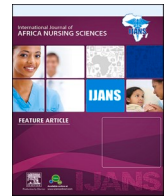




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Nurse educators' views on online clinical teaching: insights from South Africa's public nursing colleges

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ABSTRACT

Introduction: Nursing education institutions have an obligation to create learning platforms to ensure that students are exposed to learning experiences enhancing their confidence and skill as qualified professionals. Challenges negatively influencing the education and training of nursing students include inadequate resources, nurse educator-student ratio, clinical placement, and occurrence of uncommon medical conditions. Online-based activities provide an alternative platform to lessen the challenges in clinical teaching.

Methods: A qualitative, explorative, and descriptive design was adopted. Data was collected through three focus group interviews from fifteen (n = 15) nurse educators and analyzed using thematic content analysis.

Findings: The analysis revealed two main themes: (a) Teaching convenience associated with the use of online activities and (b) Availability of capital resources. The findings revealed that online clinical activities provided substantial teaching convenience by enhancing flexibility and efficiency in clinical instruction. However, the implementation of these activities was hindered by critical challenges, particularly the limited availability of capital resources such as reliable internet connectivity and appropriate technological tools.

Discussion: Views of nurse educators sought to assist nursing education institutions to plan on measures for preventing challenges that can negatively affect effective use of online platform for clinical teaching. Nurse educators considered online activities as an innovative platform that can enhance clinical teaching and contribute positively to clinical learning experiences, although careful consideration must be given to the nature of the nursing discipline.

Conclusion: While online clinical activities enhance teaching convenience in clinical education, addressing resource limitations is essential for their successful integration in public nursing colleges.

1. Introduction

The nursing profession is inherently practice-based, requiring continuous interaction between nurse educators, student nurses, and patients within real-life clinical placement settings (Atakro et al., 2019; Marriott, Weller-Newton, & Reid, 2024). Yet these interactions have been impacted by the rise in the use of technology, changing patient demographics and limited clinical learning opportunities. Global trends in education generally point to the role that technology and online teaching methodologies play in preparing the workforce for various professions. The nursing profession has not been immune to challenges associated with advancing disruptive technologies. Twenty-first century nursing students routinely utilize technological tools to support their daily clinical practice (Hsu, Ye & Ling, 2022). Correspondingly, there

has been a marked increase in online nursing education programs (American Association of Colleges of Nursing, 2024). In health care professions such as the medical and pharmaceutical industries, the concept of teaching and learning has been broadened to include online clinical activities (Lea, 2020; Selcuk et al., 2025). However, the nursing profession has not moved at a fast pace to adapt to the demands of the fourth industrial revolution where online based teaching and learning has become a large portion of modern health professions education. In response to ongoing challenges in the clinical teaching of nursing students such as limited learning opportunities, overcrowded placement sites, and the high costs of traditional training, online activities have emerged as alternative avenues to support and enhance clinical education (Li et al., 2021). The integration of online clinical activities enables flexible, cost-effective learning that can take place anytime and

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anywhere. This shift highlights the need to explore nurse educators' perspectives on the use of these online approaches in the clinical teaching of nursing students.

During the Covid-19 pandemic outbreak, nursing education institutions (NEIs) were found to be unprepared to manage challenges that arose in trying to mitigate the impact on teaching and learning (Haanes et al., 2024). As a result, distance learning became the order of the day for most institutions due to restrictions associated with the lockdowns in many countries. Many institutions were suddenly impelled to restructure their learning activities and come up with creative ways of meeting clinical training requirements while maintaining the quality of teaching and learning (Goh & Sandars, 2020). Online theoretical teaching and learning may have been an easier platform to adopt as opposed to clinical teaching and learning, which has specific requirements and settings and whose assessment is mostly confined to real-patient settings. Institutions were compelled to adopt unprecedented teaching strategies, leading to uncertainty and frustration among both nurse educators and students related to online education (Shihab, 2023). Consequently, adopting online clinical teaching emerged as a priority in adapting to the new normal of modern healthcare education.

In the South African context, factors impacting clinical teaching in nursing include policy changes in the healthcare system, restructuring of the nursing education curriculum, the introduction of new online nursing programmes, and directives for public nursing colleges to attain higher education status, altering the landscape of nursing education in South Africa (Blaauw, Ditlopo & Rispel, 2014; Matahela & Makhanya, 2024). As such, clinical teaching must evolve beyond traditional clinical laboratories and hospital settings to include non-hospitalized patients. However, this shift is largely beyond the control of nurse educators, as global trends continue to shape healthcare education. Despite the urgent need for restructuring, the current curriculum remains rigid and unpredictable in aligning clinical training goals with modern educational paradigms (Bindon, 2017).

Nonetheless, nurse educators must acknowledge that today's nurses are entering a transformed healthcare landscape where digital technology plays a crucial role. The internet has become an essential tool for accessing up-to-date clinical information (Gause, Mokgaola & Rakhudu, 2022). To adapt, nurse educators must embrace change by integrating online clinical activities as a viable clinical teaching strategy. Largely because traditional clinical teaching approaches are increasingly difficult to sustain in the current educational climate (Harerimana and Mtshali, 2019). Furthermore, it can be argued that nurses are already utilizing various internet platforms and digital devices to enhance their theoretical knowledge and practical skills, enabling them to stay ahead of the rapid changes in healthcare and the clinical learning environment.

Current clinical teaching methods rely on clinical placements that engage students in various healthcare settings to integrate theory with practice. In South Africa, this is a mandatory requirement set by the South African Nursing Council (SANC, 2013). However, clinical placements come with several challenges, including stressful work environments, a shortage of clinical supervisors for coaching, political influences, and a lack of available patients for hands-on practice (Fadana & Vember, 2021). Additionally, monotonous nursing tasks and overcrowded student placements have negatively impacted students' ability to develop clinical competence (Mathebula, 2016; De Swart, 2019; Motsaanaka, Makhene & Ally, 2020). As a result, existing clinical placement sites often fail to provide adequate exposure for students, making them unsuitable for effective clinical skills training. This underscores the need for technological integration to compensate for both actual and potential learning gaps.

According to SANC clinical teaching guidelines, a 1:15 educator-to-student ratio is required for effective clinical supervision. However, the chronic shortage of nurse educators and professional nurses to oversee students presents a significant challenge in meeting clinical training requirements. Inadequate supervision weakens clinical teaching and risks producing professional nurses who lack essential skills. To

address these challenges, SANC has introduced a clinical training matrix (60:20:20) for Nursing Education Institutions (NEIs), outlining the distribution of learning activities. Sixty percent of training is dedicated to work-integrated learning, twenty percent focuses on learning for role-taking, and the remaining twenty percent is allocated to simulation-based learning. With advancements in technology, online teaching platforms, which were previously unavailable, can now be incorporated into this framework. Thus, there is a growing need to explore educators' views on integrating online clinical activities into nursing education and training to enhance clinical teaching and student preparedness.

2. Significance of the study

The study provided insights into how nurse educators viewed the use of online clinical activities for clinical teaching, which has become an integral part of modern education. Additionally, their views help identify best practices and potential challenges, ultimately leading to improved teaching methodologies. By examining the benefits and limitations of online clinical activities from the perspective of nurse educators, the study contributes to the development of strategies that enhance student engagement and learning outcomes in clinical settings. This is particularly significant in the post-COVID-19 era, where there is an increasing emphasis on digital literacy and online learning. As a result, the study offers valuable insights into how public nursing colleges in South Africa are adapting to these evolving trends. Furthermore, the findings can guide policymakers and educational institutions in designing curricula that effectively integrate online activities into clinical education.

3. Methods

3.1. Design

The study adopted a qualitative, explorative, descriptive, and contextual design underpinned on a constructivist paradigm. The design and approach allowed for the exploration and uncovering of nursing education matters on clinical teaching using technology, where little was known about the phenomenon in the study setting (Braune & Clarke, 2021). This design was chosen to elicit the views of the nurse educators and to understand the meaning of their views in relation to the study phenomenon.

3.2. Study setting

The study was conducted in three public, government-funded Nursing Education Institutions (NEIs), commonly referred to as nursing colleges, in Gauteng Province, South Africa. These NEIs are in urban areas of the province and previously offered the four-year Diploma in Nursing and Midwifery, along with other postgraduate nursing qualifications. In the first NEI, the student population totalled 799, with 31 nurse educators. The second NEI had 763 students and 102 nurse educators, while the third had 439 students and 109 nurse educators. All three institutions have demonstration rooms, commonly known as clinical laboratories, equipped with computers and Wi-Fi access. However, the available computers were primarily used for typing student assignments and accessing uploaded clinical learning materials, such as clinical tools, placement schedules, and assessment timetables.

3.3. Population and sampling

The study population consisted of nurse educators teaching in the undergraduate nursing programme. All participating nurse educators met the inclusion criteria, as they were actively involved in the clinical teaching of nursing students. Purposive sampling was used to select participants ($n = 15$) who volunteered from each nursing college, with a particular emphasis on ensuring representation from nursing disciplines

that include clinical components, such as community nursing, general nursing, mental health, and midwifery. Focus group discussions were conducted until data saturation was achieved. From the recruitment process, five nurse educators from each study setting, all of whom had been teaching student nurses for at least two years, were selected to participate in the study.

3.4. Positioning the researchers

The researchers are academics with combined experience in nursing education and academia, of over 30 years. All the researchers are registered with the South African Nursing Council as nurse educators with post-graduate qualifications in nursing specialties, including nursing education.

3.5. Data collection

Data was collected from three NEIs, with five nurse educators participating in each of the three focus group discussions. Upon arrival at each study setting, the researcher was provided with a private, quiet area for conducting the focus group interviews. At all three study sites, each session began with the researcher explaining the ethical principles to be adhered to, the aim of the study, and the use of audio recordings to obtain verbatim data. Emphasis was placed on maintaining the confidentiality of participant responses throughout the focus group interview session.

To ensure anonymity and confidentiality, participants were asked to state only the discipline in which they practiced and their assigned codes (e.g., 1, 2, 3). No names were used to identify participants. The main question posed in the focus groups was: *What are your views on the use of online clinical activities for clinical teaching of nursing students in public nursing colleges?* Paraphrasing followed the main question to facilitate participation and ensure that responses were accurately understood and recorded. Clarification was sought when necessary to capture the correct information. Throughout the discussions, only the participants' discipline and assigned codes were referenced to maintain anonymity while ensuring clarity and relevance of responses. The focus group interviews continued within the stipulated time until no further responses could be obtained. Data from the first focus group discussion was used to guide subsequent discussions, ensuring data saturation was reached without compromising the depth of responses and engagement. Each focus group discussion lasted for 60 min. At the conclusion of each session, participants were thanked for their contributions to the data collection process.

3.6. Data analysis

Thematic content analysis was used to analyze the data, helping researchers make sense of the collected information (Braune & Clarke, 2021). Data analysis was conducted concurrently with data collection to inform subsequent focus group discussions. Participants were assigned codes to ensure anonymity and facilitate ease of reporting. Initially, data was transcribed to enhance familiarity with the collected information. This was followed by defining units or themes of analysis, which consisted of phrases, words, or sentences where key ideas were summarized and integrated into themes and subthemes. Codes were then developed to ensure consistency in the analysis process. Once codes were assigned, the researchers and an independent coder engaged in discussions and reached a strong consensus on the themes and subthemes that emerged.

3.7. Measures to ensure trustworthiness

Lincoln and Guba's (1985) criteria for trustworthiness guided the study to ensure credibility, transferability, dependability, and confirmability. Credibility was achieved through prolonged, in-depth interviews with participants, each lasting 60 min. Participants were encouraged to express their views freely and were assured that their participation was

voluntary, with no obligation to share if they felt uncomfortable. Additionally, member checking was conducted after the focus group discussions to verify that the captured data accurately represented participants' discussions and perspectives. Confirmability was maintained by the researcher through self-reflection on potential biases and their influence on the study findings. To ensure transferability, a detailed description of the methods and participants' perspectives on using online clinical activities for clinical teaching was provided. Dependability was reinforced by using a consistent set of questions across all focus group discussions, ensuring that data saturation was achieved. Participants' responses were audio-recorded, and field notes were taken with their permission to enhance the reliability and accuracy of data collection.

3.8. Ethical considerations

The study obtained ethical approval from the university's human research ethics committee (No. 705/2019) before data collection. All participants provided informed consent both verbally and in writing. Their right to self-determination was upheld, ensuring that they had the freedom to participate or decline without coercion or restriction. Additionally, no potential harm was anticipated because of participation in the study. The study adhered to the guidelines of the Declaration of Helsinki, ensuring that participants were treated with respect and fairness throughout the research process.

4. Findings

Fifteen participants (n = 15) took part in the focus group interviews across the three study settings, with each focus group discussion consisting of five participants. Of the total participants, 14 (93 %) were female, and 1 (7 %) was male. The participants' ages ranged from 37 to 60 years, with a mean age of 49.8 years. All participants were nurse educators with an additional qualification in nursing education, making them the most relevant individuals from whom to gather comprehensive data. Their years of experience varied from a minimum of five years to a maximum of 20 years. To ensure anonymity, participants were assigned codes based on their institution and the sequence of the focus group discussions. For instance, in the first focus group, the codes assigned were N1 for the first NEI and P1 for the first participant in that focus group discussion. Table 4.1 presents the participants' demographic data.

Two main themes emerged, providing clarity in understanding the nurse educators' views on the use of online clinical activities for teaching nursing students. These themes were: (a) Teaching convenience associated with the use of online clinical activities and (b) Availability of capital resources. Additionally, five sub-themes were identified under these main themes. The themes and sub-themes are presented in Table 4.2.

Table 4.1
Demographic data.

NEI	CODE	AGE	GENDER
NEI1	N1P1	47	Female
	N1P2	52	Female
	N1P3	50	Female
	N1P4	58	Female
	N1P5	47	Female
NEI2	N2P1	48	Female
	N2P2	51	Female
	N2P3	55	Female
	N2P4	60	Female
	N2P5	50	Female
NEI3	N3P1	59	Male
	N3P2	37	Female
	N3P3	39	Female
	N3P4	43	Female
	N3P5	51	Female

Table 4.2
Themes and sub-themes.

Theme	Sub-themes
Teaching convenience associated with the use of online clinical activities	Positive and negative influences on teaching and learning Required knowledge, skills and attitudes
Availability of capital resources	Cost as a barrier or enabler Computer literacy as a requirement for use Network coverage and Wi-Fi connection

Theme 4.1. Teaching convenience associated with the use of online activities.

Teaching convenience for using online activities emerged as an important theme throughout the focus group interviews. This theme refers to the benefits or advantages of adopting online teaching as viewed by the participants. Furthermore, the convenience associated with technology and online, blended-learning approaches appeared to be a strong point of contention and consensus among the participants.

4.1. Positive and negative influences on teaching and learning

Across the discussions during the focus interviews, participants outlined the use of online clinical activities for clinical teaching as having positive and negative influences in clinical teaching. These included providing flexibility of learning in own time and space, clinical placement monitoring, and ability to learn the whole subject. However, not all participants were of the same view. Some viewed use of online clinical activities as not possible in their disciplines, such as midwifery and psychiatry, citing resources as a problem and the human touch being reduced.

Nurse educators said:

“Online teaching is good, because it allows flexibility in clinical teaching that has never been experienced, not by students only, lecturers as well.” (N3P4)

“With online clinical activities, the student will learn at her own pace, at the place that suits her, and time. Same with the teacher; she chooses what to teach, when to upload the activity and what assignment to give for students. The activity is online so there is no pressure of arranging demonstration room to prepare for demonstrations.” (N2P5)

Other participants highlighted the influence that online platform has on clinical teaching:

“I see online teaching as allowing students to view the procedures for as many times as she wishes and until the student feels that she can confidently perform the procedure in the ward.” (N3P1)

However, Participant N3P2 differed by saying:

“Students will always be students; if students are afforded time to decide on when they will do the practice, they may end up not doing the procedure if there is no time limit allocated to start and finish off the procedure.”

Participants reported that it may not be favourable to implement online teaching in certain nursing disciplines, based on the nature of the discipline and activities required for teaching.

“It will be difficult especially in psychiatric nursing to take videos of the learning that involves patients. Remember, psychiatric patients are not able to make decisions about the care that the nurses give to them.” (N1P5)

“In psychiatry, the mirror used for psychiatric interventions cannot be used when the online teaching is adopted and therefore the strategy cannot be fully implemented in this discipline. (N3P1)

4.2. Required knowledge, skills and attitudes

Participants highlighted the importance of educators having knowledge and skills to facilitate the online teaching and learning of students. Most participants were of the view that some training is required to support educators in designing and implementing the online instructional methods. While some participants were negative, others had a receptive attitude, as is reflected in their response below:

“It might be difficult to implement the online activities because we are not admitting students from the general education stream, but some are from the nursing service. Those who are admitted purely for qualification upgrade may not benefit from the activities because they will not be digitally inclined.” (N3P5)

“The lack of computer skills by many of us requires that there should be retraining of teachers on computer skills to make use of this online clinical teaching tool.” (N2P3)

The focus group discussions provided information on computer skills as factor that affect the use of online clinical activities in clinical teaching. The attitudes of participants towards the use of online teaching in clinical teaching were both negative and positive.

Theme 4.2. Availability of capital resources.

Availability of capital resources was identified by most participants as having a negative and positive influence on the effective implementation and adoption of online platform in clinical teaching. The cost of the resources such as computers, wi-fi and computer literacy was highlighted as significant barriers.

4.3. Cost as a barrier or enabler

Throughout the focus group discussions, the issue of cost was cited as a barrier, though some of the participants had a different view towards cost, as they perceived it as an enabler to acquiring resources for online clinical teaching.

Participant N2P5 perceived online clinical teaching as a costly activity because of the cost of online devices:

“Online devices are costly; the department of health might not be able to provide internet devices for all students, so no matter how important the online clinical activity use is, but the cost is a challenge.”

Furthermore, participant N3P5 said the following about the cost of online devices:

“We think using online teaching as a flexible innovative clinical teaching strategy will assist the colleges, but it comes with cost. For instance, our laboratory rooms are not designed for online teaching; we will have to buy quite a lot of online material, like computers, enough to be used by students; devices for use by students and teachers alike are not enough for use. This is therefore an added cost to the college.”

On the contrary, Participant N2P2 did not perceive online clinical teaching as being costly.

“Online devices are a learning environment; they are a class on their own, so most of the costly activities are removed if the college move the demonstration of procedures from the demonstration room to the online class, which is the online device, meaning the activity is less costly.”

Another participant emphasised cost as a limiting factor and said:

“While it is accepted that our education and knowledge of the curricula was seen to be enough for teaching students previously, it relied on pen and paper methods. Now that the discussion is about using online devices and platforms for clinical teaching, the implementation of the exercise will be costly; not to say it cannot happen, but colleges have to think about the costs involved in setting the online platform.” (N2P1)

4.4. Computer literacy as a requirement for use

Computer literacy emerged also as a barrier to the use of online platform for clinical teaching throughout the focus group discussions. Taking the view of computer literacy as a requirement, participants perceived computer literacy inadequacy as a limiting factor to the success and adoption of online clinical teaching, as shared by Participant N1P2.

“We have been in the nursing education system for a long time and computer literacy has not been seen as the main requirement; much as we have some knowledge of computers, but it is not enough to create the online clinical activity. Some of us are about to retire and by the time this new teaching style is used we will be long gone in the education system.”

In addition, Participant N3P5 related the need for computer literacy to the type of students admitted in the NEIs.

“We admitted a new group of students who are fresh from school and the other group of students who have been in the service for a long time. Teaching these two groups of students is a challenge, especially because we also are not confident about computers. So, when the NEI is adopting full use of online clinical activities, some students will be left out.”

4.5. Network coverage and Wi-Fi connection

Further views of participants revealed that using online clinical activities cannot be fully successful because of the technical challenges related to data connectivity and speed as well as data sharing. One participant highlighted that Wi-Fi connectivity is an unreliable factor.

“While demonstrating a procedure or while engaging in an online assessment, Wi-Fi will not report but it will go offline, making it impossible to connect to the activity you were engaged in. It may even wipe off what has been done and achieved online, making it difficult to redo the same activity.” (N1P3)

Geographical location of the college was also mentioned as a cause for inability to access network coverage, thus limiting effective online clinical teaching:

“The geographical areas can be a challenge to the use of online clinical teaching because not all students reside in areas that have network coverage. Therefore, not all students can benefit from the online strategy.” (N2P5)

It appears in this theme that the availability of capital resources determines the success of using online activities and platform in clinical teaching. Hence, the unavailability of and inefficient capital resources were viewed as a limiting factor. The competency of the personnel charged with executing the online clinical activities in clinical teaching therefore determines the success of the task.

5. Discussion

The study aimed to explore and describe the views of nurse educators on the use of online clinical activities for clinical teaching in public nursing colleges. It was anticipated that these views would clarify potential facilitators, obstacles, and the feasibility of adopting this approach within public nursing colleges. Furthermore, the study sought to identify curriculum elements that should be considered before implementing an online-aligned clinical teaching programme. Overall, participants viewed the use of online platforms in clinical teaching as a progressive intervention with a positive influence on teaching and learning. The adoption of online clinical activities is necessary to address the challenges posed by modern healthcare and educational trends, where remote teaching and learning have become standard practice (Nwosu, Bereng, Segotso & Enebe, 2023). Higher education institutions in South Africa are increasingly encouraged to integrate technology-

mediated programs that equip students with 21st-century skills, emphasizing the use of digital platforms for teaching and learning (Harerimana & Mtshali, 2019). Successful integration of online clinical activities requires an understanding of nurse educators' perspectives to ensure positive learning outcomes for students.

The study found that online clinical activities can enhance teaching and learning by allowing students to catch up on missed lectures or clinical learning opportunities. This feature benefits not only absent students but also those who attended class and wish to revise the material (Mishra, Gupta & Shree, 2020). Participants highlighted the role of various digital platforms and devices in helping student nurses review missed content. However, Montoya (2020) cautions that significant learning losses can occur when students miss classes, even in an online setting.

Furthermore, the study established that online clinical activities should accommodate student nurses' diverse learning styles. Online clinical activities facilitate teaching through various digital tools, catering to visual, auditory, and kinaesthetic learners (Furey, 2020). However, students are unique, and a method that benefits one may not necessarily work for another. Therefore, nurse educators must utilize a variety of strategies to address diverse learning preferences when implementing online clinical activities (Jeffries & Rizzolo, 2020). The findings of this study support the view that online clinical activities can enhance clinical teaching by addressing students' varied learning styles.

Despite these advantages, flexibility in online learning can also lead to procrastination, which may negatively impact students' engagement with online clinical activities. Vearrier et al. (2018) suggest that many student nurses have not been adequately trained in self-directed learning, making it difficult for them to manage their time effectively. Additionally, Braukamper (2019) found that younger students are more prone to procrastination than older learners, who often have work and family responsibilities. Public nursing colleges primarily enrol adult learners who may exhibit greater self-regulation, reducing the likelihood of procrastination. However, this study identified procrastination as a potential barrier to the effective use of online clinical activities in clinical teaching.

Cost is another critical factor influencing the adoption of online clinical activities. Several studies suggest that online teaching can be expensive due to the need for equipment, digital literacy training, and the development of online teaching materials (Adibelli & Boyaci, 2018). However, Andriotis (2018) and O'Doherty et al. (2018) argue that online clinical activities can be cost-effective in the long run, as they reduce the need for printed materials and physical clinical monitoring, lowering transportation and administrative expenses. In contrast, the current study found that implementing online clinical activities in clinical teaching remains costly, particularly in public institutions with limited resources.

Another significant challenge identified was unreliable Wi-Fi connectivity and limited internet access. Mpungose (2020) highlights that a lack of internet access deprives student nurses of opportunities to engage with online learning materials, ultimately hindering their ability to participate in digital learning. Mackay et al. (2016) further emphasize that students without internet access are disadvantaged in developing digital literacy skills and accessing online clinical knowledge. In this study, limited Wi-Fi access was found to be a major barrier to the effective use of online clinical activities in clinical teaching. As online clinical activities are internet-based, they also depend on a stable electricity supply. Power interruptions disrupt digital learning by affecting video-streamed lessons, preventing access to online classes, and limiting student engagement in virtual discussions. Thembane (2024) notes that power outages are a not only a South African challenge, but globally many institutions face learning disruptions. While power cuts due to load shedding can be mitigated through backup power solutions or alternative internet providers, this remains a barrier to online clinical activities implementation in clinical teaching.

In summary, this study highlights the benefits and challenges

associated with using online clinical activities for clinical teaching. While online clinical activities enhance accessibility, flexibility, and engagement in nursing education, barriers such as procrastination, costs, internet access, and electricity supply must be addressed for effective implementation in public nursing colleges.

6. Conclusions

The study has provided valuable insights into the perspectives of nurse educators on the integration of online activities in clinical teaching within South Africa's public nursing colleges. The findings reveal a generally positive attitude towards the use of online tools, with educators recognizing the potential benefits in enhancing student engagement, flexibility in learning, and access to diverse resources. However, challenges such as technological limitations, varying levels of digital literacy among educators and students, and concerns about maintaining the quality of clinical training in an online format were also highlighted. Nurse educators are obliged to consider alternative teaching and learning approaches that respond to modern educational challenges. Particular attention should be focused on the educational needs of educators in relation to technology. Implementing such digital platforms may pose challenges to nurse educators whose previous experience with technology may have been unpleasant. Yet online clinical activities provide a different perspective for regulation and development of nursing education in South Africa.

7. Implications for nursing education and recommendations

The study demonstrated that online clinical activities have an important role in alleviating clinical teaching challenges such as lecture-student ratio, lack of clinical placement space and learning opportunities. Yet nurse educators are positive about its success provided they are capacitated with knowledge and skills for implementing and integrating online clinical activities while considering possible barriers. Public nursing colleges must develop mechanisms to identify inadequate computer literacy and address deficiencies in the context of the professional development system. This will in turn capacitate nurse educators to gain knowledge and confidence in creating and using online clinical activities in clinical teaching. The current study findings represent views of nurse educators; it is recommended that future research be conducted to obtain the voice of student nurses in relation to use of online clinical activities in clinical teaching.

8. Strengths and limitations

For this study, only 15 nurse educators formed part of the study sample, who brought their different views and experiences based on their discipline of nursing. Therefore, the results cannot be generalised to a larger population and may not be transferable to other contexts such as universities.

Availability of Data and Material

All the necessary data are provided within the paper and are available from the corresponding author upon reasonable request.

Ethics statement

The authors obtained ethical approval from the research ethics committee, faculty of health sciences, University of Pretoria, ethics reference:705/2019. Voluntary and informed consent was obtained from all participants before their participation. The study was conducted in line with the guidelines of the Declaration of Helsinki.

Consent for publication

Not applicable.

Consent to participate

Not applicable.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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