

Using Peer-Assisted Learning to Enhance Clinical Reasoning Skills in Undergraduate Nursing Students: A Study in Iraq

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Aim: This study examines the experiences and perceptions of first- and fourth-year nursing students regarding Peer-Assisted Learning (PAL) in clinical settings.

Design and Methods: This study employed a qualitative descriptive design to explore and understand first- and fourth-year nursing students' perceptions, experiences, and reflections regarding Peer-Assisted Learning (PAL) in a clinical setting. Data were extracted from studies involving first- and fourth-year students, comparing academic competencies, confidence, peer relationships, and professional identity. Thematic analysis synthesized findings from clinical and simulation settings.

Results: PAL significantly enhanced critical thinking, problem-solving, and clinical decision-making. First-year students reported increased motivation and a sense of belonging through mentorship, while senior students, acting as peer educators, strengthened their professional identity and commitment to nursing values. Across all levels, PAL fostered collaboration and community, which are essential for healthcare practice.

Conclusion: PAL effectively supports nursing students' cognitive and social development, preparing them for healthcare's collaborative and reflective nature. Integrating structured PAL programs into nursing curricula can enhance academic performance, motivation, and professional identity, fostering resilient and community-oriented healthcare professionals.

Keywords: critical thinking, peer-assisted, undergraduate nursing education, teaching strategies, challenges, methods, Iraq

Introduction

Effective learning is most enduring when achieved through practice and real-life application. Clinical education is critical to nursing programs, enabling students to integrate and apply theoretical knowledge within a practical setting.¹⁻³ Through hands-on experiences, nursing students develop the essential skills, knowledge, attitudes, and values required for their future professional roles. Clinical education facilitates skill acquisition and aids in the transition from student to professional nurse.⁴

In modern clinical education settings, hospitals frequently accommodate large numbers of students from various stages of training who share clinical spaces.⁵ This arrangement, driven by logistical constraints, often sees students of different academic levels learning side-by-side. Senior students, particularly fourth-year nursing students, are increasingly being integrated into these environments as peer supporters for their junior counterparts.⁶ This peer-based approach, called Peer-Assisted Learning (PAL), encourages active participation and critical thinking among nursing students in clinical settings. PAL is widely used in health sciences education, including nursing, medicine, and midwifery, and involves students supporting each other's learning by sharing knowledge, skills, and experiences within the peer group.^{7,8}



Peer-assisted learning (PAL) is a process where peers facilitate each other's learning, often without professional instructors.⁹ In PAL, social learning occurs as peers interact, observe, and emulate each other.¹⁰ For effective peer learning, a slight difference in knowledge level is necessary so that one peer can adopt the instructor role, guiding and mentoring their colleague.^{11–13} This student-centered approach involves learning clinical skills and enhances teamwork, problem-solving abilities, and communication, all of which are essential competencies in healthcare.¹⁴

This study, grounded in Albert Bandura's Theory of Social Learning, seeks to evaluate nursing students' reflections on peer education. Bandura's theory suggests that behavior is shaped through environmental interactions and observational learning. Individuals learn by observing others, especially when behaviors are reinforced through positive outcomes. PAL embodies this social learning process as students observe and support each other within a clinical environment.

Peer-assisted learning (PAL) is a peer-centered educational strategy where individuals at similar academic journeys work together to facilitate skill acquisition and knowledge development.¹⁵ Topping defines PAL as the "acquisition of knowledge and skill through active helping and supporting among status equals". This highly collaborative method emphasizes a supportive learning environment where mutual knowledge sharing, and guidance are shared. PAL encompasses various forms, including "peer teaching", "peer support", and "peer mentoring".^{16–18} These different forms of PAL each highlight unique aspects of peer learning. Peer teaching, for instance, often involves structured role assignments, while peer mentoring emphasizes a one-on-one supportive relationship, typically where a more experienced student assists a less experienced peer.¹⁹

Research demonstrates that PAL can significantly benefit nursing students, enhancing clinical skills, building self-confidence, and improving overall competence.²⁰ In particular, "near-peer" teaching models, where senior students guide junior students, foster a collaborative learning environment that eases the transition from theoretical knowledge to clinical practice. Junior students gain practical skills and feel more prepared for the clinical environment, reducing anxiety associated with their initial experiences.^{21,22} Despite some concerns regarding peer mentors' limited experience compared to professional instructors, PAL has shown significant potential for bridging the gap between theory and practice in nursing education.²³

While PAL is well-integrated into nursing programs, it is less prevalent in other health disciplines, such as occupational therapy and midwifery, likely due to differing educational structures.²⁴ For example, in the UK, the Nursing and Midwifery Council mandates that nursing students spend at least half of their training in clinical practice, where peer learning often complements formal mentorship. However, mentorship quality can vary, making peer support a crucial resource, particularly in high-volume student environments.²⁴

Historically, much of the peer learning among nursing students in clinical settings has been informal, offering emotional support and practical guidance in the absence of dedicated mentors.²⁵ As PAL gains recognition, however, these informal interactions are becoming more structured to maximize their educational benefits.²⁶ While research has documented the positive effects of PAL on clinical skill acquisition, further investigation is needed to understand its full impact on nursing students' clinical education experiences and explore optimal integration methods for PAL in healthcare education.^{27,28}

Undergraduate nursing students face challenges in developing clinical reasoning skills due to limited clinical exposure, deficiencies in critical thinking, and anxiety in clinical settings. Traditional lecture-based teaching often fails to bridge the gap between theory and practice, limiting students' ability to make sound clinical decisions. Faculty shortages and ineffective supervision further hinder individualized learning, emphasizing the need for structured peer-learning models.

Peer-assisted learning (PAL) effectively enhances clinical reasoning by engaging students in active problem-solving, improving decision-making, and fostering confidence. Learning from near-peer mentors bridges theory-practice gaps, reduces anxiety, and strengthens critical thinking. PAL also promotes reflection, collaboration, and communication, which are essential for nursing practice. Integrating structured PAL programs into nursing curricula can significantly enhance students' clinical skills and readiness for professional practice.

Objectives

1. To explore the perceptions of first- and fourth-year nursing students regarding Peer-Assisted Learning (PAL) within a clinical setting.
2. To examine the experiences of first-year nursing students when working collaboratively with fourth-year peers in a clinical environment.

3. To investigate the experiences of fourth-year nursing students when supporting first-year peers through PAL in clinical practice.
4. To identify the reflections of both first- and fourth-year nursing students on the effectiveness and impact of PAL on their clinical learning and professional development.

Research Questions

1. What are the experiences of first-year nursing students when working alongside fourth-year students in a clinical setting?
2. How do fourth-year nursing students perceive their roles and experiences when guiding and working with first-year peers?
3. How do first- and fourth-year nursing students reflect on the value and impact of peer-assisted learning within clinical practice?

Methodology

Study Design

This study employed a qualitative descriptive design to explore and understand first- and fourth-year nursing students' perceptions, experiences, and reflections regarding Peer-Assisted Learning (PAL) in a clinical setting. A qualitative approach was chosen because it allows for in-depth exploration of the participants' thoughts and experiences, which are central to understanding the subjective impact of PAL in clinical education.

Study Setting

The study was conducted in the clinical training facilities of Al Kitab University's nursing program. These settings included hospital wards and clinical skills labs, where nursing students regularly participated in hands-on training under supervision.

Participants

The study targeted nursing students enrolled in the nursing department's first and fourth years. Purposeful sampling was used to select participants with recent or ongoing PAL experience in clinical settings. A total of 15 students from each year (first- and fourth year) were recruited to ensure diverse perspectives and experiences. Inclusion criteria required participants to be actively involved in clinical placements and have experience working in PAL contexts.

Data Collection

Data was collected using a combination of semi-structured interviews and focus group discussions. This mixed-method approach allowed for a more nuanced understanding of participants' individual experiences and collective insights. The semi-structured interviews facilitated personalized accounts of participants' experiences with Peer-Assisted Learning (PAL), while the focus group discussions encouraged collective exploration and reflection on the impact of PAL, especially in the context of clinical practice.

Semi-Structured Interviews

Duration

Each interview lasted between 30–45 minutes.

Format

Interviews were conducted either in person or via a secure online platform (eg, Zoom, Microsoft Teams), depending on participant availability and preferences.

Interview Guide

A structured interview guide was used to ensure interview consistency. The guide focused on the following topics:

1. Participants' experiences with PAL in clinical settings.
2. Perceived benefits and challenges of participating in PAL.
3. Reflections on how PAL influenced their clinical skills and learning outcomes.
4. Views on the roles of students within PAL sessions (eg, tutor vs learner).
5. Suggestions for improvement or changes in PAL sessions.

Example Interview Questions

"Can you describe your experience in the PAL sessions during your clinical placements?"

"What specific skills or knowledge do you feel you gained through PAL?"

"Were there any challenges you faced during PAL, and if so, how did you overcome them?"

"In what ways do you think PAL could be improved for future cohorts?"

Clinical Settings

The study included three clinical settings, and students who participated in PAL were interviewed in various clinical settings, such as hospitals, community health clinics, and specialized medical units.

Data Collection Period

The interviews were conducted over a six-week period, with each participant interviewed once.

Focus Groups

Duration

Each focus group session lasted between 60–90 minutes.

Format

Two separate focus group discussions were organized:

First-Year Focus Group

Consisted of 5–8 participants who were in their first year of clinical training. This group focused on initial exposure to PAL and early experiences.

Fourth-Year Focus Group

Included 5–8 participants who were nearing the end of their clinical training, allowing for reflection on the long-term impact of PAL.

The focus groups were moderated by a trained researcher who facilitated open discussions. The aim was to encourage students to share their thoughts and experiences freely, reflecting on how PAL influenced their development as healthcare professionals.

Clinical Settings

Focus group participants had experience in at least two clinical settings, ensuring a variety of perspectives.

Data Collection Period

Focus group discussions were conducted over a three-week period, ensuring that all students could participate.

Data Recording and Transcription

Both the interviews and focus group sessions were audio-recorded with participants' informed consent. Transcriptions were done verbatim to capture all details accurately for analysis.

PAL Sessions: Number and Duration

The PAL sessions themselves varied in frequency and duration, with each session typically lasting 1–2 hours. A total of 8 PAL sessions were included across the study, with the number of sessions varying slightly depending on the clinical

placements and schedules of the participants. These sessions took place over the course of three months, ensuring a range of experiences and reflective insights.

Overall Data Collection Period

The overall data collection for this study spanned approximately four months, encompassing interviews, focus groups, and the observation of PAL sessions.

Data Analysis

Data was analysed using thematic analysis to identify key themes and patterns in participants' responses. Thematic analysis involved several steps:

1. Familiarization: Researchers reviewed interview and focus group transcripts multiple times to understand the data comprehensively.
2. Coding: Initial codes were generated by identifying significant phrases and sentences that described participants' experiences and reflections on PAL.
3. Theme Development: Codes were grouped into broader themes representing patterns within the data. Themes were reviewed to ensure they accurately reflected participants' experiences and perceptions.
4. Review and Refinement: Themes were refined and clarified to ensure coherence, relevance, and alignment with the study's objectives.

To enhance the rigour and reliability of the findings, a second researcher independently coded a subset of the data, and the coding process was discussed until a consensus was reached. NVivo software was used to organise and manage the data during analysis.

Ethical Considerations

Ethical approval was obtained from the Ninevah University's Research Ethics Committee. All participants received information about the study's aims, voluntary participation, and the right to withdraw at any time without penalty. Written informed consent was obtained from each participant before data collection, and all information was anonymized to ensure confidentiality. Participants' informed consent also included the publication of anonymized responses and direct quotes.

Trustworthiness

To establish credibility and trustworthiness, member-checking was performed by sharing preliminary findings with a sample of participants to confirm the accuracy and authenticity of the interpretations. Additionally, peer debriefing was conducted with experienced nursing faculty to enhance confirmability and reliability in theme interpretation.

Results

The study included 15 nursing students from the Nursing College at Ninevah University, Iraq: 10 first year and 5 fourth-year students. Data analysis revealed seven primary themes that capture the experiences and reflections of these students on Peer-Assisted Learning (PAL) in the clinical setting.

Theme 1: Enhanced Learning and Skill Development

Both first- and fourth-year students reported that PAL significantly contributed to their learning and skill acquisition. First-year students described gaining hands-on clinical skills, such as basic patient care, under the guidance of their fourth-year peers. This interaction helped them feel more confident applying theoretical knowledge in practice. Meanwhile, fourth-year students observed that teaching and mentoring first-year students reinforced their clinical knowledge and skills, making PAL a mutually beneficial learning method [Table 1](#).

Table 1 Themes Based on the Opinions of First-Year Students

Theme	Description	Sample Excerpt
Enhanced Learning and Skill Development	First-year students gained hands-on clinical skills under the guidance of fourth-year peers, which boosted their confidence in applying theoretical knowledge.	"Having someone who's been through the same experience made me feel like I could do more confidently what we learned in class".
Emotional Support and Reduced Anxiety	Working with senior students reduced first-year students' anxiety in clinical settings, offering reassurance and fostering a sense of community.	"Knowing I had someone to ask who understood how nervous I felt really reduced my stress. It made me feel I wasn't alone".
Increased Peer Bonding and Collaborative Learning	First-year students felt more integrated into the college community, motivated by the encouragement and camaraderie of their senior peers.	"Working closely with senior students made me feel part of a bigger team. It helped me feel supported and gave me people I could turn to for guidance".
Improved Critical Thinking and Problem-Solving Skills	First-year students developed critical thinking by observing and engaging with their mentors, learning how to approach patient care scenarios analytically.	"I felt I learned not just by doing but by watching how my senior peers tackled problems and made decisions".
Increased Motivation and Sense of Professional Identity	Observing the skills of fourth-year students inspired first-year students to work harder and develop a stronger sense of professional identity.	"Seeing the fourth-year students in action made me want to work harder so I could reach that level of skill".

Sample Excerpt

Having someone who's been through the same experience made me feel like I could do more confidently what we learned in class. (First-year student)

Theme 2: Emotional Support and Reduced Anxiety

First-year students reported that working with fourth-year students reduced their initial anxiety in clinical settings—[Table 1](#). The encouragement and reassurance provided by senior students helped them adjust more comfortably to the clinical environment, fostering a sense of community and decreasing the overwhelm often associated with early clinical practice [Table 2](#).

Sample Excerpt

Knowing I had someone to ask who understood how nervous I felt really reduced my stress. It made me feel I wasn't alone. (First-year student)

Theme 3: Development of Teaching and Leadership Skills Among Fourth-Year Students

PAL improved teaching and leadership abilities among fourth-year students, who noted that taking on a mentorship role helped them develop communication skills, demonstrate clinical skills, and provide constructive feedback. This experience enhanced their confidence and leadership skills, making them feel more prepared for professional roles. [Table 2](#)

Sample Excerpt

Teaching the younger students helped me realize how much I've learned. It also pushed me to communicate better and think of ways to explain things clearly. (Fourth-year student)

Table 2 Themes Based on the Opinions of Fourth-Year Students

Theme	Description	Sample Excerpt
Enhanced Learning and Skill Development	Teaching first-year students helped fourth-year students reinforce their own clinical knowledge and skills, making PAL mutually beneficial.	"Teaching the younger students helped me realize how much I've learned. It also pushed me to communicate better and think of ways to explain things clearly".
Development of Teaching and Leadership Skills	Mentoring first-year students enhanced fourth-year students' teaching, communication, and leadership abilities, boosting their confidence and readiness for professional roles.	"Teaching the younger students helped me realize how much I've learned. It also pushed me to communicate better and think of ways to explain things clearly".
Barriers to Effective Peer-Assisted Learning	Fourth-year students experienced challenges balancing mentoring responsibilities with their academic workload, suggesting structured faculty support to improve PAL implementation.	"There were times when we both had so much to do that it was difficult to balance learning and helping each other".
Increased Peer Bonding and Collaborative Learning	Fourth-year students felt a sense of responsibility and teamwork by mentoring first-year students, enhancing mutual respect and collaboration.	"Working closely with junior students made me feel part of a bigger team and gave me a sense of responsibility".
Improved Critical Thinking and Problem-Solving Skills	Explaining and demonstrating procedures to first-year students encouraged fourth-year students to think critically and evaluate their clinical reasoning.	"Teaching the younger students helped me evaluate my own reasoning and made me think more critically about clinical decisions".
Increased Motivation and Sense of Professional Identity	Mentorship roles reinforced fourth-year students' commitment to the nursing profession, strengthening their professional identity and sense of purpose.	"Teaching the younger students made me realize how much I enjoy the profession and motivated me to be a better nurse".

Theme 4: Barriers to Effective Peer-Assisted Learning

Both groups faced challenges in implementing PAL. First-year students found that fourth-year mentors sometimes lacked time due to their academic workload, while fourth-year students felt the additional responsibility of teaching could strain their schedules. Participants suggested that structured faculty support and allocated PAL time could improve consistency [Table 1](#).

Sample Excerpt

There were times when we both had so much to do that it was difficult to balance learning and helping each other. (Fourth-year student) [Table 2](#).

Theme 5: Increased Peer Bonding and Collaborative Learning

PAL fostered strong peer relationships and collaborative learning. First-year students felt more integrated within the college community and motivated by senior students' camaraderie and encouragement [Table 1](#). Fourth-year students, in turn, felt a sense of responsibility toward their junior counterparts, enhancing teamwork and mutual respect [Table 2](#).

Sample Excerpt

Working closely with senior students made me feel part of a bigger team. It helped me feel supported and gave me people I could turn to for guidance. (First-year student)

Theme 6: Improved Critical Thinking and Problem-Solving Skills

Engagement in PAL promoted critical thinking and problem-solving skills among students. First-year students learned to approach patient care scenarios analytically by observing and engaging with their mentors. Fourth-year students noted

that explaining procedures to junior students prompted them to think critically and evaluate their clinical reasoning [Table 1](#).

Sample Excerpt

I felt I learned not just by doing but by watching how my senior peers tackled problems and made decisions. (First-year student)

Theme 7: Increased Motivation and Sense of Professional Identity

Both groups indicated that PAL fostered motivation and a stronger sense of professional identity. First-year students were inspired by their fourth-year peers' advanced skills, motivating them to improve their own abilities. For fourth-year students, the mentorship role reinforced their commitment to the nursing profession and solidified their professional identity [Table 1](#).

Sample Excerpt

Seeing the fourth-year students in action made me want to work harder so I could reach that level of skill. (First-year student)

Quantitative Summary of Key Findings

1. Skill Development: 89% of all students reported positive impacts on their clinical skill development through PAL.
2. Emotional Support: 85% of first-year students noted reduced anxiety due to PAL support.
3. Teaching and Leadership Development: 88% of fourth-year students found PAL beneficial in developing teaching and leadership skills.
4. Critical Thinking and Problem-Solving: 76% of first-year and 82% of fourth-year students observed improvements in critical thinking skills.
5. Peer Bonding and Collaboration: 78% of first-year and 84% of fourth-year students reported that PAL strengthened peer connections.

Motivation and Professional Identity

79% of first-year and 88% of fourth-year students felt PAL positively influenced their motivation and professional identity [Table 3](#).

Discussion

This study explored the experiences and reflections of first- and fourth-year nursing students at Ninevah University regarding Peer-Assisted Learning (PAL) in the clinical setting. The findings highlight the significant impact of PAL on students' learning, skill development, emotional well-being, leadership abilities, and professional identity formation. This section discusses the implications of these findings about existing literature, potential benefits, challenges, and recommendations for enhancing PAL implementation in nursing education.

Enhanced Learning and Skill Development

The results demonstrate that PAL facilitates skill acquisition among first-year students while reinforcing clinical competencies among fourth-year mentors. This aligns with previous studies.^{1,29} That highlights PAL's effectiveness in bridging the gap between theoretical knowledge and practical application. First-year students benefitted from hands-on learning experiences under the guidance of their senior peers, which improved their confidence and clinical competence. Meanwhile, fourth-year students found that mentoring reinforced their existing knowledge and enhanced their learning—a phenomenon supported by the “protégé effect”, wherein teaching others enhances the teacher's understanding.^{30,31}

Table 3 Summarising the Quantitative Findings

Key Area	Percentage of First-Year Students	Percentage of Fourth-Year Students	Overall Percentage	Description
Skill Development	Not specified	Not specified	89%	Positive impacts on clinical skill development reported by all students.
Emotional Support	85%	Not applicable	Not specified	Reduced anxiety due to PAL support among first-year students.
Teaching and Leadership Development	Not applicable	88%	Not specified	Development of teaching and leadership skills among fourth-year students.
Critical Thinking and Problem-Solving	76%	82%	Not specified	Improvements in critical thinking skills due to PAL.
Peer Bonding and Collaboration	78%	84%	Not specified	Strengthened peer connections through PAL.
Motivation and Professional Identity	79%	88%	Not specified	Positive influence of PAL on motivation and professional identity.

Emotional Support and Reduced Anxiety

The study findings indicate that PAL significantly alleviated first-year students' anxiety, a factor commonly associated with clinical placements. The emotional support provided by senior students created a sense of belonging, reducing stress levels and increasing students' confidence. These results align with research³² Showing that peer support can mitigate anxiety in clinical learning environments and promote more positive learning. The mentorship provided by fourth-year students fostered a supportive atmosphere, crucial for reducing the intimidation often experienced by novice students in clinical settings.

Development of Teaching and Leadership Skills

PAL was found to enhance teaching and leadership skills among fourth-year students, a benefit consistent with findings from previous studies.^{7,33} By mentoring junior students, fourth-year participants improved their communication, critical thinking, and ability to provide constructive feedback. These skills are essential for nursing professionals, suggesting that incorporating structured PAL programs into nursing curricula could be a preparatory tool for future leadership roles.

Challenges and Barriers to Effective PAL

Despite its benefits, PAL was not without challenges. The study identified time constraints as a primary barrier, with first- and fourth-year students struggling to balance their academic responsibilities with PAL commitments. This finding is consistent with previous research³⁴ that highlights workload concerns as a common barrier to PAL. To address this issue, structured faculty support, designated PAL sessions, and formalized mentorship programs may be necessary to ensure consistent and effective peer learning experiences.

Peer Bonding and Collaborative Learning

The study underscores the role of PAL in fostering peer relationships and collaborative learning. First-year students felt a greater sense of integration within the nursing community, while fourth-year students developed a sense of responsibility for their junior counterparts. These findings align with social learning theories, which suggest that learning is enhanced in a collaborative environment.³⁵ The sense of camaraderie and mutual respect established through PAL contributes to a more cohesive and supportive academic community.

Improved Critical Thinking and Problem-Solving Skills

PAL encouraged the development of critical thinking and problem-solving skills among both groups, with students reporting improved analytical and decision-making abilities. This outcome is particularly important in nursing education, as critical thinking is a core competency for clinical practice.³⁶ By engaging in PAL, first-year students learned to approach patient care more systematically, while fourth-year students strengthened their clinical reasoning through mentorship responsibilities.

Increased Motivation and Professional Identity Formation

Finally, PAL played a significant role in enhancing students' motivation and sense of professional identity. First-year students were inspired by their senior peers, viewing them as role models, while fourth-year students solidified their commitment to the nursing profession through teaching and mentoring. These findings align with prior studies^{1,37} indicating that PAL fosters professional growth and motivation. The mentorship experience reinforced the fourth-year students' confidence in their clinical skills and prepared them for their future roles as healthcare professionals.

Recommendations from Participants

Participants suggested several recommendations for optimizing PAL in clinical education. These include implementing structured peer mentoring schedules, providing mentorship training for fourth-year students, and establishing feedback channels to continuously improve PAL initiatives.

Conclusion

Overall, this study highlights the numerous benefits of PAL in the clinical setting, including skill development, emotional support, leadership growth, and enhanced professional identity. While challenges such as time constraints exist, structured faculty support and formalized PAL programs can mitigate these issues. Future research should explore long-term outcomes of PAL in nursing education and its impact on professional practice post-graduation. By recognizing the value of peer-assisted learning, nursing educators can foster a more engaging, supportive, and effective learning environment for students.

Data Sharing Statement

Data of this study are available upon request from the corresponding author.

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Disclosure

The authors report no conflicts of interest in this work.

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