

Original Research Article

Experiences of Nurse Educators on the Implementation of the Competency-Based Curriculum for Nursing and Midwifery Programmes in Tanzania: A mixed methods study

Mmari Vumilia^{1,2*}, Mselle Lilian³, Kibusi Stephen¹ and Osaki Kalafunja⁴

Abstract

¹College of Health Sciences, School of Nursing and Midwifery, University of Dodoma, Dodoma, Tanzania

²Ministry of Health, Community Development, Gender, Elderly and Children, Directorate of Human Resource Development, Nursing and Midwifery Training section, Dodoma, Tanzania

³Muhimbili University of Health and Allied Sciences, Department of Clinical Nursing, Dar es Salaam, Tanzania

⁴St. Augustine University Tanzania (SAUT), Dar es Salaam, Tanzania.

*Corresponding Author's E-mail: vumiliammari@yahoo.com
Mobile: +255 784 227 894

In Tanzania, the competency-based curriculum for nursing and midwifery was introduced in 2008. Despite the government's efforts to ensure its effective implementation, there has been a public concern on graduate nurses' and midwives' competencies in providing quality nursing care in the country. This concern has influenced people to question the process of the implementation of the same. This study describes experiences of nurse educators in implementing the Competency-Based Education and Training curriculum (CBET) for nursing and midwifery programmes in Tanzania. A descriptive cross-sectional study design using a convergent parallel mixed methods approach was used to describe the experiences of nurse educators in implementing CBET curriculum for nursing and midwifery programme. Of the 264 nurse educators who participated in this study, 240 answered a questionnaire and 24 were interviewed. Chi-square test was used to assess the association between independent and dependent categorical variables. Statistical significance was set at a P value of less than 0.05 and the level of confidence interval was set at 95%. A thematic framework was used to analyse the qualitative data. The implementation fidelity of the CBET curriculum for nursing and midwifery programme was significantly associated with education level ($p < 0.001$) and understanding the concept of CBET approach ($p < 0.001$). The 97% of the participants used lecture discussion and 53% used simulation in implementing CBET curriculum. Participatory methods of teaching and learning were uncommonly used due to shortage of teaching equipment (30%), time (25%) and lack of skills of some methods (13%). Participants had little understanding and interpretation of the CBET curriculum for effective implementation. For the effective implementation of Nursing and Midwifery programme, there is a need to strengthen nurse educators understanding and interpretation of the CBET curriculum. This can be achieved through mentorship programmes, constant supportive supervision and ensure that teaching and learning resources are adequate.

Keywords: CBET curriculum, Competency-based curriculum, Nurse educators' experience, Nursing and midwifery

INTRODUCTION

Competency-based Education and Training (CBET) approach has received much attention worldwide due to its perceived potential in producing competent graduates required by the labour market (Boahin, 2014, 2018). CBET can be traced back to the education of primary and

vocational teachers in the USA in the 1970s (Deißinger, 2011; Rutayuga, 2014). Poor learning in vocational education programmes was the reason for applying new principles for teacher education (Deißinger, 2011). In South Africa, the competency-based curriculum was

adopted for the first time in 1998, as a response to the acute shortage of competent professionals, including engineers, technicians and artists but also to cope with the challenging issues in the 21st century (Gunter et al., 2013).

In 2005, Tanzania introduced CBET in primary and secondary schools. In 2008, the Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC) introduced a CBET for health professionals (NACTE, 1997). The shift from the Knowledge Based Education and Training (KBET) to CBET system was influenced by the Tanzania vision 2025, the National Health Policy of 2007 and the Sustainable Development Goals (SDGs) no. 4 which emphasise the quality of education (URT, 1999).

Tanzania Vision 2025 advocates the production of a reasonable quantity and quality of people, equipped sufficiently with knowledge, skills and attitude required to meet the challenges of development at local and international levels (URT, 1999). The National Health policy emphasises on quality, accessible, affordable and equitable health services (MoHCDGEC, 2017, 2007). Furthermore, SDG no. 4 advocates for equitable quality education and promotes lifelong learning opportunities for all (URT, 1999).

The introduction of the CBET system was expected to improve the quality of nursing and midwifery services by enabling learners to develop the required competencies relevant to the health needs of the country and outside the country. According to National Council for Technical Education (NACTE) Act (1997) and policy URT (1996), the curriculum can be reviewed after a maximum period of 5 years of implementation to accommodate changes and updates. The nursing and midwifery curriculum was refined for the first time in 2009 and again major revision was done in 2017 to align with NACTE standards.

The government of Tanzania has carried out various interventions to ensure that the CBET curriculum for nursing and midwifery training is implemented effectively, including training of nurse educators in the implementation of the CBET curriculum. The training included and not limited to the concept of CBET approach, navigation of the curriculum, preparation of sessions plan, use of participatory teaching and learning methods (Mmari et al., 2019). Furthermore, the MoHCDGEC prepared standardised training materials to complement the implementation of the nursing and midwifery CBET curriculum. The skills laboratory infrastructures were established to ensure students acquire the required nursing and midwifery competencies. Moreover, classrooms and library infrastructures were refurbished to provide a conducive learning and teaching environment. Despite all these interventions, there has been no assessment to ascertain whether the nursing and midwifery CBET curriculum is implemented as it was intended (URT, 1999). In nursing

and midwifery training programme, nurse educators are the main curriculum implementers (Mmari et al., 2019).

Nurse educators are instrumental in preparing competent nurses and midwives to meet the health care needs of the society. Their characteristics and experience in competency-based approach influence their practices in implementing the CBET curriculum (Higbie, 2010). The implementation of the competency-based curriculum needs a paradigm shift (Komba and Mwandaji, 2015). KBET indicated the quantity of materials to cover in a course, while with CBET curricula, educators must determine the behaviours which students will be able to demonstrate during and at the end of a course (De las Nieves Pereira de Vallejos et al., 2017). A key conclusion of the extensive literature on the on schools success is that achieving better learning outcomes depends on enhancements in the implementation process of the curriculum (Makewa and Ngussa, 2015). Nurse educators' experiences play a crucial role in the success or a failure of the curriculum implementation (Bümen et al., 2014).

Although there are many other factors which affect learning outcomes, the implementation of the curriculum is the main school level determinant of students' performance (Higbie, 2010). Therefore, the way to explore nurse educators' experience and opinion on the implementation of the competency-based curriculum for nursing and midwifery programme is central to any systematic attempt to improve teaching and learning outcomes (Makewa and Ngussa, 2015).

While it is now almost 12 years since the competency-based curriculum for nursing and midwifery programme was adapted in Tanzania, available literature has no clear evidence of the implementation of the nursing and midwifery CBET curriculum (Mmari et al., 2019). This lack of evidence on the implementation process greatly limits the interpretation of its effectiveness. A study conducted by Lewis (Lewis et al., 2019), reveals significant gaps in the clinical performance among the new graduates, raising concerns about the models of training.

Rutayuga (2014) affirms that in Tanzania, more emphasis was put in designing and re-designing the CBET curriculum than assessing the implementation fidelity. In its recommendation Rutayuga asserts that, there was a need to follow up the curriculum implementation and assessment to ascertain the CBET pedagogical engagement both in theory and clinical settings.

Asebiomo (2009) argues that, no matter how well the curriculum is designed and developed, assessing its implementation fidelity is very crucial. Therefore, this study aimed to explore the experiences of nurse educators on the implementation of the competency-based curriculum for nursing and midwifery programme in Tanzania.

A Conceptual Framework of the Implementation of the Nursing and Midwifery CBET curriculum.

Carroll et al., (2007a) proposed a conceptual framework for implementation fidelity that includes five elements: adherence, dosage/exposure, quality of delivery, participants' responsiveness and programme differentiation. This study adapted the Carroll's conceptual framework for implementation fidelity because it supports the study objectives. However, this study adopted only three elements which included adherence, dosage and quality of delivery (Mmari et al., 2019). Azano et al. (2011) have argued that, although there are five elements in the conceptual framework for implementation fidelity, it is not necessary to assess all of them. Even a single element could be measured depending on the interest, scope of the study and can include various sources. The conceptual framework was modified to fit the context of the study; the modifications were on adherence, dosage and quality of delivery. Additionally, nurse educators' characteristics were added in the conceptual framework as they play a key role in the implementation of the curriculum (Bümen et al., 2014; Kafyulilo, Rugambuka and Moses, 2012). The three elements adapted are described in details below:

Adherence: Focuses on how nurse educators abide by the protocols and procedures of implementing a competency-based curriculum for nursing and midwifery programme. In this study, protocols and procedures included: Curriculum Master (CUM) plan, classroom, skills laboratory and clinical session plans (Mmari et al., 2019). Plans in this study refer to a systematic record about what will be covered during a session which will help nurse educators to organise content, materials, timing, sequence and activities (Dix and Hughes, 2005; Gafoor and T.K., Farooque, 2010; Morgan, 2006; Rauen, 2001; Richarde and Willy, 2002). **Dosage:** Refers to the amount, duration of contact between nurse educators and students for achieving what was intended in the curriculum (Carroll et al., 2007a). **Quality of delivery** refers to the type and relevant use of the participatory teaching and learning methods during the session delivery of the nursing and midwifery CBET curriculum (Mmari et al., 2019).

This study, therefore, explores the experiences of nurse educators in the implementation of the competency-based curriculum for nursing and midwifery programme. It specifically focused on the understanding of the concept of CBET approach, preparation of the lesson plans from the CBET curriculum and the usage of participatory teaching and learning methods in delivering CBET curriculum. The exploration of these experiences provides evidence-based information to the MoHCDGEC, Tanzania Nursing and Midwifery Council (TNMC) and NACTE about whether the nursing and midwifery curriculum is implemented as it was intended or not. Thus, helping the formulation of strategies to implement the nursing and midwifery CBET curriculum as it was intended (Duerden and Witt, 2012). Figure 1 presents the key elements of the conceptual framework for this study.

METHODS

Study Design and Approach

There is no single study design that suffices the collection of reliable and validity data (Creswell, 2003, 2014; Leech and Onwuegbuzie, 2009; Teddlie and Tashakkori, 2009). Therefore, this study adopted a descriptive cross-sectional study design using concurrent, partial mixed methods. Both qualitative and quantitative data collection was done at approximately the same time from different samples and integration occurred during the interpretation phase (Leech and Onwuegbuzie, 2009).

The mixed data was important to understand and describe the experiences of the nurse educators on the implementation of the CBET curriculum for nursing and midwifery programme in Tanzania. Furthermore, mixed methods design increases the validity and reliability of the findings (Creswell, 2003; Leech and Onwuegbuzie, 2009). Findings from qualitative data were triangulated with those from the quantitative data hence broadening the understanding of the nurse educators' experiences on the implementation of a competency-based curriculum for nursing and midwifery programme.

Study Setting

This study was carried out in selected nursing and midwifery training schools across Tanzania. There are 94 such schools; out of them 40 nursing and midwifery schools were involved in this study. Among them, 14 were government, 8 Private and 18 Faith-Based owned nursing and midwifery schools (Mmari et al., 2019). The reason to include Faith Based schools (FBOs), Private and Government schools in this study was because all are implementing the CBET curriculum for nursing and midwifery programme approved by NACTE and TNMC (Mmari et al., 2019). Furthermore, the FBOs and private schools provide a substantial amount of pre-service education and training in African countries. In Malawi and Uganda, for example, FBOs provide 70% of nursing and midwifery training; in Tanzania and Zambia, they provide between 30% and 55% of such training (Pemba et al., 2016).

Study Population

The participants in this study included nurse educators from selected nursing and midwifery schools. According to the World Health Organization (WHO), a person qualifies to be a nurse educator after completing a nursing training programme and obtain a licence to practice nursing, with a minimum of two years full-time clinical experience and a formal teaching preparation either before or soon after employment as an educator

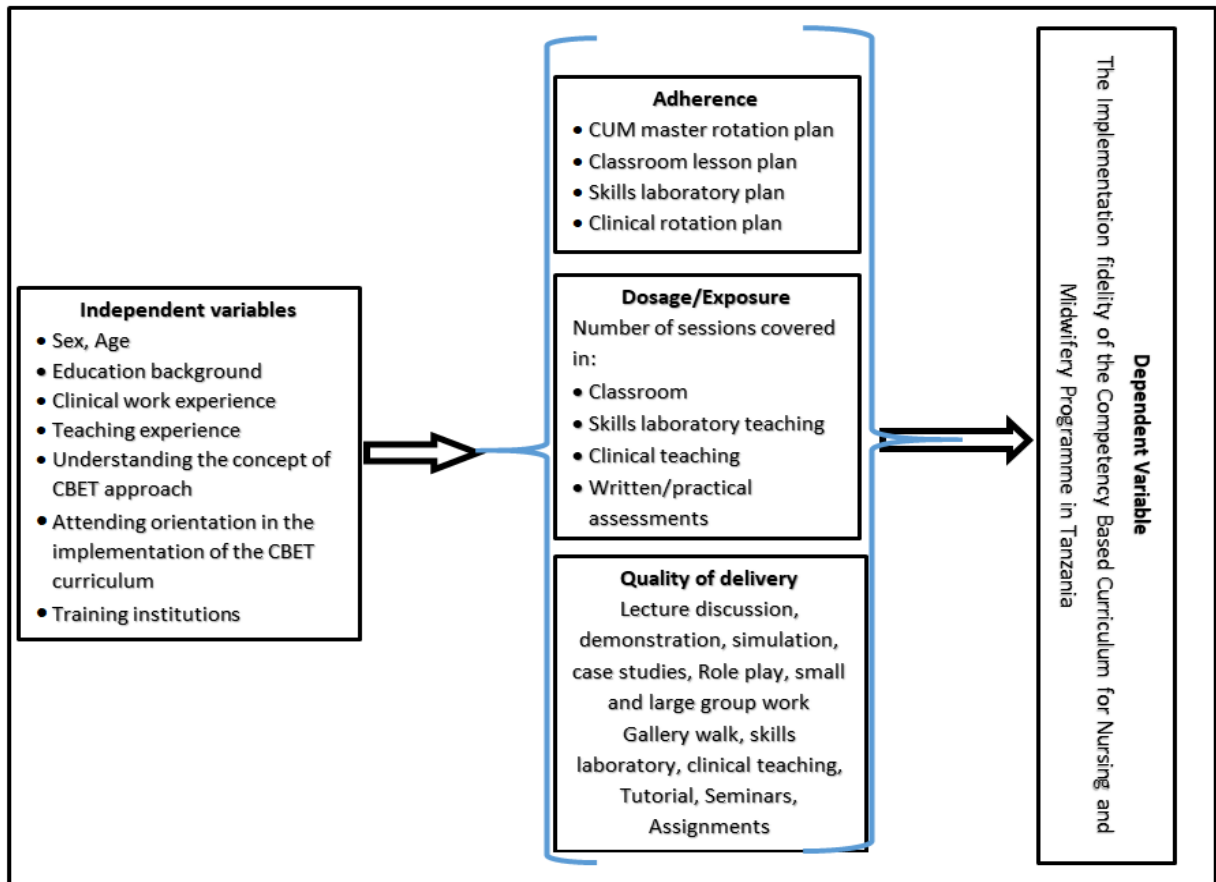


Figure 1: Conceptual framework for implementation fidelity of the competency-based curriculum for nursing and midwifery programme in Tanzania.

Source: Carroll et al., (2007b), modified by Mmari et al., (2019).

(WHO, 2006). Inclusion criteria for this study were nurse educators with 3 or more years of teaching experience of the competency-based curriculum for nursing and midwifery programme. It was expected that nurse educators with teaching experience would provide in-depth information about the implementation of the nursing and midwifery CBET curriculum (Mmari et al., 2019). Nurse educators who did not teach for the last two semesters at the time of this study were excluded.

Sample Size and Sampling Procedures

Quantitative Study

Sample size was calculated using the formula in a descriptive study by Fox and Hunn (2009). The sample size for nurse educators at the school level was obtained by using the proportionate formula by Cochran (1977). This is because the numbers of nurse educators were not equal in all nursing and midwifery schools. Sampling was done by using three-level sampling approach; the first

step was the selection of the regions from the eight training zones of Tanzania. The second step was the selection of the nursing and midwifery schools from the selected regions. The nursing and midwifery schools were purposefully selected to ensure representation of the private, government and Faith-Based Organization owned schools (Denscombe, 2010). The third step was the selection of the nurse educators from the selected nursing and midwifery schools that implemented the nursing and midwifery CBET curriculum (Cochran and Wiley, 1977).

The list of nursing educators who met inclusion criteria was obtained from nursing and midwifery schools. At the level of the school, the random sampling strategy was used to select 240 nurse educators (Gravetter and Forzano, 2011; Polit, 2008). Pieces of paper written with "Yes" or "No" written on them were prepared and put in a box. Nurse educators were required to pick only one piece of paper in the box. Those who picked piece of paper written "Yes" were assigned numbers to be involved in the study. Thereafter, all sampled nurse educators were identified by numbers and not their names.

Qualitative Study

To ensure that participants with rich experience were included, a purposeful sampling technique was used to recruit 24 nurse educators for the qualitative study (Dahlgren et al., 2004, 2007; Suri, 2011). Specifically, these were nurse educators who had a nurse educational background and teaching experience of five years and more. However, the principle of saturation guided the sampling process (Baker et al., 2012; Creswell, 2003, 2014). The school heads were asked to provide a list of nurse educators who had an experience of 5 years or more in implementing the nursing and midwifery CBET curriculum. Thereafter, the research team identified nurse educators to be included in the interview; explained the aim, objectives of the study and procedures. Those who agreed to take part in the study were requested to provide a written consent. This was followed by scheduling of the interview sessions.

Research Instrument and Data Collection

Self-administered questionnaire

A modified questionnaire formerly used to assess proficiencies of learners in the field of Science, Technology, Engineering and Mathematics (STEM) was adapted (Powers and Hughes, 2015). Some questions were modified to suit nursing and midwifery programme in the context of Tanzania (Mmari et al., 2019). The questions were based on the educator's characteristics, understanding of the competency-based approach and attending the training on the implementation of the CBET curriculum for nursing and midwifery programme. The questionnaire composed open and closed questions with 28 items. It was used because all nurse educators were asked the same set of questions in the same sequence and this increased objectivity of the collected data even though data were triangulated information from the interviews (Fisher and Foreit, 2002).

The validity of the questionnaire was established by experts' review for clarity, formatting, acceptable response options, content and wording. Three experts from the research team gave valuable feedback to validate the tool. The questionnaire was then tested for reliability using Cronbach's alpha test and scored $r=0.712$. Thereafter, the pilot study was conducted for consistency and time estimation. The pilot study was conducted on 5% of the study sample which consisted of 12 nurse educator in one school (Delwiche and Slaughter, 2003). The findings from the pilot study were not included in the major study, rather helped to modify questions narrated in the questionnaire and time estimation which varied from 20-30 minutes. After this, the questionnaire was found to be acceptable for the study.

Soon after the ethical clearance (Ref: UDOM/GR/209/Vol. II/59) and the permission letter (Ref: MP: 70933/78) were granted, four research assistants experienced in education and health research were trained to collect data.

Semi-structured interview Guide

A semi-structured interview guide was used to collect the qualitative data that was prepared by the researcher (Kyale, 1996). The questions were based on a pre-prepared topic and open-ended questions to guide the data collection (Dahlgren et al., 2004). They focused on how the nurse educators prepared lesson plans from the competency-based curriculum, how they used the scheme of study, and how they determined the number of sessions from the module they taught. These questions were intended to explore the ability of nurse educators in interpreting and understanding the CBET curriculum for nursing and midwifery programme. The interview guide was prepared in English language and later on translated into Kiswahili, the national language spoken fluently by participants and researchers.

Conducting the Interviews

Twenty-four (24) interviews with nurse educators were conducted in a quiet room in the school premises out of reach from other educators and students. All interviews were conducted by the researcher using the interview guide and all were audio-recorded (Mmari et al., 2019). Following each interview, the researcher listened to the recorded conversations and read the field notes to understand the material and determine if there were emerged issues that needed follow-up with subsequent interviews. This exercise facilitated realisation of saturation of data at 21 interviews, a point where there was no new information generated. However, the researcher decided to continue with 3 more interviews to be sure that there was no more new emerging information (Baker and Edwards, 2012). The length of the interview sessions varied from 60 to 120 minutes.

Data Analysis

Quantitative and qualitative data were analysed separately and integration was made during the interpretation.

Quantitative Data Analysis

The data were analyzed using IBM SPSS Statistics,

version 24 for Microsoft Windows. Descriptive analysis, frequency, proportion and mode were used to summarize the data. The chi-square statistic and multiple logistic models were used to test the association between variables. The quantitative data were triangulated with the qualitative to complement the data (Creswell, 2014; Teddlie and Tashakkori, 2009).

Qualitative Data Analysis

The thematic analysis method, as described by Braun and Clarke (2006) was used for qualitative data analysis and the NVivo 10 software was used to generate a coding system. Before starting the analysis, the audio-recorded interviews were transcribed verbatim, read and compared against the audio-recorded interviews to verify consistency of the content (Fusch and Ness, 2015; Maguire and Delahunt, 2017). The translated transcripts were read several times to obtain an overview of the material as described by the nurse educators. The data were organized in a meaningful way and were coded to reduce the data volume. The codes were developed and reviewed throughout the coding process and were then organized under descriptive themes (Maguire and Delahunt, 2017).

Ethical Consideration

Ethical approval to carry out this study was obtained from the Research and Publication Committee of the University of Dodoma (UDOM) (Ref: UDOM/GR/209/Vol II/59). The MoHCDGEC granted permission to conduct the study in nursing and midwifery schools (Ref: MP 70933/78). Further, written informed consent was obtained from the participants for them to be included in the study and for using audio-recording devices to record conversations during the interview. Participants were briefed about the objectives and procedures of the study and were informed about their right to agree or disagree to participate or withdraw from the study at any point in time.

Participants were made clear that the information they provided, whether orally or in writing, would be treated with strict confidentiality and they were assured that the data analysis and report findings will not identify them in any way. Participants' names were not used and the designated numbers as well as the materials collected (including hand-written notes, transcripts, and tapes) were locked in a cabinet that only the research team could access. Permission to adapt the tools was granted by the authors.

FINDINGS

Demographic Characteristics of Nurse Educators who Implemented Nursing and Midwifery CBET Curriculum (N=240)

As indicated in table 1, 240 nurse educators participated in this study. Majority of them were females (61%), 41% had a Diploma in nursing and midwifery, and 34% were between 40-50 years of age with a mean of 46. Most of the nurse educators (41%) had a Diploma in nursing and midwifery, 31% BSc in nursing and 28% MSc level. Table 1

Adherence to protocols and procedures on the implementation of the nursing and midwifery CBET curriculum

The overall adherence to protocols and procedures for nurse educators was 59%. This is the average level of implementation fidelity of the nursing and midwifery CBET curriculum. About 41% of nurse educators did not adhere to the protocols and procedures. This is a significant number of nurse educators who did not adhere to the protocols and procedures in implementing nursing and midwifery CBET curriculum which has a negative effect on the implementation fidelity. None adherence was supported by results from the interview whereby nurse educators reported that, multiple responsibilities and shortage of teaching staff limited them to adhere to the prepared protocols and procedures in implementing nursing and midwifery CBET curriculum.

"... Shortage of nurse teachers is the main reason for not following exactly what was planned, especially clinical teaching is done very rare" (Participant No.24 and Teaching Experience of 31)

"As the Head of school, I have plenty of other administrative tasks to perform so I forced myself to use extra time at night to teach my students because it is the only time I have sometimes. The other biggest burden is that I am always late when it comes to finishing the syllabus due to shortage of time and work overload. So, most of the time I lag behind the time and not being able to adhere to the prepared plans" (Participant No.1 and 5 years of teaching)

Understanding and interpretation of the nursing and midwifery CBET Curriculum

Majority of nurse educators (78%) reported understanding the concept of competency-based approach. This result was not even in the qualitative findings whereby nurse educators were unable to define

Table 1. Demographic Characteristics of Nurse Educators Implementing Nursing and Midwifery CBET Curriculum (N=240)

Variable	N	%
Age group (mean)	45.7	
<40	65	33.68
40-50	67	34.72
51+	61	31.61
Sex		
Male	91	39.06
Female	142	60.94
Highest Education level		
Diploma in nursing and midwifery	99	41.25
BSc N	75	31.25
MSc NE	66	27.50
Teaching experience (Years) before CBET		
<2	123	51.25
3+	117	48.75
Teaching experience using nursing & midwifery CBET curriculum		
≤5	106	44.17
6-10	107	44.58
11+	27	11.25

Source: Field data (2019)

Table 2. Associations between implementation of the competency-based curriculum and selected variables among nurse educators

Variable	Implementation fidelity category		Chi-square	P-value
	Without Fidelity N (%)	With Fidelity N(%)		
Education level			83.4464	<0.0001
Diploma in nursing and midwifery	86(86.87)	13(13.13)		
BSc N	42(56.00)	33(44.00)		
MSc NE	10(15.15)	56(84.85)		
Understanding the concept of CBET			17.2399	<0.0001
Yes	95(50.53)	93(49.47)		
No	43(82.69)	9(17.31)		
Attend the training on implementation of CBET			8.6295	<0.0033
Yes	70(49.65)	71(50.35)		
No	68(68.69)	31(31.31)		
Experience using CBET curriculum			2.3451	<0.3096
≤5	61(57.55)	42(42.45)		
6-10	65(60.75)	42(39.25)		
11+	12(44.44)	15(55.56)		

Source: Field data 2019

the competency-based curriculum. Below are the illustrative quotes:

"... I need more time to understand the competency-based curriculum. I am still not conversant with competency-based curriculum" (Participant No.3 with teaching experience of 37 years).

Participants further demonstrated the inability to interpret credits and notional hours stipulated in the

nursing and midwifery CBET curriculum:

"... Because one notional hour is equivalent to ten notional hours which is equivalent to one to one" (Participant No. 2, teaching experience 15 years)

As presented in table 2, it was noted that the fidelity of implementation was significantly associated with Education level ($p < 0.0001$), Understanding the concept of CBET approach ($p < 0.0001$). The majority of nurse

Table 3. Logistic Regression Model for Factors Associated with Implementation of the Nursing and Midwifery CBET Curriculum

Variable	Unadjusted OR(95% CI)	P-value	Adjusted AOR(95% CI)	P-value
Education level		<0.00		<0.00
Diploma in nursing and midwifery	Reference		Reference	
BSc N	5.198[2.479,10.897]	<0.00	4.327[1.971,9.498]	<0.00
MSc NE	37.046[15.206,90.253]	<0.00	41.186[15.075,112.525]	<0.00
Understanding the concept of CBET approach		<0.00		<0.00
No	Reference		Reference	
Yes	4.677[2.158,10.134]		2.196[0.899,5.360]	
Attended orientation on implementation of CBET curriculum		<0.00		<0.00
No	Reference		Reference	
Yes	2.225[1.299, 3.810]		2.445[1.216,4.915]	
Teaching experience using CBET curriculum		0.3164		
≤5	Reference			
6-10	0.876[0.507, 1.513]	0.6348		
11+	1.694[0.723, 3.969]	0.2246		

Source: Field data 2019

educators (50%) who understood the concept of CBET approach implemented with fidelity than those (17%) who did not understand the concept of CBET approach. Table 2

Logistic Regression Model for Factor Associated with Implementation of the Nursing and Midwifery CBET Curriculum among Nurse Educators.

Table 3 indicates that, the status of the implementation was significantly associated with Education level ($p < 0.0001$), Understanding the concept of CBET approach ($p < 0.0001$) and Attending training on the implementation of nursing and midwifery CBET curriculum ($p < 0.0036$).

The nurse educators who had MSc in Nursing Education were significantly more likely to have a high level of implementation fidelity (AOR=41.186, $p < 0.0001$) than others. Those who had Bachelor of Science were significantly more likely to have a high level of implementation fidelity (AOR=4.327, $p < 0.0001$) compared to nurse educators with a diploma in nursing and midwifery. Understanding the concept of CBET was significantly more likely to implement the CBET curriculum with fidelity (AOR=2.196, $p < 0.0001$) than those who did not.

Using the scheme of the study in determining the number of sessions from the nursing and midwifery CBET curriculum

The scheme of study is the central part of the compe-

tency-based curriculum for nursing and midwifery which determines the number of sessions to be delivered in a classroom, skills laboratory and clinical teaching sessions. It is also key to the preparation of the CUM master plan and lesson plans.

During the interviews, participants were unable to explain how they used the scheme of study when preparing a lesson plan and others were not aware of the existence of the scheme of study in the nursing and midwifery CBET curriculum. Below are some of the participants' illustrative statements quoted during the interview:

"... The scheme of study in the curriculum! Am not sure if I know it, any other name? (Participant No. 19, with 16 years of teaching)

"...Scheme of study is like... we don't have scheme of study in the curriculum" (Participant No. 20, with 42 years of teaching)

Preparing and using lesson the plan for teaching and learning from the CBET curriculum

Majority (87%) of the participants reported to have a lesson plan and that they were using it. However, during the interviews, it was learned that nurse educators had difficulty to explain how they prepared a lesson plan from the nursing and midwifery CBET curriculum.

"I prepare my session using the curriculum which identifies the principle learning outcome and sub enabling outcome (...) through the related tasks it is what helped me to prepare sessions" (Participant No. 1, 5 years teaching experience).

Another nurse educator with more than 20 years of teaching experience reported using a facilitator's guide to get the number of sessions and credits in a module:

"...I first consult facilitator's guide which is special prepared for us educators for teaching purposes but also there is a student's manual which is for students. I read the facilitator's guide roughly (...) it has been stated there together with the corresponding amount of credits" (Participant No. 11, 23 teaching experience).

The implementation of the nursing and midwifery CBET curriculum requires effective lesson plans. However, the findings indicate the inability of the nurse educators to prepare a lesson plan from the nursing and midwifery CBET curriculum. This is attributed to the inability to interpret and understand the competency-based curriculum as indicated in this study where some participants were not able to explain how they prepared lesson planning from the nursing and midwifery CBET curriculum.

Using Participatory teaching and learning methods in implementing CBET curriculum

Majority of participants used lecture and discussion (97%) whereas simulation was the lesser method used (53%). Challenges associated with employing the participatory teaching methods reported by most of the participants included shortage of teaching equipment in the class/clinical area (30%), time constraints (25%), some methods need special skills (13%) and large number of students in the class (10%). Consistent with these results, participants in the qualitative study reported the same challenges as stated in the quotes below:

"...To say the truth, the demonstration method become problematic once you have a large class; meaning a large number of students in one class. In terms of simulation, majority of us do not clearly understand how to use it as a method of teaching" (Participant No. 1, 24 years teaching experience)

"...The number of students is so big; it becomes difficult to get ratio of 1 teacher to 5 students, in order for them to have a chance to do a return demonstration and achieve the required competencies. We have a large number of students that lead to a situation which I prepare only two demonstration activities in order to fit for the available time" (Participant No. 6 with 22 years teaching experience)

Other participants could not frequently use participatory teaching and learning methods because of a shortage of equipment:

"...Shortage of equipment, or even if they were present was no similar situation with a real patient" (Participant No. 5 with 23 years teaching experience)

From the above findings, it is clear that demonstration and simulation as participatory teaching and learning methods were not being applied as it is required by

competency-based teaching. This limited the interaction between the nurse educators and the students and acquisition of the competencies as required in the implementation of the nursing and midwifery CBET curriculum.

DISCUSSION

The study aimed to describe the experience of the nurse educators on the implementation of the nursing and midwifery CBET curriculum in Tanzania. The results of the interview and self-reporting were triangulated to increase the validity and reliability of the findings and mitigate self-reporting bias (Creswell, 2014; Salters-pedneault, 2019; Teddlie and Tashakkori, 2009).

Adhering to protocols and procedures when implementing nursing and midwifery CBET curriculum

Despite that, the majority of nurse educators reported to have adhered to the protocols and procedures in implementing nursing and midwifery CBET curriculum but there is no much difference from adhered and none adhered. The possible explanation of these findings is due to the superficial understanding of the interpretation of the CBET curriculum. The results were further showed that, nurse educators were occupied with other responsibilities when implementing the curriculum hence, hindered their adherence to procedures and educational plans of implementing nursing and midwifery CBET curriculum. This suggests that, nurse educators were struggling to adhere to the prepared educational plans and procedures in implementing a competency-based curriculum for nursing and midwifery programme.

The concept of non-adherence is also reported by Okrah, (2002) whose results reveal a very minimal degree of teachers' commitment to the fidelity model in the implementation of the competency-based curriculum. The factors that contributed to teachers' non-adherence to the fidelity in the programme that could facilitate the delivery and learning of a competency-based curriculum were; lack of clarity about some parts of the curriculum and the unavailability of teacher's manual that could help implement the competency-based curriculum.

Eulmesekian et al. (2017) reported on the implementation fidelity of a checklist to increase adherence to evidence-based practice in a paediatric intensive care unit. The results show that only half of them were able to adhere to the checklist. This echoes findings by Wang et al., (2015) on the factors influencing implementation dose and fidelity of an evidence-based national HIV prevention programme which reveals that the adherence to the classroom format activities outlined in the teaching manual was not a hundred per cent as

it was expected.

Factors contributing to no-adherence in other previous studies are similar to what nurse educators reported in this study namely; lack of facilitators and students' manual, time was not enough for the programme, lack of teaching equipment/resources, shortage of trainers, not understanding well some parts of the competency-based curriculum, too much workload, lack of teaching motivation and commitment among trainers (Mihalic, 2002; Wang et al., 2015)

Understanding and interpretation of the nursing and midwifery CBET based curriculum

For the effective implementation of the competency-based curriculum, nurse educators need to understand its concept (Kanyonga et al., 2019). In this study, the results show that majority of nurse educators self-reported that, they understand the concept of CBET approach while a few reported not understanding the concept of competency-based curriculum. This is contributed by their limitation in translating and interpreting the competency-based curriculum as it was evident through the interviews that they were not able to differentiate credit and notion hours as well as understanding part of the competency-based curriculum. This is a major concern in the nursing and midwifery training field where nurse educators are the bedrock of implementing the nursing and midwifery CBET curriculum. The findings from this study are similar to a study conducted by Komba & Mwandaji (2015) on the reflection of the implementation of the competency-based curriculum in Tanzania secondary schools. Komba found out that, 86% of participants did not have a proper understanding of the same concept. Another study was conducted by Kafyulila et al., (2012) on the implementation of the competency based curriculum on pre-service teachers in Morogoro. The results indicated that, only a few participants could define the competency-based approach while the majority failed at it.

Similar findings were presented by Okrah (2002) who identified the factors that contributed to teachers failure to facilitate the delivery of the competency based curriculum. The factors identified were; lack of understanding about some aspects of the competency-based curriculum and lack of teachers' manual that could help implement the competency-based curriculum. These findings echo the findings of Kanyonga et al., (2019) who found that, trainers did not understand much about the meaning and characteristics of the CBET curriculum.

This study confirms that, nurse educators with high level of education, who understand the concept of CBET curriculum and who attended training on the implementation of the CBET curriculum were more likely to implement the curriculum with high fidelity. This implies that, more efforts and emphasise should be placed on the

re-training and mentorship to ensure the nursing and midwifery CBET curriculum is implemented as it was intended. Additionally, the provision of teaching and learning resources to facilitate the application of participatory teaching methods is of paramount importance.

Previous studies suggest that, implementation of the competency-based curriculum requires teachers and educators to properly understand the concept and interpret the CBET curriculum (Bümen et al., 2014; Duerden and Witt, 2012). The appropriate interpretation of the CBET curriculum is key for nurse educators to be able to implement it effectively (Kanyonga et al., 2019).

Preparation of the lesson plan to deliver competency-based curriculum

A lesson plan is a written description of how learners will move toward attaining specific learning objectives (Gafoor and Farooque, 2010; Richarde and Willy, 2002). A lesson plan for nursing and midwifery CBET curriculum indicates a list of competencies to be achieved and participatory teaching and learning methods. For an effective teaching and learning experience, nurse educators need to focus on the prepared lesson plan (Dix and Hughes, 2005).

The findings from the interview revealed that, participants had difficulties in explaining how to prepare lesson plans. This implies that, participants had difficulty to interpret the competency-based curriculum of which is very important in implementing it. The results of this study are similar to the findings of Komba et al., (2015) on the reflection of the implementation of the competency-based curriculum; it was found that, a majority of the reviewed lesson plans did not have the quality of the competency-based lesson plans. Further, in the study conducted by Kafyulila et al., (2012) on the implementation of the competency-based curriculum on pre-service teachers in Tanzania, participants were asked to prepare a lesson plan for any subject of their interest and 19% of them were not able to write a lesson plan despite ample time being given.

When the competency-based curriculum was introduced in the nursing and midwifery programme, nurse educators were trained in its usage and in lesson planning. Notably, the limitation on the understanding of the concept of competency-based approach hindered their ability to prepare a lesson plan for the same. Documented literature indicates that few teachers and educators do make their lesson plans regularly. Moreover, they find it difficult to prepare and use it (Gafoor and Farooque, 2010; Richarde and Willy, 2002). When nurse educators were not using the lesson plan, it is very possible to omit the stipulated competencies in the implemented curriculum.

Use of the Scheme of study in the Nursing and Midwifery CBET Curriculum

These findings indicate that, the mean number of years of teaching experience among nurse educators implementing competency-based curriculum for nursing and midwifery was 6 years. According to Benner's theory (Benner, 1984) from "Novice to expert", six years' experience is considered under the expert category. An expert nurse educator would be expected to operate from a deep understanding of the competency-based curriculum in its entirety. The nurse educators' performance with 6 years of experience was expected to become fluid, flexible and highly skilful (Benner, 1984; Bümen et al., 2014). In contrast, from the interviews it was clear that, they did not demonstrate the understanding to interpret the study of the nursing and midwifery CBET curriculum.

This further suggests that, nurse educators have insignificant understanding of the competency-based curriculum thus being unable to explain how they used the scheme of study for the preparation of the lesson plans. This questions the realisation of the SDG no. 4, according to which nurse educators must ensure all learners acquire the knowledge and skills needed to promote sustainable development. Although policymakers, implementers and other educational stakeholders believe that, nursing and midwifery programme in Tanzania is implementing the competency-based curriculum, findings of this study are not convincing of the same.

Usage of Participatory teaching and learning Methods in implanting CBET Curriculum

Facilitation in nursing and midwifery education is an important initiative that aims to encourage learning and teaching. For the effective implementation of the competency-based curriculum for nursing and midwifery programme, the use of participatory teaching and learning methods is highly emphasised because these methods allow the learners to improve their confidence and skills.

The findings from this study reveal that, nurse educators were less using demonstration and simulation.

This was simply, due to large number of students and lack of skills to apply simulation. The results from this study are consistent with the findings from Kanyonge et al., (2019) who found that more than half of the trainers used lecture and discussion. Previous studies confirm that, to ensure learner's acquisition of competencies, participatory teaching and learning in the nursing profession such as demonstration and simulation must be applied (Dix and Hughes, 2005; Jeggels, 2010). Effective use of participatory teaching and learning requires nurse educators to have skills on the use of them as

recommended in the CBET curriculum (Board, 2012; Olga, 2009).

The experiential learning model of Kolb is the theory that fits the competency-based teaching well (Jeggels, 2010). The demonstration and simulation teaching methods provide learners with an opportunity to cultivate the clinical competencies prior to their placement in a real clinical setting (Jeggels, 2010). For learners to acquire clinical competencies, skills laboratory should mimic the clinical settings (Dix and Hughes, 2005). According to Kolb, the experiential model says learners must be exposed to reality and that throughout the learning process, they must be given appropriate comments for improvement (Jeggels, 2010). When demonstration and simulation methods are effectively applied, they enable the learners to gain the required competencies and become confident in real-time practice.

Conformability

Conformability refers to the degree to which the results could be confirmed or corroborated by others (Anney, 2014). Since the experiences of the researcher could have influenced the interpretation of the results; however, this was achieved in this study by ensuring that the research team belongs to a mix of various professional backgrounds; including nursing and midwifery, nursing education, curriculum developer and professor of education. This promoted the interpretation and understanding of results that required analytical reflection on each researcher's preconceptions. This also strengthened the results through constructive deliberations and broadens the understanding of the implementation fidelity of the competency-based curriculum for nursing and midwifery programme in Tanzania.

Limitation of the study

There was limited literature on the implementation fidelity of the competency-based curriculum for nursing and midwifery programme. However, the studies of the same from other fields including education provided some light for this study to make references.

The interviews were translated from Kiswahili to English language; it is likely that during the translation the meaning may be altered. To ensure that the meaning of the participant's account was not derailed, the translated transcripts were cross-checked with original Kiswahili transcripts for accurate translation. Further, two transcripts were back-translated by another person and there was no significant difference in meaning.

Implication of the findings

The findings from this study indicate that, with limited

understanding among nurse educators to interpret the CBET curriculum, it is difficult to achieve optimal fidelity of the curriculum implementation. This study clearly identified that implementation of the competency-based curriculum for nursing and midwifery programme is hampered by lack of understanding the CBET curriculum, teaching and learning resources and large number of students in class.

This study, therefore, provides an opportunity for further research including the assessment of the competencies of nurse educators to implement competency-based curriculum, infrastructure and available resources to implement the curriculum effectively.

CONCLUSION

Although, the nursing and midwifery CBET curriculum has been implemented for almost 12 years now, nurse educators in this study were still struggling to translate it. This indicates that, nurse educators were struggling to implement the nursing and midwifery CBET curriculum. Thus, it underscores the need to provide continuity on the job training and mentorship to nurse educators on the implementation of the nursing and midwifery CBET curriculum and provision of teaching resources to facilitate the effective implementation of the same. The training should emphasise more and not limited to navigation of the CBET curriculum, interpretation of the scheme of study, preparation of the lesson plans and use of participatory teaching and learning methods. Much more, what it means to facilitate competency-based curriculum.

RECOMMENDATIONS

- Directorate of Human Resource and Development at the MoHCDGEC should develop nurse educators' competencies which are necessary for implementing the nursing and midwifery CBET curriculum effectively.
- Directorate of Human Resource and Development at the MoHCDGEC in collaboration with TNMC and NACTE can jointly develop a mentorship programme to build capacity for nurse educators in Tanzania.
- The MoHCDGEC should ensure adequate teaching and learning resources, competent and adequate number of nurse educators.
- The MoHCDGEC should give priority of employment for nurse educators with high level of education for effective implementation of nursing and midwifery CBET curriculum.

List of abbreviations

CBET: Competency Based Education and Training

CUM: Curriculum Master

KBET: Knowledge Based Education and Training

MoHCDGEC: Ministry of Health, Community Development, Gender, Elderly and Children

NACTE: National Council for Technical Education

TNMC: Tanzania Nursing and Midwifery Council

Declaration

This work is based on a thesis that will be submitted to the University of Dodoma, Tanzania for the award of Doctor of Philosophy in Nursing Education.

Consent for Publication

Not applicable

Availability of data and materials

They are available on request. They can be requested from the first author.

Competing Interest

The authors declared that they have no competing interests

Funding

No funding support was involved in this Publication.

Authors' Contribution

VBM initiated the idea of the study and had a major role in preparing the first draft of the manuscript. LTM, SKM and KMO have made a substantial contribution in the study design, data collection, analysis and writing the manuscript. All authors read and approved the final version of the manuscript.

ACKNOWLEDGEMENT

The authors would like to thank the Ministry of Health, Community Development, Gender, Elderly and Children for granting permission to collect information and review the document in the nursing and midwifery schools of Tanzania. Furthermore, they are grateful to the leadership of the University of Dodoma for the approval of this study and to the Heads/Principals/Directors and all staff of the nursing and midwifery schools for their cooperation

throughout the process of data collection. They also sincerely appreciate all participant's time and efforts for sharing their experiences. Additionally, the authors appreciate the contribution of the team that participated in data collection and analysis.

REFERENCES

- Anney VN (2014). Ensuring the Quality of the Findings of Qualitative Research : Looking at Trustworthiness Criteria, 5(2), 272–281.
- Asebiomo AM (2009). Teachers assessment of integrated science Curriculum in Federal Capital Territory Abuja for effective implementation. *Journal of Curriculum Studies*.
- Azano A Callahan CM, Foster M (2011). Exploring the relationship between fidelity of implementation and academic achievement in a 3rd grade gifted curriculum. A mixed methods study. *Journal of Advanced Academics*.
- Baker SE, Edwards R (2012). How many qualitative interviews is enough? National Centre for Research Methods Review Paper, 1–42. <https://doi.org/10.1177/1525822X05279903>
- Baker SE, Edwards R, Adler P, Becker HS, Doucet A (2012). How many qualitative interviews is enough ? Expert voices and early career reflections on sampling Expert voices. National Center for Research Methods. Southampton.
- Benner P (1984). *From Novice to expert: Excellence and Power in Clinical Nursing Practice*. Addison-Wesley: Menlo Park.
- Boahin P (2014). Competency-Based Training (CBT) in higher education Towards an implementation in Ghanaian polytechnics Peter Boahin.
- Boahin P (2018). Competency-Based Assessment and Reporting in Ghanaian Polytechnics : A Critique of the Prevailing Perceptions, 9(5), 131–140.
- Board SN (2012). Standards For Clinical Nursing, 1–14. Retrieved from <http://www.snb.gov.sg>.
- Braun V, Clarke V (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
- Bümen NT, Çakar E, Yildiz DG (2014). Curriculum Fidelity and Factors Affecting Fidelity in the Turkish Context Nilay. *Educational Sciences: Theory and Practice*, 14(1), 219–228. <https://doi.org/10.12738/estp.2014.1.2020>
- Carroll C, Patterson M, Wood S, Booth A, Rick J, Balain S (2007a). A conceptual framework for implementation fidelity, (November 2007), 1–9. <https://doi.org/10.1186/1748-5908-2-40>
- Carroll C, Patterson M, Wood S, Booth A, Rick J, Balain S (2007b). A conceptual framework for implementation fidelity. *Implementation Science*, 2(1), 1–9. <https://doi.org/10.1186/1748-5908-2-40>
- Cochran, W. G., & Wiley, J. (1977). *Sampling Techniques* (3rd Editio).
- Creswell JW (2003). *Research Design: Qualitative, Quantitative and Mixed methods Approaches*. United Kingdom: Sage Publication, Inc.
- Creswell JW (2014). *Research Design:Qualitative, Quantitative and Mixed Methods Approach* (4th ed). London: SAGE Publications, Inc.
- Dahlgren L, Emmelin M, Winkivist A (2004). *Qualitative Methodology for international Public Health*. Umea: Epidemiology and Public Health Science. Department of Public Health and Clinical Medicine. Umea University.
- Dahlgren L, Emmelin M, Winkivist A (2007). *Qualitative methodology for international public health Umea: Epidemiology and Public Health Sciences*. Umea University.
- De las Nieves Pereira de Vallejos, Giménez Morel RA, Tusing J (2017). Implementation of competency-based curriculum: College of Philosophy, Universidad Nacional del Este, Paraguay. *The J. Competency-Based Edu.* 2(1), e01038. <https://doi.org/10.1002/cbe2.1038>
- Deißinger, T. (2011). Structures and functions of Competency-based Education and Training (CBET): a comparative perspective. *Beiträge aus des praxis der beruflichen bildung* (Vol. 14).
- Delwiche LD, Slaughter SJ (2003). *The little SAS book* (Third Edit). SAS Institute Inc., SAS Campus Drive, Cary, North Carolina 27513.
- Denscombe M (2010). *Ground rules for social research: guidelines for good practice*. Maidenhead Berkshire: Open University Press.
- Dix G, Hughes S (2005). Teaching students in the classroom and clinical skills environment, 41–47.
- Duerden M, Witt PA (2012). *Assessing Program Implementation : What It Is , Why It ' s Important , and How to Do It*. *J. Ext.* 50(1), 1–8. Retrieved from www.joe.org/joe/2012february/a4p.shtml
- Eulmesekian P, Ferrero M (2017). Implementation of a checklist to increase adherence to evidence-based practices in a single pediatric intensive care unit, 115(5), 446–452.
- Fisher AA, Foreit JR (2002). *Designing HIV/AIDS Intervention studies, An Operation Research Handbook*. New York: The Population council, Inc.
- Fox N, Hunn A (2009). *Sampling and Sample Size Calculation Authors*.
- Fusch O, Ness LR (2015). Are we there yet? Data saturation in Qualitative Research. *TQR*.
- Gafoor KA, TK Farooque, U. (2010). Ways to improve Lesson Planning: Astudent Teacher Perspective, (November), 1–12.
- Gravetter FJ, Forzano LB (2011). *Research Methods for the Behavioural Sciences* Cengage Learning.
- Gunter R, Klaus B, Laura R (2013). *Through Competence-Based to Employment-Oriented Education and Training*. (R. Gunter, Ed.). Berlin: Deutsche Gesellschaft.
- Higbie JK (2010). Perceived Levels of Nurse Educators ' Attainment of NLN Core Competencies.
- Jeggels JD (2010). Revitalization of clinical skills training at the University of the Western Cape, (June), 51–59.
- Kafyulilo A, Rugambuka I, Moses I (2012). The implementation of competency base teaching approaches in Tanzania: The case of pre-service teachers at Morogoro teacher training college.
- Kanyonga L, Mtana N, Wendt H (2019). Implementation of competence-based curriculum in technical colleges : The case of Arusha City, Tanzania, (October). <https://doi.org/10.5897/IJVTE2018.0262>
- Komba SC, Mwandaji M (2015). Reflections on the Implementation of Competence Based Curriculum in Tanzanian Secondary Schools. *J. Edu. Learn.* 4(2), 73–80. <https://doi.org/10.5539/jel.v4n2p73>
- Kyale S (1996). *An introductory to Qualitative Research Interviewing*. SAGE.
- Leech NL, Onwuegbuzie AJ (2009). A typology of mixed methods research designs, 265–275. <https://doi.org/10.1007/s11135-007-9105-3>
- Lewis TP, Roder-dewan S, Malata A, Ndiaye Y, Kruk ME (2019). Clinical performance among recent graduates in nine low - and middle - income countries Clinical performance among recent graduates in nine low- and middle-income countries, (March). <https://doi.org/10.1111/tmi.13224>
- Maguire M, Delahunt B (2017). *Doing a Thematic Analysis : A Practical , Step-by-Step Guide for Learning and Teaching Scholars .*, 3(3).
- Makewa LN, Ngussa BM (2015). Curriculum Implementation and Teacher Motivation, 244–258. <https://doi.org/10.4018/978-1-4666-8162-0.ch013>
- Mihalic S (2002). The importance of implementation fidelity. Center for the Study and Prevention of Violence, 442 UCB(April), 1–16.
- Mmari V, Stephen K, Lilian M, Kalafunja O (2019). The Implementation Fidelity of Competency Based Curriculum for Nursing and Midwifery Programme in Tanzania : A protocol for a Mixed Methods Study. *Nursing and Primary Care*, 3(2), 1–6. <https://doi.org/10.33425/2639-9474.1101>
- MoHCDGEC, U. (2007). *Sera ya afya*.
- MoHCDGEC. (2017). *THE UNITED REPUBLIC OF TANZANIA The National Health Policy 2017*, (October).
- Morgan, R. (2006). Using clinical skills laboratories to promote theory-practice integration during first practice placement: an Irish perspective. *Journal of Clinical Nursing*, 15(2), 155–161.
- NACTE. (1997). *The National Council for Technical Education Act*. Dar es Salaam.
- NACTE. (2015). *Professionalising Competence-based Education and Training (CBET) through Enhancing a Professional Dimension*. Dar es Salaam. Retrieved from <http://www.nacte.go.tz/files/PUBLICATIONS/1339643616.pdf>
- Okrah Abraham K (2002). Fidelity approach to curriculum implementation: A case of transacting the Core English curriculum in senior secondary schools in the Brong Ahafo Region of Ghana. Retrieved from <http://hdl.handle.net/123456789/1837>
- Olga, M. (2009). Implementation of the South Africa National Curriculum: The educators perspectives, 1–10.
- Pemba S, Centre TT, Health I, Ministry T, Welfare S, Foundation N, Africa E (2016). *Addressing Tanzania ' s Health Workforce Crisis Through a Public-Private Partnership : The Case of TTCIH*.
- Polit DF (2008). *Nursing Research: Generating and Assessing Evidence for Nursing Practice*. (H. Hilarie SurrKogutena, Ed.) (8th ed.).
- Powers, S., & Hughes, M. (2015). ERIC FOI Report 10. East Medlock: Southwest Education Consulting Associates INC. Retrieved from

- www.sweca.info
- Rauen C (2001). Using simulation to teach critical thinking skills. You just can't throw the book at the. *Critical Care Nursing Clinics of North America*, 13(1), 93–103.
- Richarde J, Willy R (2002). *Methodology in Language Teaching: An Anthology of Current Practice*. (R. C. Jack & R. A. Willy, Eds.). New York: Cambridge University Press.
- Rutayuga AB (2014). The emerging Tanzanian concept of competence: conditions for successful implementation and future development.
- Salter-Pedneault, B. K. (2019). The Use of Self-Report Data in Psychology, 1–2.
- Suri H (2011). Available from Deakin Research Online : Purposeful Sampling in Qualitative Research Synthesis. *Qualitative Res. J.* 11(2), 63–75. <https://doi.org/10.1108/JPBM-03-2015-0835>
- Teddlie C, Tashakkori A (2009). *Foundation of Mixed Methods Research: Integrating Quantitative and Qualitative Approach in the Social and Behavioral Sciences*. (V. Knight, S. Connelly, L. Habib, S. Quesenberry, & Cheryl Duksta, Eds.). 55 City road London EC1Y 1SP United Kingdom: SAGE Publications, Inc.
- URT. (1996). *The Technical Education and Training Policy in Tanzania*. Dar es Salaam.
- URT. (1999). *Tanzania Development Vision 2025*. Retrieved from http://www.mipango.go.tz/index.php?option=com_docman&task=doc_download&gid=68&Itemid=62
- Wang B, Stanton B, Deveaux L, Poitier M, Lunn S, Koci V, Rolle G (2015). Factors influencing implementation dose and fidelity thereof and related student outcomes of an evidence-based national HIV prevention program. *Implementation Science*. <https://doi.org/10.1186/s13012-015-0236-y>
- WHO. (2006). *Nurse educator core competencies*. Geneva: WHO Library Catalogue-in Publication Data.