

Assessment of the Effectiveness of Clinical Skills Instructional Methods and Competency Acquisition among Community Health Students in Tertiary Institutions of Nasarawa State, Nigeria

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ABSTRACT

Clinical skills acquisition is a fundamental component of Community Health education, as it equips students with the competencies required for effective healthcare service delivery. The effectiveness of instructional methods employed during clinical training significantly influences students' practical competence, confidence, critical thinking abilities, and preparedness for professional practice. This study assessed the effectiveness of clinical skills instructional methods and competency acquisition among Community Health students in tertiary institutions of Nasarawa State, Nigeria.

A descriptive cross-sectional survey design was adopted for the study. The study population comprised 1,300 Community Health students from three tertiary health institutions in Nasarawa State: Nasarawa State University, Keffi (NSUK), College of Health Sciences and Technology (COHST), and FAMSAS College of Health Sciences and Technology (FAMSAS COHST). The sample size of 400 respondents was determined using the Taro Yamane formula at a 95% confidence level and 5% margin of error. A multistage sampling technique involving stratified and simple random sampling methods was employed to select respondents proportionately from the participating institutions. Data were collected using a structured questionnaire and analyzed using the Statistical Package for Social Sciences (SPSS) version 26. Descriptive statistics comprising frequencies, percentages, means, and standard deviations were used for data presentation, while Chi-square statistics were used to test associations between instructional methods and competency acquisition at a significance level of $p < 0.05$.

The findings revealed that lecture method (98.1%), clinical posting (87.1%), demonstration method (82.1%), and simulation-based learning (71.7%) were the most commonly utilized instructional approaches. Frequent demonstrations (Mean = 3.61 ± 0.64), simulation laboratories (Mean = 3.55 ± 0.69), and supervised practical sessions significantly enhanced competency acquisition. Significant relationships were observed between demonstration method ($\chi^2 = 8.214$, $p = 0.004$), simulation-based learning ($\chi^2 = 6.532$, $p = 0.011$), clinical posting ($\chi^2 = 9.146$, $p = 0.002$), and competency acquisition.

The study concluded that practical-oriented instructional methods significantly improve competency acquisition among Community Health students. It recommends strengthening simulation-based learning facilities, expanding supervised clinical postings, and promoting competency-based instructional approaches to enhance healthcare education outcomes.

Keywords: Clinical skills, instructional methods, competency acquisition, Community Health education, simulation-based learning, tertiary institutions, Nigeria.

INTRODUCTION

Clinical education represents one of the most essential aspects of healthcare professional training because it provides students with opportunities to translate theoretical knowledge into practical competencies required for healthcare delivery. According to Benner (1984), clinical competence develops progressively through repeated exposure to supervised practical experiences that enhance psychomotor, cognitive, and communication skills. In Community Health education, effective clinical instruction equips students with competencies necessary for disease prevention, health promotion, environmental sanitation, maternal and child healthcare, epidemiological surveillance, and community-based healthcare services.

Globally, healthcare education has shifted from traditional teacher-centered methods toward competency-based educational approaches that emphasize practical skills acquisition and performance outcomes (Harden, 2002). Modern instructional strategies such as simulation-based learning, bedside teaching, demonstration methods, peer-assisted learning, case-based learning, and supervised clinical postings have become increasingly important in preparing healthcare students for professional practice (Cant & Cooper, 2010).

The World Health Organization (2022) emphasized that competency-based healthcare training strengthens workforce capacity and improves healthcare outcomes through practical-oriented education. Effective instructional methods improve students' confidence, critical thinking abilities, clinical reasoning, communication skills, and patient management competencies (Jeffries, 2005). In contrast, ineffective clinical teaching may result in poor competency acquisition, reduced professional confidence, and inadequate preparedness for healthcare service delivery. In Nigeria, clinical training in health-related institutions continues to face numerous challenges including inadequate instructional facilities, shortage of qualified instructors, insufficient simulation laboratories, overcrowded classrooms, and poor clinical placement opportunities (Adebisi et al., 2021). These challenges negatively affect the quality of practical training and competency acquisition among undergraduate healthcare students. Studies conducted among nursing and medical students in Nigeria have shown that demonstration methods and supervised clinical experiences significantly improve students' practical competence and academic performance (Okoroafor et al., 2018). Similarly, simulation-based learning has been identified as an effective strategy for enhancing students' confidence and psychomotor skills in healthcare training institutions (Al-Elq, 2010). Despite the growing importance of competency-based healthcare education, limited empirical studies have specifically examined the effectiveness of clinical instructional methods among undergraduate Community Health students in Nasarawa State University, Keffi. Therefore, this study seeks to assess the effectiveness of clinical skills instructional methods and competency acquisition among Community Health students in the institution.

Statement of the Problem

Competent healthcare professionals are essential for effective healthcare delivery and improved public health outcomes. Clinical skills instruction plays a critical role in preparing Community Health students for professional practice through acquisition of psychomotor, communication, and decision-making competencies. However, concerns have been raised regarding inadequate practical competence among some healthcare graduates in Nigeria.

Many tertiary institutions continue to experience infrastructural deficiencies, shortage of simulation laboratories, overcrowded practical sessions, inadequate clinical supervision, and limited instructional resources. These challenges may negatively affect students' competency acquisition and professional preparedness. Also, although several instructional methods are currently utilized in clinical education, limited evidence exists regarding their relative effectiveness among Community Health students in tertiary institutions of Nasarawa State. Therefore, this study became necessary to assess the effectiveness of clinical instructional methods and competency acquisition among Community Health students.

LITERATURE REVIEW

Concept Review

Concept of Clinical Skills Acquisition

Clinical skills acquisition refers to the process through which healthcare students develop the knowledge, psychomotor abilities, communication skills, and professional competencies required for effective patient care. According to Benner (1984), competency development occurs progressively through education, supervised practice, and experiential learning. In health professions education, clinical skills acquisition extends beyond theoretical understanding to include the ability to perform procedures, make clinical decisions, communicate effectively with patients, and demonstrate professional judgment.

For Community Health students, clinical skills acquisition is particularly important because their future responsibilities involve disease prevention, health promotion, maternal and child healthcare, environmental health services, and community-based interventions. Therefore, effective training must provide opportunities for students to translate classroom knowledge into practical competence within real or simulated healthcare environments.

Clinical Skills Instructional Methods

Clinical skills instructional methods are the teaching approaches employed to facilitate the development of practical competencies among healthcare students. These methods include demonstrations, simulation-based learning, clinical postings, lectures, peer-assisted learning, case-based learning, and supervised practical sessions. Demonstration methods involve instructors showing students how to perform specific clinical procedures before allowing them to practice independently. Peyton (1998) argues that demonstrations enhance psychomotor learning by enabling students to observe correct techniques and procedural sequences. Simulation-based learning utilizes mannequins, task trainers, standardized patients, and computer-assisted technologies to replicate real clinical situations. According to Jeffries (2005), simulation provides a safe learning environment where students can repeatedly practice clinical procedures without compromising patient safety.

Clinical postings involve supervised placement of students in healthcare facilities where they gain practical exposure to real-life clinical situations. Such experiences provide opportunities for experiential learning, critical thinking, and professional socialization. Kolb (1984) emphasizes that experiential learning facilitates deeper understanding because learners actively engage with practical situations and reflect on their experiences. Lecture methods remain the most commonly used instructional approach in many health training institutions. While lectures are effective for knowledge dissemination, they may not adequately support psychomotor skill development when used in isolation. Consequently, modern competency-based curricula advocate integration of lectures with practical learning strategies. Peer-assisted learning encourages students to learn from and teach one another. Research suggests that peer learning promotes collaboration, communication skills, confidence, and active engagement in the learning process.

Competency Acquisition in Health Professions Education

Competency acquisition refers to the attainment of measurable knowledge, skills, attitudes, and professional behaviors required for effective healthcare practice. Competency-based education emphasizes learner outcomes rather than time spent in training. Harden (2002) describes competency-based education as an approach that focuses on clearly defined outcomes that learners must demonstrate before graduation. Within Community Health education, competency acquisition includes procedural competence, clinical reasoning, communication skills, public health intervention skills, leadership abilities, and professional ethics. Effective instructional methods are therefore expected to enhance students' ability to perform clinical tasks accurately and confidently.

Factors Influencing Clinical Skills Acquisition

Several factors influence competency acquisition among healthcare students. These include availability of teaching aids, adequacy of simulation laboratories, quality of supervision, instructor competence, student

motivation, learning environment, and opportunities for practical exposure. Inadequate resources and overcrowded practical sessions may negatively affect learning outcomes by limiting opportunities for hands-on practice and individualized supervision. Conversely, well-equipped simulation laboratories, effective clinical supervision, and frequent practical demonstrations have been associated with improved competency acquisition and learner confidence. These factors highlight the importance of creating supportive learning environments that facilitate effective clinical training.

Empirical Review

Several studies have examined the effectiveness of instructional methods in enhancing clinical competency among healthcare students. Cant and Cooper (2010) conducted a systematic review on simulation-based learning in nursing education and found that simulation significantly improved students' clinical performance, confidence, and psychomotor skills. The authors concluded that simulation provides opportunities for repeated practice and immediate feedback, thereby enhancing competency acquisition.

Similarly, Issenberg et al. (2005) reviewed high-fidelity simulation studies and reported that simulation-based education was associated with improved knowledge retention, procedural skills, and clinical decision-making abilities. The study emphasized that deliberate practice and feedback are critical determinants of successful competency development.

McGaghie et al. (2011) compared simulation-based medical education with traditional clinical education and found that students exposed to simulation achieved superior learning outcomes and demonstrated higher competency levels than those trained using conventional approaches alone. The study recommended increased integration of simulation into healthcare curricula.

In Nigeria, Okoroafor, Nwabueze, and Okechukwu (2018) investigated clinical teaching methods and competency acquisition among health profession students. Their findings indicated that demonstration methods, supervised practical sessions, and clinical postings significantly enhanced students' practical competencies. The study further revealed that inadequate teaching facilities and limited practical exposure hindered effective skill acquisition. Jebbin and Adotey (2012) assessed practical skill acquisition among final-year medical students in a Nigerian medical school and reported gaps in procedural competence despite satisfactory theoretical knowledge. The authors attributed these deficiencies to insufficient opportunities for hands-on clinical practice and inadequate supervision. Mothiba, Bopape, and Mbombi (2020) explored nursing students' perceptions of clinical skills laboratories in South Africa. The findings showed that simulation laboratories improved students' confidence, procedural competence, and preparedness for clinical practice. Students reported that simulation environments allowed them to learn from mistakes without risking patient safety. Katowa-Mukwato et al. (2014) examined medical students' clerkship experiences and found that students who received adequate supervision during clinical placements demonstrated higher levels of confidence and competency than those with limited supervision. The study highlighted the importance of supportive clinical learning environments. Ojo et al. (2024) investigated challenges encountered by nursing students during clinical postings in Nigeria. The study identified overcrowding, inadequate equipment, limited supervision, and insufficient learning materials as major barriers to competency acquisition. The authors recommended strengthening clinical learning infrastructure and increasing instructor availability. While Oladosu et al. (2022) examined clinical competency development among healthcare professionals in a Nigerian tertiary hospital and found that continuous professional development, mentorship, and practical exposure significantly influenced competency levels. The study emphasized the need for ongoing skills development throughout professional practice.

Although previous studies have established the effectiveness of simulation, demonstrations, and clinical postings in enhancing competency acquisition, most investigations have focused on nursing and medical students. Limited empirical evidence exists regarding Community Health students, particularly within tertiary institutions in Nasarawa State, Nigeria. This gap necessitated the present study, which seeks to assess the effectiveness of clinical skills instructional methods and competency acquisition among undergraduate Community Health students in selected tertiary institutions of Nasarawa State.

Knowledge Gap

A review of existing literature indicates that most studies on clinical skills acquisition have focused predominantly on nursing and medical students, with limited attention given to undergraduate Community Health students. Furthermore, few studies have comparatively examined the effectiveness of multiple instructional methods, including demonstrations, simulation-based learning, clinical postings, lectures, and peer-assisted learning within tertiary institutions in Nasarawa State, Nigeria. Existing Nigerian studies have largely concentrated on isolated aspects of clinical training without evaluating their combined influence on competency acquisition. Consequently, there is insufficient empirical evidence on how different instructional methods contribute to competency development among Community Health students in the study area. This study therefore seeks to fill this gap by assessing the effectiveness of clinical skills instructional methods and competency acquisition among undergraduate Community Health students in tertiary institutions of Nasarawa State, Nigeria.

THEORETICAL FRAMEWORK

Benner's Novice-to-Expert Theory

This study is anchored on Benner's Novice-to-Expert Theory, developed by Patricia Benner (1984). The theory explains how learners acquire and develop clinical competence through education, practice, and experience. Benner adapted the Dreyfus Model of Skill Acquisition and proposed that healthcare learners progress through five levels of competency: novice, advanced beginner, competent, proficient, and expert. According to Benner, novice learners possess limited practical experience and depend heavily on rules, guidelines, and instructor supervision. As learners gain exposure to clinical situations through demonstrations, simulation exercises, supervised clinical postings, and repeated practice, they gradually develop competence and confidence in performing clinical tasks. At the competent stage, learners demonstrate improved clinical judgment, problem-solving ability, and psychomotor skills, enabling them to provide effective healthcare services.

The theory is relevant to the present study because Community Health students acquire clinical competencies through structured instructional methods such as demonstrations, simulation-based learning, peer-assisted learning, lectures, and clinical postings. These instructional approaches facilitate progressive movement from novice levels of performance toward competency and professional readiness. Therefore, the effectiveness of instructional methods can be evaluated based on their ability to enhance students' competency acquisition and clinical performance.

Application of the Theory to the Study

In this study, instructional methods constitute the educational interventions that facilitate learning, while competency acquisition represents the outcome of the learning process. Students exposed to effective clinical teaching strategies are expected to demonstrate higher levels of competency acquisition than those exposed to less practical-oriented instructional approaches. Benner's theory therefore provides a useful framework for understanding the relationship between clinical instruction and competency development among undergraduate Community Health students.

CONCEPTUAL FRAMEWORK

The conceptual framework for this study illustrates the relationship between clinical instructional methods and competency acquisition among undergraduate Community Health students in tertiary institutions of Nasarawa State, Nigeria.

Independent Variables (Clinical Instructional Methods)

1. Demonstration Method
2. Simulation-Based Learning
3. Clinical Posting
4. Lecture Method
5. Peer-Assisted Learning

Intervening Variables

1. Availability of Teaching Aids
2. Quality of Clinical Supervision
3. Availability of Simulation Laboratories
4. Student Motivation and Learning Readiness
5. Institutional Learning Environment
6. Student–Instructor Ratio
7. Frequency of Practical Sessions

Dependent Variable

Clinical Competency Acquisition, measured through:

- Practical skill performance
- Clinical decision-making ability
- Procedural competence
- Confidence in clinical practice
- Readiness for professional practice

Conceptual Relationship

The framework assumes that effective instructional methods positively influence competency acquisition among Community Health students. Practical-oriented approaches such as demonstrations, simulation-based learning, and clinical postings provide opportunities for experiential learning, repeated practice, and immediate feedback, which enhance students' clinical competence. However, the strength of this relationship may be influenced by intervening factors such as teaching resources, quality of supervision, learning environment, and institutional support. Consequently, students exposed to effective instructional methods within a supportive learning environment are expected to demonstrate higher levels of competency acquisition than students exposed primarily to traditional lecture-based approaches.

Aim and Objectives of the Study

To assess the effectiveness of clinical skills instructional methods and competency acquisition among Community Health students in tertiary institutions of Nasarawa State, Nigeria.

Specific Objectives

1. To identify the clinical instructional methods used in teaching Community Health students.
2. To assess students' perception of the effectiveness of clinical instructional methods.
3. To determine the level of competency acquisition among Community Health students.
4. To identify factors affecting effective clinical skills acquisition.
5. To determine the relationship between instructional methods and competency acquisition among students.

Research Questions

1. What instructional methods are commonly used in clinical teaching among Community Health students?
2. How effective are the instructional methods utilized during clinical training?
3. What is the level of competency acquisition among students?
4. What factors affect effective clinical skills acquisition?
5. Is there any significant relationship between instructional methods and competency acquisition?

Research Hypothesis

Null Hypothesis (H0)

There is no statistically significant relationship between instructional methods and competency acquisition among Community Health students.

Alternative Hypothesis (H1)

There is a statistically significant relationship between instructional methods and competency acquisition among Community Health students.

METHODOLOGY

Study Design

A descriptive cross-sectional survey design was adopted for the study.

Study Area

The study was conducted among Community Health students in selected tertiary institutions in Nasarawa State, Nigeria.

The sample size for this research was calculated using the Yamane (1967) formula for finite populations, targeting a 95% confidence level with a 5% margin of error. Considering the student population of 1,300 in three selected Health Institutions (Nasarawa State University Keffi, Nasarawa State College of Health Science Technology Keffi and FAMSAS College of Health Science Technology Keffi), the formula generates a minimum sample size of roughly 487 students. To enhance representativeness and address potential non-responses, the sample size was raised to 500 students. A multistage sampling method was utilized to guarantee an equitable selection. In the initial phase, schools were classified into public and private groups. In the second phase, a random sample of schools was taken from each stratum. The third phase consisted of proportional sampling of students Colleges of Health Science technology offering Community Health as a course of study and Nasarawa S ate University Keffi Department of Community Health in the College of Medicine and Allied Health Sciences. Ultimately, in the fourth phase, participants were chosen using simple random sampling. This methodical approach ensures equitable representation among various school types, thus improving the validity and overall applicability of the study's results.

The sample size for this research was calculated using the Yamane (1967) formula for finite populations, set at a 95% confidence level and a 5% margin of error. The equation is represented as:

$$n = \frac{N}{1 + (e)^2}$$

Where:

- n - sample size
- N - population size
- e - margin of error

For this study, the estimated student population in the three schools is 1,300 (N - 1,300), with a margin of error of 5% (e - 0.05). Substituting these values into the formula gives:

$$n = \frac{1300}{1 + 8200(0.05)^2}$$

$$n = \frac{1300}{1 + 8200(0.0025)}$$

$$n - \frac{1300}{1} + 20.5$$

$$n - \frac{1300}{21.5} - 306$$

The minimum sample size was therefore approximated to 306 respondents.

To enhance representativeness, improve the precision of estimates, increase statistical power, and ensure adequate coverage of students across the three participating institutions, the study surveyed a larger sample than the minimum required. Consequently, a total of 400 Community Health students were recruited and successfully participated in the study. Employing a multistage sampling technique was done to achieve proportional representation. At the first stage, schools will be stratified into public and private categories. At the second stage, a random selection of schools was made from each stratum. The third stage involve proportionate sampling of students from both COHST and Community Health Department of Nasarawa State University Keffi. Finally, in the fourth stage, simple random sampling was used to select individual participants. This procedure ensures a fair and balanced representation across school types, thereby enhancing the validity, reliability, and generalizability of the study's findings.

List of Schools

Institution	Study Population	Sample Size Population
Nasarawa State University, Keffi (NSUK)	513	211
COHST Keffi	420	101
FAMSAS COHST Keffi	367	88
Total	1300	400

Instrument for Data Collection

Data were collected using a structured self-administered questionnaire developed from previous literature on competency-based healthcare education and simulation-based learning.

The questionnaire consisted of four sections:

- socio-demographic characteristics,
- instructional methods,
- competency acquisition,
- and factors affecting clinical learning.

Validity and Reliability

Face and content validity were established by experts in Community Health, Medical Education, and Research Methodology. Reliability testing using Cronbach Alpha yielded a reliability coefficient of 0.84 indicating good internal consistency.

Method of Data Analysis

Data were analyzed using SPSS version 26. Descriptive statistics including frequency, percentage, mean, and standard deviation were used for data presentation.

Bivariate Analysis

Chi-square statistical analysis was used to determine associations between instructional methods and competency acquisition. Statistical significance was set at $p < 0.05$

RESULTS

Descriptive Statistical Presentation of Findings

Table 1: Socio-Demographic Characteristics of Respondents (n = 400)

Variable	Frequency	Percentage (%)
Age Group		
16–20 years	145	36.3
21–25 years	193	48.1
26 years and above	62	15.6
Gender		
Male	186	46.4
Female	214	53.6
Institution		
NSUK	182	45.6
COHST	126	31.4
FAMSAS COHST	92	23.0
Total	400	100.0

Descriptive statistics including frequency and percentage were used to analyse the socio-demographic characteristics of respondents. The findings revealed that the majority of the respondents 193 (48.1%) were within the age range of 21–25 years, followed by 145 (36.3%) respondents aged 16–20 years, while 62 (15.6%) were aged 26 years and above. This implies that most respondents were young adults actively involved in undergraduate Community Health training. Regarding gender distribution, females constituted a slightly higher proportion of the respondents with 215 (53.6%), while males accounted for 185 (46.4%). This indicates relatively balanced gender participation in the study, although female students were more represented. Based on institutional distribution, respondents from Nasarawa State University, Keffi (NSUK) constituted the highest proportion with 182 (45.6%), followed by College of Health Sciences and Technology (COHST) with 126 (31.4%), while FAMSAS College of Health Sciences and Technology (FAMSAS COHST) accounted for 92 (23.0%) respondents.

Descriptive Statistics on Instructional Methods Used During Clinical Training

Table 2: Instructional Methods Used During Clinical Training

Instructional Method	Yes n (%)	No n (%)
Demonstration Method	328 (82.1)	72 (17.9)
Simulation-Based Learning	287 (71.7)	113 (28.3)
Clinical Posting	348 (87.1)	52 (12.9)
Lecture Method	392 (98.1)	8 (1.9)
Peer-Assisted Learning	242 (60.6)	158 (39.4)

Frequency and percentage analyses were used to determine the instructional methods utilized during clinical training among undergraduate Community Health students. The findings showed that lecture method was the most commonly utilized instructional approach with (98.1%) respondents affirming its use. This suggests that conventional classroom teaching remains the predominant teaching strategy across the institutions. Clinical posting was also highly utilized, as reported by 348 (87.1%) respondents, indicating that students were substantially exposed to supervised practical experiences in healthcare settings. Demonstration method was equally common, with 328 (82.1%) respondents confirming its utilization during clinical instruction. The simulation-based learning was reported by 287 (71.7%) respondents, reflecting moderate integration of simulation techniques into clinical training. Peer-assisted learning was the least utilized instructional method with 242 (60.6%) respondents indicating its use.

Table 3: Mean Rating of Clinical Skills Acquisition and the Use of Instructional Methods Among Community Health Students (n = 400)

S/N	Item Statement	Mean	Standard Deviation	Decision
1	Demonstration method improves my understanding of clinical procedures.	3.68	0.58	Accepted
2	Simulation-based learning enhances my practical competence.	3.54	0.71	Accepted
3	Clinical postings improve my confidence in performing clinical tasks.	3.72	0.55	Accepted
4	Lecture method alone is sufficient for clinical skills acquisition.	2.41	0.83	Rejected
5	Peer-assisted learning enhances my practical learning experience.	3.26	0.76	Accepted
6	Frequent demonstrations improve mastery of clinical skills.	3.75	0.52	Accepted
7	Availability of simulation laboratories enhances competency acquisition.	3.61	0.63	Accepted
8	Supervised practical sessions improve my clinical performance.	3.69	0.57	Accepted
9	Exposure to real clinical settings improves skill acquisition.	3.78	0.49	Accepted
10	The instructional methods used in my institution adequately prepare me for professional practice.	3.43	0.68	Accepted

Grand Mean = 3.49

Criterion Mean = 2.50

Table 3 presents the respondents' mean ratings on clinical skills acquisition and the use of instructional methods among Community Health students. The results revealed a grand mean score of 3.49, which is above the criterion mean of 2.50, indicating that respondents generally agreed that the instructional methods employed during clinical training significantly enhanced their competency acquisition.

Among the instructional methods assessed, exposure to real clinical settings recorded the highest mean score (Mean = 3.78, SD = 0.49), suggesting that students perceived direct interaction with real healthcare environments as the most effective approach for developing clinical competence. Frequent demonstrations (Mean = 3.75, SD = 0.52) and clinical postings (Mean = 3.72, SD = 0.55) were also highly rated, indicating their importance in improving students' practical skills, confidence, and professional readiness. Similarly, supervised practical sessions (Mean = 3.69, SD = 0.57), demonstration methods (Mean = 3.68, SD = 0.58), and simulation laboratories (Mean = 3.61, SD = 0.63) received high ratings, reflecting students' positive perceptions of hands-on and experiential learning approaches.

However, the statement that lecture method alone is sufficient for clinical skills acquisition recorded a mean score of 2.41 (SD = 0.83), which fell below the criterion mean and was therefore rejected. This finding suggests that respondents did not consider theoretical classroom teaching alone adequate for acquiring the practical competencies required in Community Health practice. The findings indicate that practical-oriented instructional methods such as clinical postings, demonstrations, simulation-based learning, and supervised practical experiences play a significant role in enhancing clinical skills acquisition among Community Health students.

Table 4: Factors Affecting Clinical Skills Acquisition

Variable	Mean	Standard Deviation	Decision
Inadequate teaching aids affect learning	3.42	0.76	Accepted
Overcrowded practical sessions reduce effectiveness	3.37	0.81	Accepted
Simulation laboratories improve competence	3.55	0.69	Accepted
Frequent demonstrations improve competency acquisition	3.61	0.64	Accepted

Criterion Mean = 2.50

Table 4 presents the respondents' perceptions regarding factors affecting clinical skills acquisition among undergraduate Community Health students. The analysis was based on a criterion mean of 2.50, where any item with a mean score above 2.50 was accepted as a significant factor influencing clinical skills acquisition.

The findings revealed that inadequate teaching aids affect learning, with a mean score of 3.42 and standard deviation of 0.76. This indicates that respondents strongly agreed that shortage of instructional materials and teaching aids negatively affects effective practical learning and competency development among students. In other words, overcrowded practical sessions reduce effectiveness recorded a mean score of 3.37 with a standard deviation of 0.81. This suggests that students perceived overcrowding during practical sessions as a major barrier to effective clinical instruction, likely due to reduced individual participation, limited supervision, and inadequate hands-on practice opportunities. The statement that simulation laboratories improve competence had a mean score of 3.55 and standard deviation of 0.69. This implies that respondents strongly acknowledged the importance of simulation laboratories in enhancing clinical competence, psychomotor skills, and students' confidence during practical training and frequent demonstrations improve competency acquisition recorded the highest mean score of 3.61 with a standard deviation of 0.64. This finding indicates strong agreement among respondents that repeated demonstrations by instructors significantly enhance understanding, skill mastery, and practical competence among Community Health students. In all the variables had mean scores above the criterion mean of 2.50, indicating that the respondents agreed that these factors significantly influence clinical skills acquisition among undergraduate Community Health students in tertiary institutions of Nasarawa State, Nigeria.

Table 5 : Level of Competency Acquisition Community Health Students (n = 400)

Level of Competency Acquisition	Frequency (f)	Percentage (%)
Good Competency Acquisition	271	67.8
Poor Competency Acquisition	129	32.2
Total	400	100.0

Table 5 shows the level of competency acquisition among undergraduate Community Health students in tertiary institutions of Nasarawa State, Nigeria. The findings revealed that 271 (67.8%) respondents demonstrated good competency acquisition, while 129 (32.2%) exhibited poor competency acquisition. This indicates that more than two-thirds of the students possessed satisfactory levels of clinical competence, suggesting that the instructional methods employed during training contributed positively to the development of practical skills and professional readiness.

The relatively high proportion of students with good competency acquisition may be attributed to the extensive use of clinical postings, demonstration methods, simulation-based learning, and supervised practical sessions reported in the study. However, the presence of 32.2% of students with poor competency acquisition highlights the need for continuous improvement in clinical instruction, provision of teaching aids, expansion of simulation facilities, and enhanced supervision during practical training.

Table 6: Bivariate Analysis of Instructional Methods and Competency Acquisition

Instructional Method	Good Competency n (%)	Poor Competency n (%)	χ^2	p-value
Demonstration Method	296 (74.1)	104 (25.9)	8.214	0.004*
Simulation-Based Learning	290 (72.6)	110 (27.4)	6.532	0.011*
Clinical Posting	312 (77.9)	88 (22.1)	9.146	0.002*
Lecture Method Only	218 (54.6)	182 (45.4)		

*Statistically significant at $p < 0.05$.

Table 6 presents the bivariate analysis showing the relationship between instructional methods and competency acquisition among undergraduate Community Health students. Chi-square (χ^2) statistical test was used to determine whether significant associations existed between the instructional methods utilized and students' level

of competency acquisition. Statistical significance was determined at $p < 0.05$. The findings revealed that respondents exposed to the demonstration method had higher levels of good competency acquisition, with 296 (74.1%) demonstrating good competency compared to 104 (25.9%) with poor competency. The Chi-square value of 8.214 and p-value of 0.004 indicate a statistically significant relationship between demonstration method and competency acquisition. This suggests that demonstration-based teaching significantly improves students' practical understanding and psychomotor skills.

Similarly, simulation-based learning showed a significant relationship with competency acquisition, where 290 (72.6%) respondents demonstrated good competency while 110 (27.4%) had poor competency. The Chi-square value of 6.532 and p-value of 0.011 further confirm that simulation-based instructional approaches significantly enhance students' clinical competence. This may be attributed to opportunities for repeated practice and experiential learning provided through simulation exercises. Clinical posting recorded the highest proportion of respondents with good competency acquisition, as 312 (77.9%) respondents demonstrated good competency compared to 88 (22.1%) with poor competency. The Chi-square value of 9.146 and p-value of 0.002 indicate a highly significant relationship between clinical posting and competency acquisition. This finding implies that supervised exposure to real healthcare environments plays a crucial role in enhancing students' practical competence, confidence, and professional preparedness.

However, respondents exposed mainly to lecture method only had comparatively lower levels of good competency acquisition, with 218 (54.6%) demonstrating good competency and 182 (45.4%) showing poor competency. This finding suggests that reliance on theoretical classroom teaching alone may not sufficiently enhance practical clinical competence among Community Health students. The findings demonstrate that practical-oriented instructional methods such as demonstration, simulation-based learning, and clinical posting significantly improve competency acquisition among undergraduate Community Health students. The statistically significant p-values (< 0.05) indicate that the observed relationships were unlikely due to chance.

Table 7: ANOVA of Institutional Comparison of Competency Acquisition Among Community Health Students (n = 400)

Institution	Good Competency n (%)	Poor Competency n (%)	Total
NSUK (n = 211)	156 (71.9)	55(28.1)	211
COHST (n = 101)	66 (65.7)	35 (34.3)	101
FAMSAS COHST (n = 88)	57(64.6)	31 (35.4)	88
Total	279 (67.8)	121 (32.2)	400

$$\chi^2 = 3.842$$

$$df = 2$$

$$p = 0.146$$

Table 7 presents the institutional comparison of competency acquisition among undergraduate Community Health students in tertiary institutions of Nasarawa State. The findings revealed that students from NSUK recorded the highest proportion of good competency acquisition, with 156 (71.9%) demonstrating good competency compared to 55 (28.1%) with poor competency. Similarly, 66 (65.7%) students from COHST and 57 (64.6%) students from FAMSAS COHST demonstrated good competency acquisition.

Although NSUK recorded a slightly higher level of competency acquisition than the other institutions, the Chi-square analysis ($\chi^2 = 3.842$, $p = 0.146$) showed that the observed differences were not statistically significant at the 0.05 level. This implies that competency acquisition among students was relatively comparable across the three institutions.

DISCUSSION OF FINDINGS

The findings revealed that demonstration methods, supervised clinical postings, and simulation-based learning were the most effective instructional approaches for competency acquisition among Community Health students. This finding supports studies which reported that simulation-based learning enhances clinical competence, psychomotor skills, and students' confidence in healthcare education. The study also demonstrated a statistically significant relationship between instructional methods and competency acquisition among students. This finding agrees with previous studies indicating that experiential and competency-based educational approaches improve students' clinical reasoning, communication abilities, and practical performance. Furthermore, inadequate teaching aids, overcrowded practical sessions, shortage of qualified instructors, and limited simulation facilities were identified as major barriers affecting effective clinical training. Similar findings have been reported among healthcare institutions in resource-limited settings where infrastructural deficiencies affect competency acquisition among healthcare students. The study also revealed that repeated demonstrations and supervised clinical experiences positively influence students' psychomotor competence and professional confidence. These findings align with competency-based educational theory which emphasizes experiential learning, repeated practice, and performance mastery.

CONCLUSION

This study assessed the effectiveness of clinical skills instructional methods and competency acquisition among Community Health students in tertiary institutions of Nasarawa State, Nigeria. The findings demonstrated that clinical skills acquisition is significantly influenced by the instructional approaches employed during training. Among the instructional methods examined, demonstration methods, simulation-based learning, and clinical postings emerged as the most effective strategies for enhancing students' practical competence, confidence, procedural skills, and readiness for professional practice. The study revealed that a substantial proportion of the students attained good competency acquisition, indicating that the current training approaches adopted by the institutions contribute positively to the development of essential clinical skills. However, the findings also highlighted the continued importance of strengthening practical learning experiences, as a considerable proportion of students still demonstrated suboptimal competency levels. This suggests that theoretical knowledge alone is insufficient for producing competent Community Health practitioners and underscores the necessity of integrating practical, learner-centered, and competency-based instructional strategies into health professions education.

Furthermore, the significant relationships observed between demonstration methods, simulation-based learning, clinical postings, and competency acquisition affirm the critical role of experiential learning in healthcare training. These findings support Benner's Novice-to-Expert Theory, which emphasizes that competence develops progressively through guided practice, repeated exposure, feedback, and real-life clinical experiences. The study also reinforces contemporary competency-based education frameworks that advocate outcome-oriented learning and practical skills mastery as prerequisites for professional effectiveness. The findings have important implications for policymakers, educators, curriculum developers, and institutional administrators. Effective healthcare delivery depends largely on the competence of health professionals, and such competence is developed through exposure to quality clinical training environments. Therefore, investment in simulation laboratories, teaching aids, clinical placement opportunities, and faculty development programmes is essential for improving learning outcomes and ensuring that graduates possess the skills required to meet contemporary healthcare challenges. The study contributes to existing literature by providing empirical evidence on the effectiveness of instructional methods among Community Health students, a population that has received relatively limited attention in previous research. Unlike many earlier studies that focused primarily on nursing and medical students, this study provides context-specific evidence from tertiary institutions in Nasarawa State, thereby expanding understanding of competency acquisition within Community Health education in Nigeria.

In conclusion, the study establishes that practical-oriented instructional methods are fundamental determinants of competency acquisition among Community Health students. Institutions that prioritize demonstrations, simulation-based learning, supervised clinical postings, and supportive learning environments are more likely to produce competent graduates capable of delivering quality healthcare services. Strengthening these instructional

approaches will not only improve students' clinical competencies but will also contribute to improved healthcare outcomes, workforce preparedness, and the overall advancement of Community Health practice in Nigeria.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are proposed to improve the effectiveness of clinical skills instructional methods and enhance competency acquisition among Community Health students in tertiary institutions of Nasarawa State, Nigeria:

Strengthening Simulation-Based Learning Facilities

Tertiary institutions offering Community Health programmes should invest in modern simulation laboratories equipped with mannequins, task trainers, audio-visual learning tools, and other instructional technologies. Simulation-based learning provides students with opportunities to repeatedly practice clinical procedures in a safe and controlled environment without exposing patients to unnecessary risks. The availability of functional simulation laboratories will improve students' confidence, procedural competence, critical thinking abilities, and preparedness for real clinical situations.

Expansion of Supervised Clinical Postings

Institutional administrators and programme coordinators should increase the duration, frequency, and quality of supervised clinical postings in accredited healthcare facilities. Clinical postings expose students to real-life patient care experiences and facilitate the application of theoretical knowledge to practice. Adequate supervision by qualified clinical instructors should be ensured to provide continuous guidance, feedback, mentorship, and assessment of students' performance during clinical placements.

Increased Use of Demonstration-Based Teaching Methods

Lecturers and clinical instructors should adopt demonstration methods as a routine component of clinical instruction. Demonstrations allow students to observe correct procedures before attempting them independently, thereby reducing errors and enhancing psychomotor skill development. Institutions should encourage practical demonstrations across all major clinical procedures and ensure that students are provided with adequate opportunities for return demonstrations and supervised practice.

Adoption of Competency-Based Education Approaches

Curriculum developers and educational policymakers should strengthen the implementation of competency-based education within Community Health programmes. Training should emphasize measurable competencies, practical performance, and achievement of clearly defined learning outcomes rather than focusing predominantly on theoretical knowledge. Competency assessment tools should be integrated into training programmes to ensure that students demonstrate mastery of required skills before graduation.

Provision of Adequate Teaching and Learning Resources

Government agencies, institutional management, and development partners should provide adequate teaching aids, clinical equipment, instructional materials, and laboratory resources necessary for effective clinical training. Shortages of equipment and learning materials may limit opportunities for practical exposure and reduce the quality of competency acquisition. Sustainable funding mechanisms should therefore be established to support clinical education programmes.

Reduction of Overcrowding During Practical Sessions

Institutions should address challenges associated with large student populations during clinical training by maintaining appropriate student-instructor ratios and organizing students into manageable practical groups. Overcrowding reduces opportunities for individualized supervision, hands-on practice, and effective feedback. Smaller practical groups will enhance active participation and improve learning outcomes.

Continuous Capacity Development for Educators

Clinical instructors and lecturers should receive regular training in modern teaching methodologies, simulation-based education, clinical supervision, mentorship, and competency-based assessment techniques. Faculty development programmes will ensure that educators possess the skills required to effectively facilitate student learning and competency development.

Strengthening Collaboration Between Academic Institutions and Healthcare Facilities

Tertiary institutions should establish stronger partnerships with hospitals, primary healthcare centres, and community-based healthcare facilities to increase opportunities for experiential learning. Such collaborations will enhance access to quality clinical placement sites, expose students to diverse healthcare settings, and improve practical skill acquisition.

Institutional Monitoring and Evaluation of Clinical Training Programmes

Programme administrators should establish periodic monitoring and evaluation mechanisms to assess the effectiveness of instructional methods and clinical training activities. Regular evaluation will help identify gaps in training, determine areas requiring improvement, and ensure continuous enhancement of educational quality and student competency outcomes.

Promotion of Student-Centred Learning Approaches

Institutions should encourage active learning strategies such as peer-assisted learning, case-based discussions, problem-based learning, reflective practice, and collaborative learning. These approaches promote critical thinking, teamwork, communication skills, and independent problem-solving abilities, all of which are essential competencies for Community Health practitioners.

Implications for Policy and Practice

The implementation of these recommendations will contribute significantly to the production of competent Community Health graduates capable of meeting the healthcare needs of individuals, families, and communities. Improved competency acquisition will strengthen healthcare workforce preparedness, enhance quality of service delivery, support national health goals, and contribute to improved population health outcomes in Nigeria. Furthermore, strengthening practical-oriented instructional methods within Community Health education will align training programmes with global best practices in competency-based health professions education and facilitate the development of a highly skilled and responsive healthcare workforce.

Contribution to Knowledge

This study contributes to the growing body of knowledge on health professions education by providing empirical evidence on the effectiveness of clinical skills instructional methods and competency acquisition among Community Health students in tertiary institutions of Nasarawa State, Nigeria. The specific contributions of the study include the following:

Provision of Empirical Evidence on Community Health Education:

The study expands existing literature on competency acquisition by focusing specifically on Community Health students, a population that has received relatively limited research attention compared with nursing and medical students in Nigeria. It therefore fills an important knowledge gap in Community Health education and training.

Identification of Effective Instructional Methods:

The study established that demonstration methods, simulation-based learning, and clinical postings are significant instructional approaches associated with improved competency acquisition among Community Health students. This finding provides evidence-based guidance for educators and curriculum developers seeking to improve clinical training outcomes.

Validation of Competency-Based Learning Approaches:

The study provides empirical support for competency-based education and experiential learning models by demonstrating that practical-oriented instructional strategies contribute significantly to the development of clinical competence, confidence, and professional readiness among students.

Contribution to Educational Theory and Practice:

The findings support Benner's Novice-to-Expert Theory by confirming that students develop competence progressively through repeated exposure to demonstrations, supervised practice, simulation exercises, and clinical experiences. The study therefore strengthens the application of this theoretical perspective within Community Health education.

Evidence for Curriculum Improvement:

The study provides valuable information that can guide curriculum review and educational reforms in tertiary institutions offering Community Health programmes. The findings highlight the need for increased integration of simulation-based learning, supervised clinical experiences, and competency-focused instructional strategies into training curricula.

Contribution to Policy Development:

The study generates evidence that may assist regulatory bodies, educational institutions, and policymakers in developing standards, guidelines, and policies aimed at improving the quality of clinical education and competency acquisition among Community Health students in Nigeria.

Establishment of Baseline Data for Future Research:

The study provides baseline information on instructional methods and competency acquisition among Community Health students in Nasarawa State. Future researchers can utilize these findings for comparative studies, longitudinal investigations, intervention studies, and multi-institutional assessments across Nigeria and other African countries.

Enhancement of Healthcare Workforce Development:

By demonstrating the importance of practical-oriented instructional methods in competency acquisition, the study contributes to efforts aimed at producing competent Community Health practitioners capable of delivering effective, safe, and quality healthcare services. This has implications for healthcare workforce development, health system strengthening, and improved population health outcomes.

Finally, the study contributes new evidence to the discourse on clinical education by demonstrating that the quality and nature of instructional methods significantly influence competency acquisition among Community Health students. The findings underscore the need for greater emphasis on practical, competency-based, and student-centred learning approaches in the training of future Community Health professionals in Nigeria.

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