

## RESEARCH ARTICLE

## ASSESSING FINAL YEAR RADIOGRAPHY STUDENTS' SATISFACTION WITH CLINICAL TRAINING: A CROSS-SECTIONAL STUDY AT LEAD CITY UNIVERSITY, NIGERIA

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## ARTICLE DETAILS

## Article History:

Received 14 October 2024  
Revised 18 October 2024  
Accepted 20 November 2024  
Available online 02 December 2024

## ABSTRACT

**Background:** Clinical training is a crucial component of radiography education, bridging the gap between theoretical knowledge and practical application. This study aimed to assess the satisfaction levels of final year radiography students with their clinical training experiences at the University College Hospital, Ibadan.

**Methods:** A cross-sectional survey design was employed, with a self-administered questionnaire distributed to 50 final-year radiography students at Lead City University. The questionnaire covered demographics, clinical experiences, learning environment, and overall satisfaction. Data was analyzed using descriptive statistics and chi-square tests.

**Results:** Forty students (80% response rate) completed the survey. Overall satisfaction levels were mixed, with 35% of students dissatisfied and 22.5% satisfied. Key areas of concern included limited access to hands-on training (52.5%) and poor preparedness for future practice (40%). No significant gender differences were found in overall satisfaction ( $p=0.422$ ) or quality of clinical training ( $p=0.408$ ). However, gender differences were observed in comprehension of specific imaging modalities like fluoroscopy ( $p=0.031$ ) and nuclear medicine ( $p=0.002$ ).

**Conclusion:** While some aspects of clinical training were positively received, significant areas for improvement were identified. Enhancing access to hands-on training, improving supervision and feedback and addressing infrastructure challenges are crucial steps to enhance the quality of radiography clinical education.

## KEYWORDS

Healthcare, Imaging Modalities, Practical Experience, Fluoroscopy, Education, Equipment Malfunction, University College Hospital, Ibadan.

## 1. INTRODUCTION

Radiography education combines theoretical knowledge with practical skills, making clinical training an essential component of the curriculum (Lemu et al., 2020). In Nigeria, radiography education has evolved significantly since its inception in the 1940s, with the current system requiring a Bachelor of Science degree and registration with the Radiographers Registration Board of Nigeria (RRBN, 2024). As the field advances, ensuring high-quality clinical training is crucial for producing competent radiographers capable of meeting the healthcare needs of the population.

The clinical learning environment plays a vital role in shaping students' professional development, offering opportunities to apply classroom knowledge, observe experienced practitioners, and develop essential skills (Sichone, 2020). However, students often express concerns about their clinical training experiences, highlighting a gap between expectations and reality (Brown et al., 2022). Understanding these experiences is crucial for improving educational outcomes and preparing students for their future careers.

This study aimed to assess the satisfaction levels of final year radiography

students at Lead City University with their clinical training at the University College Hospital, Ibadan. By examining various aspects of the clinical experience, including learning resources, professional integration, and challenges faced, this research seeks to identify areas for improvement and inform evidence-based enhancements to the radiography education program in Nigeria.

## 2. METHODS

## 2.1 Study Design and Participants

A cross-sectional survey design was employed for this study. The target population comprised all final-year radiography students ( $n=50$ ) at Lead City University, Ibadan, Nigeria. Given the relatively small population size, a census approach was used, inviting all eligible students to participate.

## 2.2 Data Collection Instrument

A self-administered questionnaire was developed specifically for this study, drawing on existing literature and tailored to the local context. The questionnaire was divided into sections covering:

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10.26480/jhcdc.01.2024.39.41

- Demographics (age, gender)
- Clinical training experiences (variety of procedures performed, supervision received, access to equipment)
- Learning environment (opportunities for feedback, availability of learning resources)
- Overall satisfaction with the clinical placement (using a Likert scale)
- Open-ended questions for additional comments and suggestions

### 2.3 Data Collection Procedure

Following approval from the Ethics Committee of Lead City University, information sessions were conducted to explain the study objectives and obtain informed consent from participants. Questionnaires were distributed to consenting students via online google form, and they were given two weeks to complete and return them anonymously.

### 2.4 Data Analysis

Quantitative data were analyzed using descriptive statistics (frequencies, percentages, means, and standard deviations) and chi-square tests to examine potential gender differences. Open-ended responses were analyzed thematically to identify recurring issues and suggestions. Statistical significance was set at  $p < 0.05$ . All analyses were performed using SPSS version 22.

## 3. RESULTS

### 3.1 Participant Characteristics

Of the 50 questionnaires distributed, 40 were completed and returned, yielding a response rate of 80%. The gender distribution among participants was relatively balanced, with 52.5% male and 47.5% female respondents. The majority of participants (37.5%) were in the 20-25 age group, followed by 25% in the 26-30 age group.

### 3.2 Overall Satisfaction and Expectations

The results revealed mixed levels of satisfaction with the clinical training experience. Thirty-five percent of students reported being dissatisfied, while 22.5% were satisfied. Notably, 45% of respondents indicated that their experience was lower than expected, with an additional 25% reporting it as much lower than expected. Chi-square tests showed no significant gender differences in overall satisfaction ( $p = 0.422$ ) or perceived quality of clinical training ( $p = 0.408$ ).

### 3.3 Learning Resources and Support

Access to learning resources and hands-on training opportunities emerged as significant concerns. Fifty-two and a half percent of students reported limited access to hands-on training, while only 12.5% reported good access. Regarding supervision by instructors, 45% of students rated it as good, but 32.5% were neutral. Feedback from instructors was predominantly rated as neutral (47.5%) or effective (32.5%). No significant gender differences were found in perceptions of learning resources and support ( $p > 0.05$  for all variables).

### 3.4 Professional Integration and Development

Forty-five percent of students felt moderately integrated into the healthcare team, with only 2.5% reporting full integration. Inter-professional collaboration was rated as good by 40% of respondents and neutral by 45%. Regarding critical thinking development, 40% were satisfied, and 37.5% were neutral. However, 40% of students felt poorly prepared for future practice, indicating a potential gap in the training program's ability to bridge academic knowledge with practical skills. Gender did not significantly influence these perceptions ( $p > 0.05$  for all variables).

### 3.5 Understanding of Imaging Modalities

The impact of clinical training on understanding various imaging modalities varied. For X-ray vs. CT differences, 50% reported a moderate impact. However, for more advanced modalities like MRI, CT, and X-ray applications, 40% reported a very poor impact on their knowledge. Similarly, 37.5% reported a very poor impact on their understanding of ultrasound principles and interventional radiology. Interestingly, chi-square tests revealed significant gender differences in comprehension of fluoroscopy ( $p = 0.031$ ) and nuclear medicine ( $p = 0.002$ ), and this is skewed in favour of male students. This suggests potential areas for targeted

educational interventions.

### 3.6 Clinical Training Challenges

Infrastructure and resource-related challenges were prominent in students' experiences. Power outages were reported as frequent or extremely frequent by 55% of respondents, with 32.5% indicating poor preparedness for such issues. Equipment malfunctions were reported as occasional by 50% of students, with 45% feeling moderately prepared to handle these situations. Staffing challenges were reported as occasional by 45% of respondents. These challenges did not show significant gender-based differences ( $p > 0.05$  for all variables), suggesting they are systemic issues affecting all students equally.

## 4. DISCUSSION

This study provides valuable insights into the experiences and perceptions of final year radiography students during their clinical training at the University College Hospital, Ibadan. The findings reveal both strengths and areas for improvement in the current training program, with implications for curriculum development and resource allocation.

The overall satisfaction levels, with 35% of students expressing dissatisfaction and 45% reporting that their expectations were not met, highlight significant room for improvement in the clinical training experience. This aligns with previous studies that have identified gaps between student expectations and the realities of clinical placements in healthcare education (Brown et al., 2022). The lack of significant gender differences in satisfaction levels suggests that these challenges are experienced similarly by male and female students, emphasizing the need for broad-based improvements rather than gender-specific interventions.

Access to hands-on training emerged as a critical area of concern, with over half of the students reporting limited access. This finding resonates with recent literature emphasizing the importance of practical experience in developing clinical competence (Green and White, 2023). Limited hands-on opportunities can significantly impact students' confidence and preparedness for future practice, as evidenced by the 40% of respondents who felt poorly prepared for their future careers.

The moderate levels of integration into healthcare teams and inter-professional collaboration reported by students underscore the need for more structured approaches to fostering professional development during clinical placements. Effective integration is crucial for developing teamwork skills and understanding the multidisciplinary nature of modern healthcare (Johnson et al., 2021). Enhancing these aspects of clinical training could contribute significantly to students' overall satisfaction and preparedness for professional practice.

The varying impacts of clinical training on understanding different imaging modalities, particularly the poor impact reported for advanced techniques like MRI and interventional radiology, highlight potential gaps in the curriculum or limited exposure to these technologies during placements. The significant gender differences observed in comprehension of fluoroscopy and nuclear medicine warrant further investigation and may indicate a need for tailored educational strategies to ensure equitable learning outcomes (Lee and Kim, 2023).

Infrastructure challenges, particularly frequent power outages and equipment malfunctions, emerge as significant barriers to effective clinical training. These issues, while not unique to radiography education, can severely impact the quality and continuity of learning experiences (Thompson et al., 2021). Addressing these challenges requires a multi-faceted approach, involving both educational institutions and healthcare facilities to ensure a conducive learning environment.

### 4.1 Limitations

This study has several limitations that should be considered when interpreting the results. The relatively small sample size ( $n = 40$ ) and focus on a single institution limit the generalizability of the findings. The cross-sectional design provides a snapshot of student experiences but does not capture changes over time. Additionally, the reliance on self-reported data may introduce bias, and the absence of objective measures of clinical competence limits our ability to correlate satisfaction with actual performance outcomes.

## 5. CONCLUSION

This study highlights significant areas for improvement in the clinical training of radiography students at Lead City University. While some

aspects of the training program are positively received, challenges related to hands-on practice opportunities, professional integration, and infrastructure pose substantial barriers to optimal learning experiences. The findings underscore the need for a comprehensive review of the clinical training curriculum, with a focus on enhancing practical skills development, improving supervision and feedback mechanisms, and addressing systemic challenges that impact the quality of training.

Recommendations for future practice include:

- Enhancing access to hands-on training opportunities through increased use of simulation labs and structured clinical rotations.
- Improving supervision and feedback mechanisms to provide students with more frequent and constructive guidance.
- Developing strategies to better integrate students into healthcare teams and foster inter-professional collaboration.
- Addressing infrastructure challenges through investments in reliable backup systems and equipment maintenance protocols.
- Tailoring educational strategies to address gender-based differences in comprehension of specific imaging modalities.
- Conducting regular assessments of student satisfaction across the Country and training quality to inform continuous improvement efforts and policy formulation.

Future research should expand on these findings through larger, multi-institutional studies and longitudinal designs to track changes in student experiences over time. Additionally, incorporating objective measures of clinical competence and exploring the perspectives of clinical instructors and site administrators would provide a more comprehensive understanding of the clinical training landscape in radiography education.

By addressing the identified challenges and building on existing strengths, radiography education programs can enhance the quality of clinical

training, better prepare students for professional practice, and ultimately contribute to improved healthcare delivery in Nigeria.

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