faculty.

Inadequate faculty and clinical instructors for clinical training

Participants reported a staff shortage when asked about the adequacy of clinical teaching staff. They stated that there were few faculty members, and therefore, they could not visit students in the clinical practicum sites regularly. In the clinical training hospitals, students reported a need for more clinical specialists and instructors to teach and supervise their learning. In addition to an inadequate number of instructors, the few available were assigned administrative responsibilities, limiting their time for clinical teaching and supervision.

> As we have said, there is a shortage of clinical instructors, so sometimes when you perform procedures, you are all alone; there is no instructor to observe and correct you FGD Member 2: KCMUCo nursing student.

Large number of students hindering effective learning

A large number of students in a clinical department emerged as a challenge for skills learning. For example, students cited that a single clinical department can have up to 100 students of different levels and from different teaching institutions. Having a large number of students in a department made bedside learning difficult because students would barely hear and observe what the clinical supervisor was demonstrating during ward rounds and bedside teaching. Students reported difficulty in finding cases for learning as most of the patients were attended to by at least five students per day, making them overwhelmed to a point they declined consent to students' clerkship.

> In clinical rotation for year 4 medical students, we are around 40 per each clinical department., we also have students from other academic years such as year 5, they may be 50. There are other students from other colleges and international students, so if you combine all the students in a department, we are like 100 making learning difficult. FGD member 03: KCMUCo medical student

Shortage of hospital staff limiting student learning

Students reported that the number of staff in clinical teaching hospitals was insufficient to meet their learning needs. The few available staff were often overwhelmed with patient care duties, leaving limited time for clinical supervision and mentorship. Consequently, students were assigned routine clinical tasks to support service delivery rather than focusing on achieving their clinical learning objectives.

> There is a shortage of staff, you find yourself like a ward nurse, and you go there to work rather than learning. FGD Member 2: KCMUCo nursing student

Strategies employed to enforce clinical training

Utilisation of clinical skills and simulation laboratories

Participants praised the use of a simulation laboratory, noting that it enables students to develop skills before they can work with real patients. They viewed simulation laboratories as vital links between theoretical knowledge and clinical practice. For nursing students, a skills laboratory was used to enforce basic nursing skills, medical and surgical and midwifery skills. Medical students used clinical skills to learn basic medical and surgical procedures such as patient examination.

> On the side of skills, before we go to the clinical area, we first learn skills in the simulation lab, where we learn all the procedures through demonstration and simulation. FGD Member 3: CUHAS nursing student

Use of clinical learning tools to guide skills acquisition

Students' clinical learning was guided by learning tools: clinical learning objectives, procedure checklists, standard operating procedures and clinical logbooks. At the beginning of each clinical rotation, students were oriented and provided with the clinical learning objectives to make them conversant with what was expected in the practicum. The clinical logbook contained a list

of procedures and indicated the minimum number of procedures the students must perform before they are considered competent. Together with the clinical logbook, students were provided with a procedure checklist and the standard operating procedures to guide their skills acquisition.

> Usually, we are given logbooks where we will fill out all those competencies that are important for a student to acquire during a given rotation. FGD Member 2: CUHAS medical student

Involvement of non-academic clinical specialists to support teaching

To respond to the shortage of faculty, participants acknowledge appointing clinical specialists from the clinical area to fill the gap. The appointed clinical specialists were regarded as clinical instructors. Some of these specialists received formal training on clinical teaching from the college and the Ministry of Health. The appointed staff were responsible for clinical learning coordination, mentorship and supervision of the medical and nursing students in their respective departments.

> The office of the dean appoints clinical specialists; they receive training, and once they qualify, they are given certificates, and they will be teaching our students in the ward. FGD-member 03: KCMC nursing faculty

Use student-centred learning methodologies

Faculty reported using student-centred teaching and learning methods in clinical teaching. The methods adopted were clinical case studies, clinical assignments, student-led bedside presentations and procedure demonstrations. In the practicum sites, students were assigned patients, and they were required to assess, provide management and make a follow-up. At a certain point during these follow-ups, students were required to present their progress and have discussions with fellow students and instructors.

> I find it a better learning method, as you must know the patients; you will do all the nursing procedures because at the end you will be required to present and justify with literature what you have done, so when you are given a certain patient, you must learn FGD member 10: CUHAS nursing student

To compensate for the limited time, faculty reported providing students with clinical assignments that made students find their own times to attend the practicum sites for clinical learning, including staying on calls during night shifts.

> Sometimes we place students on call starting from 1600 hours to midnight; they are placed at the labor ward where they are attached to doctors and nurses of the night shift, and they have to see and manage patients. FGD member 05: CUHAS medical faculty

Leveraging of diverse hospitals for clinical placement

Peripheral hospitals were adopted for clinical placements of medical and nursing students. Students were distributed into smaller, manageable groups and sent into nearby regional and district hospitals as well as private specialised hospitals. The use of these hospitals was adopted as a means to decongest students in the designated teaching hospitals to ensure access to adequate learning cases and student supervision. KCMUCo sent their medical and nursing students to hospitals located in the Northern zone of Tanzania, including Kilimanjaro, Arusha and Manyara. CUHAS sent medical and nursing students to regions around Lake Zone, including Mwanza, Simiyu and Shinyanga.

> Sengerema is an ideal hospital for teaching, as it reflects the environment we have here (Bugando Medical Centre). We are placing students there, and they have access to patients and specialized services. IDI: CUHAS University administrators 1

> (…) they learn a lot of clinical skills in the peripheral hospitals …we take them to Arusha and Manyara hospitals. IDI: KCMUCo University administrators 2

DISCUSSION

This study explored clinical training experiences among academic administrators, medical and nursing faculty, and learners in implementing a CBC at institutions within the THET consortium in Tanzania. The thematic analysis revealed two major themes. The first theme focused on challenges encountered during clinical training. These include curriculum gaps, an inadequate number of faculty and clinical instructors, overcrowded clinical rotations and hospital staff shortages. The second theme highlighted strategies employed to facilitate clinical training. These strategies involved use of clinical learning tools, simulation laboratories, non-academic clinical specialists' staff, student-centred learning methodologies and use of regional, district and specialised private hospitals for clinical placements.

These findings are consistent with global literature documenting similar barriers and innovative strategies in CBC implementation across low-resource settings.[2 14 15] Common challenges include curriculum design gaps and limited human and material resources needed for effective clinical teaching. While studies in countries like Kenya and Ethiopia have seen gradual improvement through national reforms, structural constraints persist in the Tanzanian context.[16 17] These include inadequate training infrastructure, a shortage of health professionals and faculty, and limited faculty understanding of the CBC curriculum implementation.[18 19] To address these systemic issues, Tanzania's National Health Workforce Strategic Plan (2020–2025) emphasises the need for strengthened clinical training infrastructure and expansion of the health workforce.[20] These policy directions align with our study's findings and underscore the

urgency of addressing foundational gaps to support CBC implementation.

One of the critical barriers identified was in curriculum design, particularly the insufficient time allocated for clinical placement and separation of theory and practice across semesters. This undermines clinical skill acquisition and reflects broader systemic constraints common in health training in low-resource settings.[21] In contrast, Saifan *et al* conducted a qualitative study in the United Arab Emirates among undergraduate nursing students to explore strategies of bridging the theory-practice gap. Their findings emphasised the need for curriculum content reform, including a block clinical rotation system where theory precedes practice, aligning theory with clinical practice.[22] To align with Tanzania Commission for Universities (TCU) guidelines, which encourage a competency-driven curricula integrating cognitive and psychomotor domains, institutions in Tanzania need to redesign curricula to ensure synchronisation of theory and practice.[23] This restructuring would better support CBC goals and improve graduate competency.

Faculty and clinical instructor shortages were also prominent. This issue may be exacerbated in private, faith-based institutions, which often rely on student fees to implement training programmes. This finding echoes the broader health workforce shortages reported across sub-Saharan Africa.[24–26] In recognition of these issues, Tanzania's National Health Workforce Strategic Plan recognised the need to expand training capacity and improve student-to-trainer ratios as key strategies for strengthening health workforce production.[20] The findings thus call for urgent measures to recruit and train additional faculty, clinical instructors and specialists in teaching hospitals to bridge the gap and sustain CBC implementation in Tanzania's higher education system.

Hospital staff shortages also compromised clinical learning quality. Students were frequently assigned routine ward tasks that did not align with their learning objectives. Similar findings have been reported across Africa, where clinical placements are diverted toward service provision rather than education.[24 27] This undermines the goals of Tanzania's Health Sector Strategic Plan V, which emphasises clinical education designed around students' learning objectives.[20] Addressing this challenge would require rebalancing clinical service and education demands within teaching hospitals, ensuring students' clinical learning objectives are prioritised to achieve CBC goals.

Simulation laboratories emerged as a crucial strategy to bridge preclinical and clinical training gaps. Studies from other countries have validated the use of simulation laboratories in improving clinical readiness.[28 29] Our findings support this and underscore the need for expanded investment in clinical skills laboratories, as outlined in the Tanzania Human Resource for Health Development plan.[30] Expanding simulation facilities would enhance CBC implementation in Tanzania, allowing students to practise and build clinical skills in safe, structured environments.

Another notable strategy was the involvement of non-academic clinical specialists in students' clinical training. Similar models have been adopted globally, notably in Turkey, where hospital-employed medical and nursing staffs assist in student training.[31] The resemblance illustrates the practical necessity of leveraging available clinical expertise in low-resource settings. In Tanzania, while this practice is practical, it necessitates clear role definitions, supervision structures and quality assurance measures in line with the TCU recommendations,[23] to ensure academic standards are upheld.

Student-centred learning methodologies such as case studies, clinical assignments and bedside teaching were reported to enhance clinical skills, reasoning and critical thinking. These methods are consistent with global best practices which advocate for participatory, competency-driven education.[32 33] Expanding the use of such methods, along with timely feedback and mentorship, is crucial for strengthening CBC implementation.

Finally, the use of regional, district and specialised private hospitals for clinical placements was noted as an effective strategy to mitigate overcrowding in main teaching hospitals. Similar decentralised training models have been implemented successfully in countries such as Rwanda, offering students broader clinical exposure.[34] This decentralisation is consistent with the effort being made by the government of Tanzania, which encourages the use of peripheral sites for health training to ensure comprehensive community-oriented clinical education.[35] Expansion of decentralised placements would enhance the quality and quantity of clinical exposure for Tanzanian students, accelerating the realisation of CBC goals.

Strengths and limitations of the study

This study represents the first evaluation of the harmonised CBC in Tanzania medical universities since its national rollout, providing timely and critical evidence to inform ongoing curriculum improvement. The findings are grounded in direct experience and perspectives of all curriculum implementors, ensuring a holistic and authentic representation of the implementation landscape. In addition, methodology triangulation through multiple data sources, diverse settings and researchers strengthens the trustworthiness and provides comprehensive, multifaceted understanding of the Competency Based Curriculum (CBC) implementation in clinical training. However, the primary limitation of this study is inherent to its qualitative design. While the findings are not statistically generalisable to all institutions, they offer rich, contextual insights that are highly transferable to similar settings. In addition, although efforts were taken to ensure reflexivity through team discussion and a consensus-based analytical process, the potential for interpretative subjectivity cannot be entirely excluded.

CONCLUSIONS

Despite the challenges identified in this study, training institutions in Tanzania have demonstrated commendable efforts to enhance clinical learning under the CBC. These proactive strategies include the effective use of skills laboratories, engagement of non-academic hospital staff in clinical training, adoption of student-centred learning approaches, and strategic distribution of students to regional, district and private specialised hospitals to maximise clinical exposure.

To strengthen the implementation of the CBC, we recommend that stakeholders address the identified gaps in curriculum design and invest in increasing the number of faculty and well-trained clinical instructors. In addition, there is a critical need for comprehensive faculty and clinical staff orientation programmes to ensure a shared understanding of the CBC approach and its practical application in both academic and clinical settings. Expanding and strengthening clinical placement opportunities, especially in peripheral hospitals, should also be prioritised. Finally, further research is needed to assess the sustainability and effectiveness of these strategies, particularly the integration of peripheral hospitals in clinical education, to ensure continuous improvement in the quality of training for future health professionals.

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Patient consent for publication Consent obtained directly from patient(s).

Ethics approval This study involves human participants; however, the overall project was granted a waiver by the Muhimbili University of Health and Allied Sciences Institutional Review Board, which served as the primary institution overseeing this research (Waiver Ref. No. DA/282/298/01.C/). Participants gave informed consent to participate in the study before taking part.

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Data availability statement Data are available on reasonable request. All data relevant to the study are included in the article or uploaded as supplementary information. The datasets generated and analysed during the current study are not publicly available due to the sensitive and identifiable nature of the qualitative interviews and focus group discussions, but are available from the corresponding author on reasonable request. Deidentified excerpts supporting the reported findings are provided within the manuscript and its supplementary materials. Additionally, full data may be accessible on reasonable request to the corresponding author and subject to approval by the institutional review board of the Muhimbili University of Health and Allied Sciences.

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