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Bridging the Competency Gap: Evaluating Midwifery Education Capacity in Nigeria through a Mixed-Methods Study

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Abstract

Background

Competency-based education is widely promoted as the global standard for midwifery training, yet evidence on how institutional capacity influences its implementation in low- and middle-income countries remains limited. Nigeria bears one of the world's highest maternal mortality burdens, and strengthening the competence of the midwifery workforce is central to improving maternal and newborn outcomes. While policy frameworks increasingly emphasise competency-based training, less is known about whether training institutions possess the educator capacity, infrastructure, and learning environments necessary to deliver such programmes effectively. This study assessed the preparedness of midwifery training institutions in Nigeria to implement competency-based education and examined how institutional conditions influence competency outcomes among educators and students.

Methods

A convergent mixed-methods study was conducted in 19 accredited midwifery training institutions across 11 Nigerian states. Clinical competency of midwifery educators (n = 82), clinical preceptors (n = 22), and final-year midwifery students (n = 72) was assessed using Objective Structured Clinical Examinations (OSCEs) covering neonatal resuscitation, postpartum haemorrhage management, and labour care monitoring. Institutional capacity was assessed through structured facility audits, surveys, and 37 direct teaching observations. Mixed-effects logistic regression examined associations between institutional characteristics and OSCE performance. Qualitative data from 12 in-depth interviews with educators and preceptors and three focus group discussions with students were analysed thematically to explore barriers and facilitators to effective midwifery education.

Results

Clinical competency across all groups was low. Only 6% of participants passed the neonatal resuscitation basic life support OSCE, 10% passed postpartum haemorrhage management, and 1% passed the labour care guide assessment; none demonstrated competency across all three skills. Institutional assessments identified substantial capacity constraints, including high student-to-educator ratios (mean 51.7:1), limited simulation infrastructure, and inadequate teaching resources. Upgraded skills laboratories were strongly associated with improved performance in postpartum haemorrhage management (OR 44.4, 95% CI 9.1–217). Qualitative findings highlighted limited faculty development opportunities, outdated teaching equipment, and reliance on didactic teaching approaches as key barriers to effective competency-based training.

Conclusions

The findings demonstrate that gaps in institutional capacity and educator preparation constrain the implementation of competency-based midwifery education in Nigeria. Strengthening faculty development, simulation-based training infrastructure, and clinical learning environments is essential to improve competency outcomes in pre-service training. Addressing these structural barriers through national initiatives such as the Midwifery Accelerator Programme and the Maternal and Newborn Mortality Reduction Innovation and Initiatives (MAMII) could strengthen the pipeline of competent midwives and contribute to improved maternal and newborn health outcomes in Nigeria and other resource-constrained settings.

Background

In 2025, the World Health Organization (WHO) reported that Nigeria is estimated to have the highest maternal mortality ratio (MMR) (993 per 100,000 live births) and the fourth highest neonatal mortality rate (34.3 per 1000 live births) in sub-Saharan Africa (1). Strengthening midwifery education to international standards equips midwives with the relevant knowledge and skills to provide quality maternity care, which is critical to potentially avert two-thirds of maternal and newborn deaths (2).

Similar to that in many low- and middle-income countries (LMICs), midwifery education in Nigeria faces significant challenges that hinder the production of a competent and sustainable midwifery workforce. For instance, some midwifery programs prioritise quantity over quality, leading to the proliferation of underqualified multipurpose health workers who lack full midwifery competencies (3, 4). Systemic challenges, such as insufficient workforce, poor remuneration, negative public perceptions of midwives, and a lack of essential resources and equipment, further impede midwifery education and practice in Nigeria and other sub-Saharan African countries (5). Additionally, midwifery schools often operate with outdated curricula, inadequate clinical training opportunities, inadequate infrastructure, and underqualified faculty, resulting in inadequately prepared graduates who may not meet international competency standards (6, 7). A critical gap remains in aligning midwifery education programs in Nigeria with global standards, focusing on governance, faculty qualification and competence, structured student admission processes, and a robust curriculum, as per the ICM Global Standards for Midwifery Education 2025 (8). To address this, Nigeria launched its national strategic direction for Nursing and Midwifery 2025–2030 to improve the quality of midwifery training and practice through the integration of essential maternal and newborn health (MNH innovations and competency-based education (9).

Competency-based education (CBE) refers to an outcomes-based approach to learning that places knowledge and skills in the context of practice and reinforces the mastery of learning (10, 11). CBE enables midwifery students to acquire critical thinking, values, and clinical decision-making abilities essential for the provision of safe care in midwifery practice (12). It is widely advocated as the gold standard for pre-service midwifery training (10). However, its implementation and sustainability across Africa are low due to inadequate institutional support, weak monitoring systems, and resource constraints (3, 12). There is also a tendency for poor implementation of CBE, either as a consequence of *fear* to try something new or due to limited capacity for execution (13). For instance, the International

Competency-Based Health Professions Education Collaborative reported that data on CBE for health in LMICs are lacking, mostly due to the recent introduction of the concept and the non-availability of national data on implementation (13). This is further exacerbated by the challenges to midwifery education highlighted above.

The capacity of midwifery educators is critical to producing competent graduates for service delivery. While multilevel approaches engaging individuals, institutions, and policy environments are recommended for strengthening educator competence, evidence on effective strategies remains limited (14). Faculty development initiatives are often insufficient, and clinical preceptors may lack the training needed to mentor students effectively (4, 7, 15, 16). Furthermore, investment in midwifery education research is strikingly low, with few robust studies evaluating the effectiveness of pre-service or in-service training programs in LMICs (4, 17).

Previous studies have largely focused on curriculum content, with little attention to structural and faculty-related barriers, or have narrowly focused on emergency obstetric skills rather than comprehensive midwifery competencies (12, 18). Evidence-grounded and well-evaluated educational interventions are needed to address the practical, implementation-based challenges undermining pre-service midwifery education, particularly the clinical competency of educators and the adequacy of teaching resources. This is critical to align midwifery education in Nigeria with the ICM global standards for midwifery education (2025) and the Nigeria Strategic Direction for Nursing and Midwifery (2025). This study assessed the preparedness of midwifery training institutions in selected states in Nigeria by focusing on faculty competencies (both midwifery educators and preceptors) in teaching using the prescribed midwifery curriculum. The assessment also evaluated the adequacy of the resources required to deliver the curriculum. Barriers and facilitators to effective midwifery education in Nigeria were explored in the study sites.

This study forms part of a broader evaluation of maternal and newborn health interventions implemented under the Maternal and Newborn Mortality Reduction Innovation and Initiatives (MAMII) strategic framework and program in Nigeria. The objectives of the MAMII program focus on strengthening the demand and supply of quality health services (19). MAMII uses a combination of innovative interventions, including competency-based pre-service and in-service training; an innovative service delivery model to increase the promotion, provision, and uptake of care in community settings; the deployment of additional trained staff to low-density areas, including upskilled community health extension workers (CHEWs); and a package of medicines and equipment to address postpartum haemorrhage in selected states with high mortality rates over three years (19).

Methods

Study design

A convergent mixed methods approach was used in this study. This approach is useful because it provides a comprehensive understanding of institutional preparedness, competency levels, and barriers to effective midwifery education and training. The quantitative component comprised a cross-sectional survey to assess the preparedness of midwifery institutions (equipment and infrastructure) and the competency skills of midwifery educators, preceptors, and final-year midwifery students in the selected institutions in Nigeria. The qualitative component comprised 12 in-depth interviews with midwifery educators and preceptors and 3 focus group discussions with midwifery students to explore the barriers and facilitators to effective midwifery education and training in Nigeria.

Study setting and selection

The study was conducted in 19 midwifery training institutions across 11 states within five geopolitical zones of Nigeria: North-West (Kaduna, Kano, and Zamfara), North-East (Borno, Bauchi, and Yobe), North-Central (Niger and Plateau), South-South (Akwa Ibom), and South-East (Ebonyi). These institutions were purposively selected by the Nursing and Midwifery Council of Nigeria (20) as part of the MAMII program. The eligibility criteria required that the institutions be officially recognised and accredited by the NMCN. All participating colleges of nursing and midwifery offered the Basic Midwifery Programme (diploma level), with only one institution offering a post-basic midwifery programme at the time of data collection. In accordance with NMCN regulations, the Basic Midwifery Programme has a duration of three years, whereas the post-basic midwifery programme lasts for 18 months. Of the 19 public institutions included in the study, four were federally funded and 15 were funded by state governments.

Recruitment

Recruitment commenced following the receipt of ethical approval from the LSTM UK and the National Health Ethics Committee of Nigeria (NHREC) in February 2025. The Nursing and Midwifery Council of Nigeria (20) issued official communications to the heads of participating institutions outlining the study rationale, procedures, and proposed fieldwork dates in advance of field visits by the research team. On the day of data collection, the research team held separate meetings with heads of institutions, midwifery educators, preceptors, and students to present the study objectives and procedures and address any questions, after which written informed consent was obtained from all participants who agreed to participate. Participants were assured that participation was voluntary and that confidentiality would be maintained throughout the study.

Data collection

Data were collected by an experienced and trained research team based in Nigeria. Team members had professional backgrounds in midwifery and obstetrics/gynaecology and were educators from non-intervention institutions, ensuring familiarity with midwifery education, implementation research, and clinical practice in the Nigerian context. Data were collected in February and March 2025. Quantitative

data (OSCEs, institutional assessment, and teaching observations included in supplementary file 1) were collected and managed using the REDCap electronic data capture tools (21, 22).

Objective Structured Clinical Examination (OSCE)

A total of 72 midwifery educators, 22 preceptors, and 72 final-year midwifery students completed the same OSCEs on three core areas of midwifery training: neonatal resuscitation basic life support, maternal resuscitation in postpartum haemorrhage, and labour care guidance, using pre-designed OSCE checklists adapted from global assessment tools. The duration for each OSCE was set at 5 minutes, 10 minutes and 15 minutes respectively. Each skill was scored out of 20, and the pass mark was set at 14 (70%).

Institutional assessment

A structured institutional assessment questionnaire was administered via REDCap by research team members to 19 midwifery heads of department to capture data on staffing, student admissions, teaching and learning infrastructure (classrooms, skills lab, and equipment), student support for clinical experience, and clinical supervision.

Teaching observations

Structured direct observations of teaching sessions (theoretical and practical) for midwifery educators were conducted. Before the teaching session, the observer explained the objectives of the observation as a quality improvement opportunity and obtained informed verbal and written consent from the educator. A pre-designed online structured direct observation checklist for teaching methodologies was utilised to assess educators' teaching skills in a class session with final-year midwifery students. The trained observers were educators from non-study institutions with extensive experience in midwifery education in Nigeria and understood the phenomenon (content) being taught to students. The observed teaching sessions ranged between 45 minutes and 1 hour. The checklist included questions focusing on preparation and teaching style, use of visual aids, and student involvement in teaching and learning. It was adapted from the previous standardised 'Centre for Maternal and Newborn Health Standardised review form used for six observations of lessons' checklist and the 'Teacher Skills Checklist' tools used in other settings (23, 24). The observer completed the online structured observation checklist during the teaching session and made notes for debriefing during the supportive feedback session with the educator at a separate private location in the absence of the students.

In-depth interviews and focus group discussions

Twelve in-depth interviews (IDIs) were held with midwifery educators and preceptors, and three focus group discussions (FGDs) were conducted in February and March 2025 (supplementary file 2). IDIs

lasted for a minimum of 30 minutes, and FGDs for 60 minutes. A semi-structured topic guide was used to guide discussions in the IDIs and FGDs, which were considered adequate after reaching saturation. All interviews were conducted virtually on Zoom and audio-recorded with permission from the participants and transcribed verbatim into English. IDIs and FGDs helped elicit information on barriers and facilitators to effective midwifery education and training in Nigeria.

Quantitative analysis

Descriptive analyses were performed using Stata version 17.0. Data obtained from all 19 institutions were summarised, including observations of teaching sessions (37 sessions) and OSCE scores for all midwifery educators (82), preceptors (22), and students (72) who were trained and assessed. The mean OSCE score was also derived for each participant who completed all three OSCEs. Means and standard deviations were derived to summarise data measured on a continuous scale; counts and percentages were obtained for categorical data. All statistics were unweighted.

Fisher's exact test was used to test for statistically significant differences between regions for passing each OSCE. Mixed-effects logistic regression models, with facility as a random effect, were used to examine separately whether there was evidence of an association between passing each OSCE and the following terms assessed at the institution: student: educator ratio (covariate), whether the skills lab had been upgraded, whether it had a full set of equipment, whether students could access it independently, whether skills supervision was weekly or fortnightly, and whether the institution had a relevant supervision checklist. The following factors derived from aggregating the teaching observations at the institution were also considered: written teaching plan for lesson, learning outcomes stated, appropriate learning materials provided, use of examples to enhance student understanding, asked questions to assess student knowledge on the lecture topic, encourages students to ask questions and involved the entire class in answering questions. A backward selection procedure was used to eliminate terms from multivariable model with $p < 0.05$ used as the criterion for retention in the model. Region was not included in these models because some regions had no participants who passed.

Qualitative analysis

The preparation for qualitative data analysis involved a rigorous process of transcription, coding, and theme development. Qualitative data were analysed in the NVIVO software using the inductive thematic analysis by Braun and Clarke (15); a) data familiarisation through transcription and reading transcripts; b) generating initial codes; c) searching for themes; d) reviewing themes; e) defining and naming themes; and g) writing findings. Pseudonyms were used to maintain confidentiality in the study. Trustworthiness was achieved by using a criterion for thematic analysis; returning to the data repeatedly to check for accuracy in interpretation; and discussions with the study team with expertise in midwifery education, Nigerian health systems, and mixed methods research (25).

Results

Preparedness of midwifery institutions to provide midwifery education

Midwifery programmes

Almost all midwifery institutions (18 out of 19) in the assessment offered a 3-year basic midwifery program, while 11 institutions offered a 2-year community midwifery program (Fig. 1).

Midwifery staff and students' demographic characteristics

The total number of midwifery educators in the 19 institutions included in the baseline assessment was 175, with the majority being female (n = 169, 96.6%). The academic qualifications of the staff involved in teaching midwifery modules in the 19 institutions were noticeably low. Among the 175 midwifery educators, 38 (22%) had a master's degree in nursing/midwifery and 150 (86%) had a degree in nursing/midwifery. Almost two-thirds (n = 112, 64%) of midwifery educators reported having additional teaching qualifications (Table 1).

Table 1
Summary of information on staff and students, by institution type

	State (n = 14)		**Federal Govt (n = 5)**		**Total (n = 19**	
	Mean	**(SD)**	**Mean**	**(SD)**	**Mean**	**(SD)**
Number of final year midwifery students	85.7	(51.6)	58.6	(48.2)	78.6	(50.9)
Students admitted: 2023/24	140.3	(73.1)	80.8	(47.9)	124.6	(71.4)
Number of staff involved in teaching midwifery modules	9.6	(4.0)	13.0	(7.4)	10.5	(5.1)
Number of midwifery educators with						
Additional teaching qualifications	5.0	(4.8)	8.4	(8.0)	5.9	(5.8)
Nursing / midwifery degree	7.5	(4.0)	9.2	(7.3)	7.9	(4.9)
Master's degree in nursing / midwifery	1.9	(1.5)	2.2	(2.6)	2.0	(1.8)
Students per midwifery educator	61.6	(70.5)	24.2	(15.6)	51.7	(62.7)

The mean (SD) number of students per midwifery educator was 51.7 (± 62.7). There were variations in the mean number of students per midwifery educator based on institutional type. For instance, state-funded institutions had a higher mean number of students per midwifery educator, 61.6 (± 70.5), than federal government institutions, 24.2 (± 15.6).

Qualitative findings revealed overcrowding in institutions and limited infrastructure to cope with the large number of students in some institutions, as illustrated in the extracts below. It is problematic when students are assigned to clinical placements before they are adequately prepared, solely to free institutional space for the instruction of other cohorts.

"… the student will have to be giving you way to pass when you enter the class because some classes are small, so this is also an issue about the environment [classroom space] and sometimes, they cannot accommodate 3 sets [of students] at a time in the institution. They must take some to clinical areas whether it is time for them to go to the clinical area or not they must go to clinical area because there is no place to put them for the classes…" **Educator 5**

"…the environment is not conducive; you find out in a class you have more than 100 students and it is only one lecturer responsible for them. Having effective teaching in that class and for everybody to understand is very difficult. Sometimes you are teaching, and some students are watching films while in the class. The capacity of the class [physical space] is small and seats [classroom furniture] are inadequate. Students are managing by sitting on the floor just because they are many; the class is small, and all the other classrooms are occupied with different courses…" **Educator 8**

Overcrowded classrooms, limited physical space, and inadequate facilities create an unconducive learning environment that restricts educator–student interactions and reduces learning effectiveness. The presence of disruptive behaviours, such as students engaging in unrelated activities during lectures, further reflects the low engagement and strain caused by poor conditions. These constraints collectively compromise educational quality and may adversely affect the competence and professional readiness of midwifery graduates.

Teaching observations

A total of 37 teaching sessions were observed in 19 institutions. Less than half had written lesson plans (n = 16, 43%), and appropriate learning materials were not provided for 17 sessions (46%)–Table 2. This represents missed opportunities that may be addressed through continuous professional development (CPD) in teaching pedagogy. The taught content was factually correct and evidence-based in both state-funded and federal government institutions (Table 2). Qualitative findings reiterated that institutions utilised content approved by the NMCN as highlighted in these extracts,

"…each of our teaching methods and content is guided by the principle of the format of the nursing council. We will not act out of place; we will only act in line with the guided principle". **Educator 7**

*"…we teach with the guide of current curriculum [approved by the Nursing and Midwifery Council of Nigeria], that is what we use to teach. Everything will be taught from that curriculum; that is where we develop our lecture notes and the content. In the classroom, we spend a minimum of two hours per contact. Then, in the demonstration room, we also develop our practical guideline, that's the checklist from the curriculum. And that demonstration room, we spend like a minimum of four hours to demonstrate in the demonstration room…"***Educator 2**

Once the midwifery curriculum has been updated at the national level and the information cascaded to all midwifery institutions in the country, institutions are compliant with the teaching curriculum content acceptable by regulatory authorities, presenting a unique opportunity to implement innovative teaching methods and evidence-based content.

Table 2
Summary of teaching observations by institution type

	State		Federal Govt		Total	
	N	(23)	N	(23)	N	(23)
Number of sessions observed	26		11		37	
Lesson preparation:						
Written teaching plan for lesson	12	(46)	4	(36)	16	(43)
Purpose of the class session (learning outcomes) stated	22	(85)	8	(73)	30	(81)
Content arranged and discussed in a systematic and organized fashion	24	(92)	11	(100)	35	(95)
Appropriate learning materials were provided to students	16	(62)	4	(36)	20	(54)
Lesson content:						
Summarized the most important ideas in different sections	19	(73)	9	(82)	28	(76)
Content was factually correct and evidence-based	26	(100)	11	(100)	37	(100)
Examples used to enhance student understanding	22	(85)	10	(91)	32	(86)
Clinical supervision:						
Number of institutions supervising clinically	13		5		18	
Frequency of clinical supervision of students on placement						
Every 1 week	10	(77)	4	(80)	14	(78)
Every 2 weeks	3	(23)	1	(23)	4	(22)
Facility has a relevant clinical supervision checklist with specific tasks	8	(62)	5	(100)	13	(72)

Supervision of students during clinical placement occurs every week at 78% of institutions providing clinical supervision. The completion of clinical supervision checklists was low in state-funded institutions (62%) compared to federal government-funded institutions (100%) at the end of the 8-week clinical placement.

Qualitative findings indicated that student supervision was conducted in both health facilities and community posting sites, with some institutions implementing measures to ensure compliance with established requirements, as illustrated in the following extracts.

"Some lecturers are being assigned to go and supervise student, not only in the health facility but also during their community posting when they are being posted outside the facility". **Educator 6**

"We do a post follow up to ensure that they are there [clinical area] and we also give a form [clinical supervision checklist] to assess them at the end of every posting. Aside that we also do a routine periodic check to ensure that they are all compliant and they have not absconded, though not regularly" **Educator 7**

Competency levels for educators, preceptors and final year midwifery students in selected midwifery skills

Three clinical skills (objective structured clinical examinations) were assessed: basic life support (neonatal resuscitation), maternal resuscitation in postpartum haemorrhage (PPH), and labour care guide. Of the 82 midwifery educators, 22 preceptors, and 72 final-year midwifery students, 10 (6%) passed the basic life support OSCE, 18 (10%) passed the PPH OSCE, and 2 (1%) passed the labour care guide OSCE. No participants passed all three OSCEs (Table 3).

For the PPH OSCE, there was a statistically significant association between region and passing (Table 4: $p < 0.001$; 55% of participants in the South-East region, 30% in the South-South region, and 8% in the North-East region passed, whereas none of the participants in the North Central and North-West regions passed the PPH OSCE).

Mixed effects models identified having an upgraded skills lab and having a full set of equipment ($p < 0.001$ and $p = 0.03$, respectively) as the only terms associated with passing the PPH OSCE. When both terms were included together in the model, only the upgrading of the labs was statistically significant, with an OR (95% CI) of 44.4 (9.1–217) for passing. Passing the Basic Life Support OSCE was not significantly associated with any of the terms considered.

Table 3

Summary[a] of OSCE skills, by participant type

Number of participants:	**Midwifery Educator**	**Preceptor[b]**	**Student**	**Total**
	82	**22**	**72**	**176**
PPH OSCE: N	82	19	72	173
Mean (SD)	8.9 (3.6)	10.7 (4.1)	8.0[a] (3.9)	8.7 (3.8)
Passed OSCE: N (23)	9 (11)	5 (26)	4 (6)	18 (10)
Labour care guide OSCE: N	82	19	72	173
Mean (SD)	5.3 (3.1)	6.2 (3.1)	4.8 (2.8)	5.2 (3.0)
Passed OSCE N (23)	2 (23)	0 (23)	0 (23)	2 (1)
Neonatal resuscitation OSCE: N	82	21	72	175
Mean (SD)	8.8 (3.0)	8.8 (3.1)	8.7 (3.1)	8.8 (3.0)
Passed OSCE N (23)	6 (7)	1 (5)	3 (4)	10 (6)
Mean OSCE score: N	82	18	72	172
Mean (SD)	7.7 (2.4)	8.6 (2.4)	7.1 (2.2)	7.6 (2.4)

b 4 preceptors did not complete all 3 OSCEs: 2 of them only completed Basic life support; one completed PPH and Basic life support and one completed Labour care guide

Table 4

Crosstabulation of OSCE outcome by region for Basic Life Support and PPH OSCEs

Region	**Basic Life Support**				**PPH**			
	fail		**pass**		**fail**		**pass**	
	N	(23)	N	(23)	N	(23)	N	(23)
NC	37	(97)	1	(3)	38	(100)	0	(23)
NE	48	(98)	1	(23)	45	(92)	4	(8)
NW	50	(86)	8	(14)	56	(100)	0	(23)
SE	20	(100)	0	(23)	9	(45)	11	(55)
SS	10	(100)	0	(23)	7	(70)	3	(30)
p-value[a]		0.07				< 0.001		

a Fisher's exact test of heterogeneity among regions

The qualitative findings alluded to educators' lack of competence in teaching new topics introduced in the curriculum and lack of training and/or opportunities for continuous professional development as the reasons underpinning the lack of competence in the selected midwifery core skills.

"There are a few things that have been added to the curriculum. Some of the teachers [educators], when they were in the school [midwifery training], those topics were not there and when the topics are now introduced into the curriculum, the teachers don't know where to start to teach it…there is no seminar or workshop or training about the new topic. They will just give the topic in the institution to be taught to students. it will be difficult for the teacher to give the information that the student needs about that topic" **Educator 5**

Educators reported that new topics were added to the curriculum to align pre-service education with advances in midwifery/international standards. However, faculty are not competent in teaching the new topics and or struggle to deliver the essential information necessary for students learning needs due to lack of training. This presents a significant challenge, as it may compromise students' competence in newly introduced topics and, consequently, impact the overall quality of midwives entering the workforce.

Skills laboratory and training corner for practical demonstrations

All midwifery institutions included had a skills laboratory for practical demonstration. Only one institution reported having a dedicated staff member responsible for the maintenance of training equipment, and only two institutions had a full set of functioning equipment. Only two out of 19 midwifery institutions reported having a training corner or room at an affiliated health facility, although they did not have a full set of equipment (Table 5). The concept of training corners at affiliated health facilities is relatively new to the Nigerian context, and there is no infrastructure to optimise the use of training in midwives.

Table 5
Summary of skills lab and training corners, by institution type

	State		Federal Govt		Total	
	N	(23)	N	(23)	N	(23)
Number of institutions:	14		5		19	
Skills labs:						
Institution has dedicated staff trained and responsible for equipment maintenance	0	(23)	1	(23)	1	(5)
Educators are familiar with, and know how to use equipment	12	(86)	5	(100)	17	(89)
Skills lab or room available for conducting practical training sessions	14	(100)	5	(100)	19	(100)
Students can access it at other times on their own for skills practice	9	(64)	4	(80)	13	(68)
Has a full set of equipment	1	(7)	1	(23)	2	(11)
Training corner at an affiliated training hospital						
Has a training corner or room for practical training sessions	1	(7)	1	(23)	2	(11)
Training corner has a full set of equipment	0	(23)	0	(23)	0	(23)

Qualitative findings and physical assessments of the skills lab provided a better understanding of the infrastructural needs, for instance, old/dilapidated teaching equipment, insufficient teaching aids, and limited staff.

"Our labs are becoming obsolete [outdated], the teaching aids are old; they need to be changed. We still have the old model, the old care plan, everything is just not current…we don't have enough materials, equipment, and models in the skills lab, and we don't have televisions [screen] to show our students videos of some procedures. We also lack manpower because we are only eight in the department, we need more staff…" **Educator 6**

"There is no trained equipment maintenance staff, also no routine maintenance mechanism for the equipment available. Midwife educators need training on modern equipment utilisation".

Observation checklist

The findings highlight the need to upgrade skills labs in midwifery institutions with up-to-date equipment, teaching aids, and staff training to maintain equipment. Additionally, there is a need to increase students' access to skills labs to engage in self-study and master essential skills for midwifery practice.

Discussion

This mixed-methods study provides a comprehensive assessment of the preparedness of midwifery training institutions in Nigeria to deliver competency-based midwifery education. By integrating objective competency assessments, institutional audits, teaching observations, and qualitative perspectives from educators and students, the study provides new empirical insights into how structural and faculty-related constraints shape the implementation of competency-based education in resource-constrained settings.

Interpretation of key findings

The study revealed extremely low competency across all assessed groups: educators, preceptors, and final-year students, in core midwifery skills including neonatal resuscitation, postpartum haemorrhage management, and labour care monitoring. Fewer than one in ten participants passed individual OSCE assessments and none demonstrated competency across all three domains. These findings raise concerns about the effectiveness of current pre-service training in preparing graduates to deliver safe maternity care. Importantly, competency gaps were observed not only among students but also among educators and clinical preceptors, suggesting systemic weaknesses within the education system rather than isolated deficiencies among trainees.

Previous studies in LMICs have documented similar challenges in translating competency-based curricula into improved clinical performance. Gavine et al. highlighted significant gaps in the evidence base for effective pre-service training interventions for maternal and newborn care providers, particularly in contexts where institutional capacity is limited (4). Similarly, Warren et al.'s scoping review of midwifery education in sub-Saharan Africa reported widespread challenges including insufficient clinical exposure, limited faculty capacity, and weak integration of theory and practice (7). The findings of this study extend this literature by providing objective competency data alongside institutional assessments, illustrating how weaknesses in faculty preparation and learning environments may directly influence competency outcomes.

Institutional capacity and learning environments

Institutional infrastructure emerged as a key determinant of education quality. Although all institutions reported having skills laboratories, only a small proportion had fully equipped facilities or trained personnel responsible for maintaining simulation equipment. Quantitative analysis further demonstrated that upgraded skills laboratories were strongly associated with improved OSCE performance in postpartum haemorrhage management. These findings reinforce growing evidence that simulation-based training environments are essential for competency acquisition in midwifery education.

Previous research has similarly highlighted the importance of simulation and structured clinical learning environments for strengthening practical skills in maternal health training. Podder et al. (2025) identified inadequate clinical infrastructure and limited simulation resources as major barriers to effective midwifery education in LMICs. Similarly, previous reviews of midwifery education in sub-Saharan Africa

report that limited clinical learning environments and inadequate training infrastructure constrain students' ability to translate theoretical knowledge into clinical competence (4, 7). The present study adds to this body of evidence by demonstrating a measurable association between improved training infrastructure and clinical competency outcomes, highlighting the potential impact of targeted investments in simulation resources.

The study also identified high student-to-educator ratios and overcrowded learning environments as major barriers to effective teaching. With an average student-to-educator ratio exceeding international recommendations, opportunities for interactive teaching, mentorship, and supervised clinical learning are limited. These structural constraints reinforce reliance on didactic teaching approaches and reduce opportunities for experiential learning, which is fundamental to competency-based education.

Faculty competence and professional development

Another key finding relates to gaps in educator capacity to deliver updated curricula. Qualitative findings indicated that educators often lacked training in newly introduced topics within the national curriculum and had limited access to continuous professional development opportunities. These findings are consistent with previous research emphasising the importance of faculty development in strengthening health professional education systems. West et al. (2016), for example, identified educator training as a critical component of improving midwifery education in LMICs, while Shikuku et al. (2024) demonstrated the potential effectiveness of continuous professional development programmes for midwifery educators (14, 23)

However, this study suggests that curriculum reform alone is unlikely to improve education quality without parallel investments in faculty development. Introducing competency-based curricula without adequately preparing educators to teach the content may unintentionally widen the gap between policy intentions and educational practice.

Implications for strengthening midwifery education

Taken together, the findings indicate that improving midwifery education requires a systems approach that addresses educator competence, institutional infrastructure, and teaching practices simultaneously. While Nigeria has introduced policy initiatives such as the Strategic Direction for Nursing and Midwifery and other national workforce strengthening efforts, translating these policies into effective training outcomes will require sustained investment in educator training, simulation infrastructure, and regulatory oversight of training institutions.

Strengthening midwifery education is a critical component of improving maternal and newborn health outcomes. Evidence from global analyses suggests that high-quality midwifery care has the potential to avert a substantial proportion of maternal and neonatal deaths if delivered by competent providers within functioning health systems. Ensuring that midwifery graduates acquire essential clinical competencies is therefore central to achieving national and global maternal health targets.

Policy implications for national midwifery initiatives

These findings have direct implications for ongoing national initiatives aimed at strengthening the midwifery workforce in Nigeria, including the Midwifery Accelerator Programme and the Maternal and Newborn Mortality Reduction Innovation and Initiatives (MAMII) strategy. Both initiatives emphasise improving the quality and availability of skilled maternity care providers as a key mechanism for reducing maternal and neonatal mortality. The results of this study suggest that achieving these goals will require greater attention to the foundational capacity of pre-service education institutions. In particular, investments in educator competency development, simulation-based training infrastructure, and strengthened clinical training environments are likely to be critical for translating national policy commitments into improved workforce readiness. Embedding these investments within programmes such as MAMII could help ensure that competency-based midwifery education reforms are implemented effectively at institutional level, thereby strengthening the pipeline of competent midwives entering the health system.

Strengths and limitations

This study has several strengths. First, the mixed-methods design enabled triangulation of quantitative and qualitative data, providing a comprehensive understanding of institutional preparedness for competency-based midwifery education. Second, the use of objective structured clinical examinations provided an independent and standardised assessment of clinical competency across educators, preceptors, and students. Third, the inclusion of institutional audits and teaching observations allowed the study to examine the broader educational environment influencing competency outcomes.

However, several limitations should be considered. The study was conducted in a purposively selected sample of 19 institutions participating in a national programme, which may limit the generalisability of findings to all midwifery training institutions in Nigeria. The relatively small sample size also limited statistical power in some analyses exploring associations between institutional characteristics and competency outcomes. In addition, the cross-sectional nature of the assessment means that causal relationships between institutional capacity and competency outcomes cannot be definitively established. Nevertheless, the convergence of findings across multiple data sources strengthens the credibility of the results and provides important insights into systemic challenges affecting midwifery education.

Conclusion

This study highlights substantial gaps in the capacity of midwifery training institutions in Nigeria to deliver effective competency-based education. Low levels of clinical competency among educators, preceptors, and final-year students reflect broader systemic challenges including insufficient faculty development, inadequate simulation infrastructure, and overcrowded learning environments. Addressing these barriers will require coordinated investments in educator training, institutional infrastructure, and regulatory oversight to ensure that competency-based curricula can be implemented effectively.

Strengthening pre-service midwifery education is essential for building a competent maternity care workforce and represents a critical pathway towards improving maternal and newborn health outcomes in Nigeria and other resource-constrained settings.

Abbreviations

CBE
Competency Based Education
ICM
International Confederation of Midwives
NMCN
Nursing and Midwifery Council of Nigeria, NHREC:National Health Ethics Committee of Nigeria, FGD:focus group discussion, IDI:in-depth interviews, OSCEs:objective structured clinical examinations, LSTM:Liverpool School of Tropical Medicine
WHO
World Health Organization.

Declarations

Ethical approval and consent to participate

Ethical approval for the study was obtained from Liverpool School of Tropical Medicine United Kingdom, Research Ethics Committee (Approval reference: 24–074) and National Health Ethics Committee of Nigeria (NHREC) (Approval reference: NHREC/01/01/2007-10/02/2025). A written informed consent was obtained from each participant prior to participation in the study. The study was conducted in accordance with the principles of the Declaration of Helsinki for medical research involving human participants.

Consent for publication

Not applicable

Competing interests

The authors have no competing interests to declare.

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Author Contribution

LAN, AC, MC, DF, WSA, SD, AN, AAC conceived and designed the study. AMH, MH, BAB, AN, YT, AA, EBO, SD, FD, LMA, LAN provided oversight to data collection and management. MC, LAN extracted and prepared data for analysis. LAN provided expertise on qualitative research and analysed qualitative data. MC, SW, SD, AAC provided expertise on quantitative data and analysis. LAN, LMA, EBO drafted the manuscript. All authors read and approved the final manuscript before submission. AAC: Funding acquisition and overall academic responsibility. Joint first authorship: LAN and LMA.

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Data Availability

Qualitative data is provided within the manuscript. Quantitative data is available from the corresponding author upon reasonable request.

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Figures

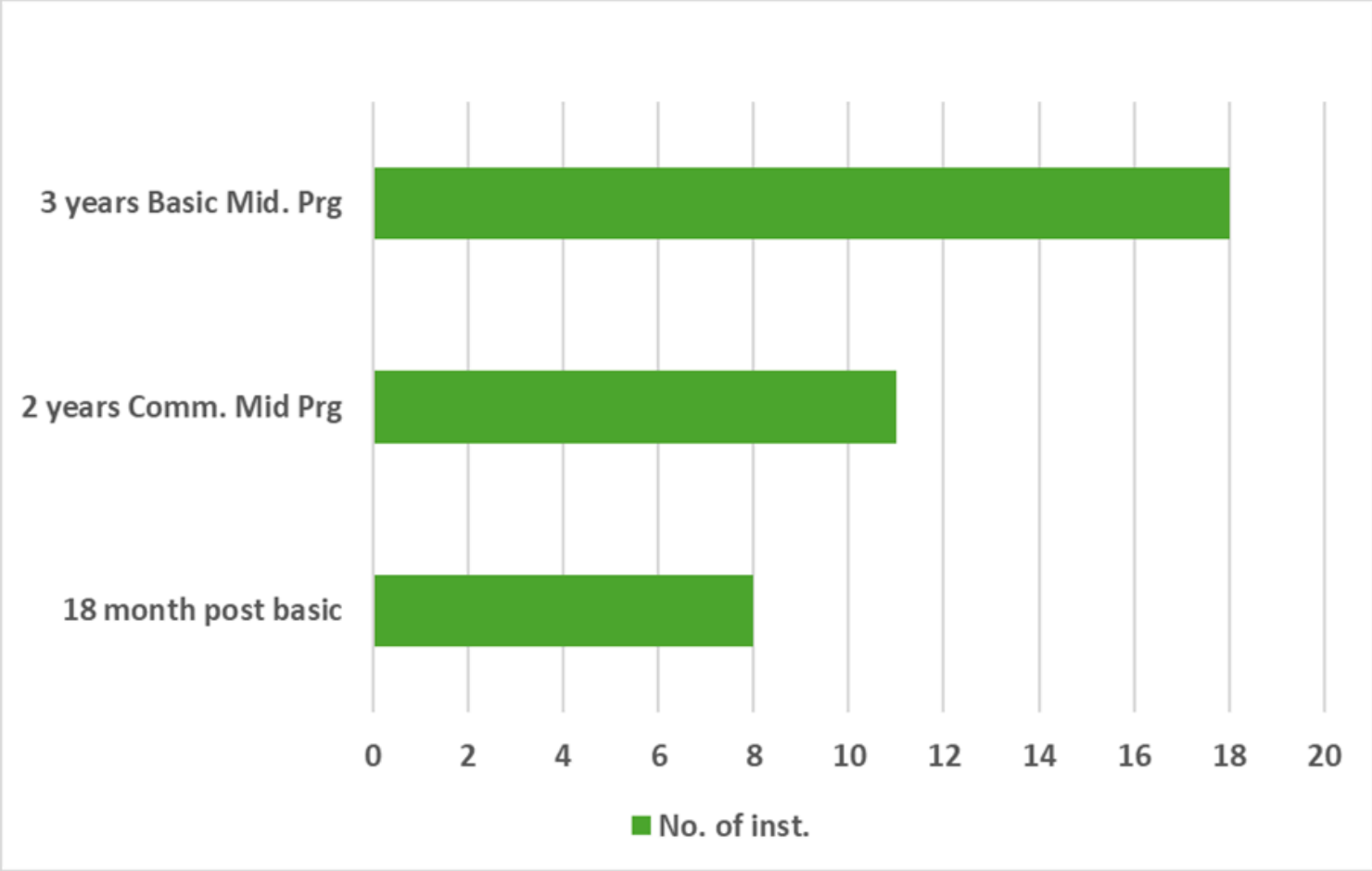

Figure 1

Summary of midwifery programmes

Supplementary Files

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- floatimage1.jpeg