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Undergraduate Medical Students' Experiences of Peer-Assisted Learning (PAL) During Clinical Placement in the Department of Medicine

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Abstract

Background: *Peer-Assisted Learning (PAL) has become a valuable pedagogical tool in medical education, emphasizing active participation, teamwork, and reflection. Despite its integration into modern curricula, the dynamics of PAL during clinical placements remain underexplored in many contexts, especially in Asian medical schools.*

Aim: This study explored undergraduate medical students' experiences of peer learning during their clinical placements in the Department of Medicine at a military medical institution.

Methods: *A descriptive cross-sectional study was conducted in 2016 among 166 undergraduate medical students (Third Year, Final Part I, and Final Part II) undertaking clinical placements. Data were collected using a structured proforma administered after informed consent. Responses were anonymized and analyzed quantitatively and qualitatively to explore perceptions, benefits, and barriers to PAL.*

Results: *Specialists were perceived as the most significant source of learning (57.8%), while peers ranked third (12.7%). Peer learning occurred most frequently in teaching hospital wards (80.2%) and primarily involved observing history-taking and physical examinations (49.4%). Students engaged in PAL at least once weekly. Reflection opportunities (28.9%) were the primary motivator for participation, whereas the risk of strained friendships (32.5%) emerged as a major barrier. Students valued patient information sharing and constructive peer feedback as enriching their learning process.*

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Conclusion: *Although PAL was perceived as less significant compared to faculty-led teaching, it played a valuable supplementary role in fostering reflection and feedback during clinical placements. Structured training in peer teaching, assessment, and feedback is essential to maximize PAL's potential and overcome interpersonal challenges. Future curricular designs should integrate formal PAL sessions to optimize learning outcomes and prepare students for collaborative practice.*

Keywords: *Peer-Assisted Learning, Undergraduate Medical Education, Clinical Placements, Reflection, Medical Students*

Introduction

The transformation of medical education over the past two decades has been characterized by a shift from traditional didactic teaching to more student-centered, active learning approaches. Among these, Peer-Assisted Learning (PAL) has gained significant traction as both an instructional and developmental strategy in undergraduate medical curricula worldwide (Secomb, 2020). PAL broadly refers to situations in which students of similar academic standing engage in teaching and learning activities with each other, either formally or informally (Topping, 2018). This process leverages the concepts of cognitive congruence and social congruence, where learners benefit from explanations by peers who are closer to their own level of understanding (Ten Cate & Durning, 2020).

PAL's advantages extend beyond content mastery. It fosters self-directed learning, communication skills, evaluative judgment, and the ability to function effectively within a team—attributes critical for competent medical practitioners (Agius et al., 2021). PAL also encourages reflective practice and provides a psychologically safe environment where students can ask questions and make mistakes without fear of formal evaluation (Abdel Meguid & Collins, 2021).

Within clinical education, PAL plays a particularly important role. Medical students often face challenges in bridging theoretical knowledge with clinical practice. Peer learning can ease this transition, allowing learners to observe, practice, and receive feedback in real-world contexts (Tai et al., 2021). By observing peers conduct history-taking or examinations, students reinforce their understanding and develop confidence. Moreover, the reciprocity of teaching and learning among peers' nurtures accountability and deepens comprehension (Herrmann-Werner et al., 2017).

However, despite these advantages, PAL is not without challenges. Previous studies have highlighted issues such as variability in teaching quality, insufficient training in peer teaching, and concerns about the accuracy of information shared among peers (Khalloufi et al., 2022). Additionally, interpersonal dynamics can complicate PAL, with some students reporting discomfort in critiquing or being critiqued by friends (Miller et al., 2019).

The context in which PAL occurs significantly influences its effectiveness. Most of the literature originates from Western institutions, where PAL has been systematically incorporated into curricula. By contrast, in many Asian medical schools, including Myanmar, PAL often arises informally during ward rotations, tutorials, and group discussions rather than through structured programs (Naing et al., 2016). This gap underscores the importance of context-specific research to understand how students perceive and engage in PAL.

The current study sought to explore the experiences of undergraduate medical students regarding peer learning during clinical placements in the Department of Medicine at the Defence Services Medical Academy. By examining students' perspectives, frequency of engagement, perceived benefits, and barriers, this research contributes to the broader discourse on PAL in clinical education. Understanding these experiences can inform curriculum design, highlighting areas where structured peer learning interventions could enhance clinical training outcomes.

Aim of the study: To explore undergraduate medical students' experiences of peer learning during clinical placements in the Department of Medicine, with a focus on perceived benefits, barriers, and implications for medical education.

Literature Review

Theoretical Foundations of Peer-Assisted Learning: Peer-Assisted Learning (PAL) is grounded in several educational theories. Vygotsky's concept of the Zone of Proximal Development (ZPD) posits that learners benefit most when guided by someone just slightly more advanced in knowledge or skill (Vygotsky, 1978). PAL aligns with this idea, as peers often share a closer cognitive and social background compared to faculty, fostering a relatable and supportive learning environment.

Global Adoption of PAL in Medical Education: PAL has become increasingly prominent in medical schools worldwide. In the UK, it has been institutionalized through near-peer teaching programs, where senior students tutor juniors in anatomy, clinical skills, and exam preparation (Dandavino et al., 2007). Similarly, North American medical schools incorporate PAL within problem-based learning (PBL) groups and clinical clerkships, enhancing teamwork and reflective learning (Soriano et al., 2010).

Reported Benefits of PAL: Evidence consistently shows that PAL provides multiple academic and personal benefits. Students acting as peer teachers consolidate their knowledge, develop confidence, and acquire teaching skills, which are increasingly recognized as core competencies for medical graduates (Secomb, 2020). For learners, PAL promotes active participation, reduces anxiety, and fosters collaborative problem-solving (Agius et al., 2021).

Challenges and Barriers to PAL: Despite these advantages, several challenges persist. Students may question the credibility of peer teaching, especially when compared to instruction from experienced clinicians (Miller et al., 2019). The strain on friendships caused by critical feedback or perceived competition has also been noted (Ross & Cameron, 2019). Furthermore, without formal training, peers may provide inaccurate or incomplete feedback, potentially reinforcing misconceptions (Khalloufi et al., 2022).

PAL in Clinical Placements: The clinical environment offers unique opportunities and challenges for PAL. On hospital wards, students often observe each other's patient interactions, share notes, and exchange tips for examinations. This informal PAL supplements formal bedside teaching. A study in Germany found

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that clinical PAL enhanced teamwork and boosted students' confidence in patient care (Herrmann-Werner et al., 2017). However, clinical pressures, limited time, and inconsistent opportunities for structured peer interact.

Gaps in Current Research: While PAL has been extensively studied in Western contexts, literature from Asian medical schools remains limited. Many existing studies rely on formal PAL interventions, such as peer-tutoring programs, whereas informal peer learning during clinical placements is underexplored. Furthermore, little attention has been given to the emotional and relational dimensions of PAL, particularly the balance between constructive feedback and maintaining peer relationships.

Methodology

Study Design: This research employed a descriptive cross-sectional design to investigate undergraduate medical students' experiences of peer learning during their clinical placements in the Department of Medicine. A cross-sectional approach was chosen as it allowed for the collection of data at a single point in time, providing an overview of student perceptions and behaviors related to PAL.

Study Setting and Participants: The study was conducted at the Defence Services Medical Academy (DSMA), Myanmar, during the 2016 academic year. The Department of Medicine was selected as the setting because it represents a core clinical rotation where students are actively involved in patient care and peer interaction. A total of 166 medical students participated in the study, spanning three cohorts: Third-year students, Final Part I students, and Final Part II students. Participation was voluntary, and students were informed.

Data Collection Tool: A structured proforma (questionnaire) was used to collect data. The proforma was developed after reviewing relevant literature and tailored to the local clinical context. It included both closed-ended and open-ended questions designed to assess: sources of learning during clinical placements, frequency and setting of peer learning activities, types of activities conducted, motivating factors for engaging in PAL, and perceived barriers to PAL.

Procedure: The purpose of the study and instructions for completing the proforma were explained to participants. The questionnaires were filled out anonymously to reduce response bias and encourage honest reporting. Data collection occurred during clinical placements, ensuring students reflected on their immediate experiences.

Data Analysis: Quantitative data were coded and analyzed descriptively using percentages and frequencies. Results were presented in tabular and graphical formats for clarity. Qualitative comments from open-ended questions were reviewed thematically to provide additional insight into students' perceptions of PAL.

Ethical Considerations: Ethical approval was obtained from the institutional review board of the Defence Services Medical Academy. Participation was voluntary, and informed consent was secured from all respondents. Anonymity and confidentiality were maintained throughout the study.

Limitations of the Methodology: This study relied on self-reported data, which may be influenced by recall bias or social desirability bias. Additionally, the participants had not been formally trained in peer learning techniques, which may have limited the depth of their experiences. Despite these limitations, the study provides valuable insights into the informal dynamics of PAL during clinical placements in Myanmar.

Results

A total of 166 undergraduate medical students completed the study questionnaire. The findings are summarized below.

Sources of Learning: Students identified multiple sources of learning during clinical placements. Specialists were perceived as the most important source (57.8%), followed by patients (18.7%). Peers ranked third at 12.7%, highlighting that while PAL was valued, it remained secondary to faculty-led teaching.

Table 1. Sources of learning

Source of Learning	Percentage (%)
Specialists (faculty)	57.8
Patients	18.7
Peers (PAL)	12.7
Books/lecture notes	6.4
Others	4.4

Setting and Frequency of PAL: The majority of PAL activities occurred in the wards of teaching hospitals (80.2%), followed by tutorial rooms and outpatient clinics. Most students reported engaging in PAL at least once per week, with some doing so more frequently during case-based group work.

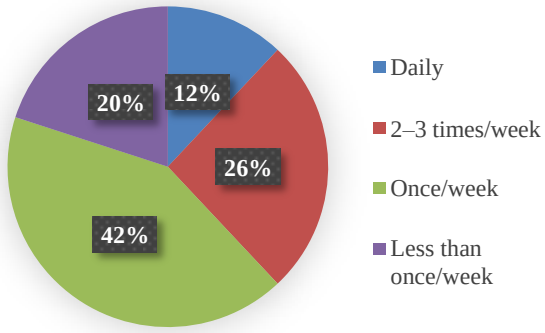

Figure 1. Frequency of Peer-Assisted Learning

Types of Activities: Students reported a range of peer learning activities. The most common were observing history-taking and physical examination (49.4%), followed by discussion of patient cases, sharing lecture notes, and informal bedside teaching.

Table 2. Activity of Learning

Activity	Percentage (%)
History-taking/physical examination	49.4
Case discussions	28.3
Sharing lecture notes/resources	14.5
Peer feedback (informal)	7.8

Motivators and Barriers: Reflection opportunities were cited as the primary motivator (28.9%) for engaging in PAL. Conversely, the most significant barrier was strain on friendships (32.5%), with some students expressing discomfort in critiquing peers or being critiqued.

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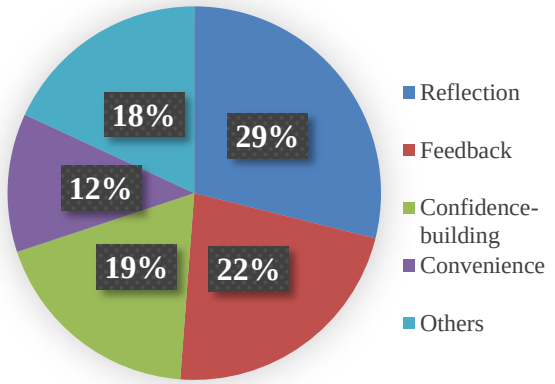

Figure 2. Frequency Distribution in Motivators of PAL

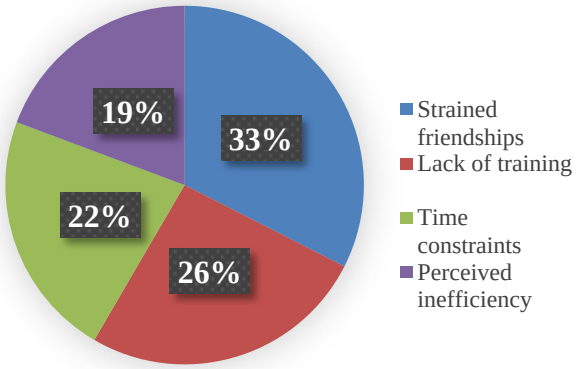

Figure 3. Frequency Distribution in Barriers of PAL

Discussion

This study explored undergraduate medical students' experiences of peer learning during clinical placements in the Department of Medicine. The results demonstrate that while PAL was not the primary mode of learning, it provided valuable opportunities for reflection, feedback, and skill reinforcement.

PAL as a Supplementary Learning Source: The finding that specialists were the most significant learning source (57.8%) aligns with previous studies emphasizing the central role of faculty in medical education (Khalloufi et al., 2022). However, peers accounted for 12.7% of learning, underscoring their role as a supplementary, yet meaningful, educational resource. This reflects global trends where PAL is recognized not as a replacement for faculty-led instruction but as a complementary strategy (Secomb, 2020).

Clinical PAL Activities: The predominance of PAL in ward settings (80.2%) highlights the importance of clinical environments as fertile grounds for peer collaboration. Observing history-taking and physical examination (49.4%) as the most common activity mirrors findings from Herrmann-Werner et al. (2017). Such activities are consistent with Vygotsky's ZPD framework, as students scaffold their learning by observing peers perform tasks just beyond their own capability.

Reflection and Feedback: Reflection was a key motivator for PAL, reported by 28.9% of students. This aligns with Tai et al. (2021), who emphasized the reflective nature of PAL in fostering evaluative judgment and self-awareness. Peer feedback was also valued, though inconsistently practiced. Without formal training, the quality of peer feedback may be limited, reducing its educational potential.

Barriers to PAL: A significant barrier identified was the strain on friendships (32.5%), consistent with studies noting interpersonal challenges of PAL (Miller et al., 2019). Students reported reluctance to critique peers due to fear of offending them. This underscores the need for explicit training in feedback delivery and professionalism. Other barriers, such as lack of training and time constraints, reflect systemic challenges. Structured PAL initiatives with faculty oversight could mitigate these issues.

Implications for Curriculum Development: The findings suggest that PAL in Myanmar remains informal and student-driven, limiting its potential impact. Formalizing PAL through structured peer teaching, peer assessment workshops, and faculty-guided sessions could enhance its effectiveness. Embedding PAL within competency-based frameworks may also ensure it supports domains like teamwork, communication, and professionalism.

Comparison with International Literature: These findings align with global literature but also highlight contextual differences. Western institutions often report higher engagement with PAL due to formalization, whereas in Myanmar, PAL is supplementary and informal. Nonetheless, the reflective and collaborative benefits remain universal.

Limitations and Future Research: This study's limitations include reliance on self-reported data and lack of qualitative depth. Future research should adopt mixed methods and evaluate structured PAL interventions in local contexts.

Conclusion

This study explored undergraduate medical students' experiences of peer learning during clinical placements in the Department of Medicine at the Defence Services Medical Academy. Although specialists were the primary source of learning, peers played a meaningful supplementary role, particularly in fostering reflection, feedback, and skill reinforcement.

The findings highlight that PAL most frequently occurred in ward settings, focusing on history-taking and physical examination. Reflection was the most valued outcome, while interpersonal challenges, particularly strained friendships, were the most significant barrier. These results underscore the dual potential of PAL as a valuable educational tool when structured effectively, but one that can also pose challenges if left informal and unsupported.

PAL holds significant promise for enriching undergraduate medical education in Myanmar and beyond. By formalizing and supporting peer learning within clinical curricula, medical schools can enhance reflective practice, teamwork, and professional growth, ultimately preparing students for collaborative, patient-centered healthcare.

Recommendations

1. Introduce structured PAL training within the curriculum, focusing on teaching, assessment, and feedback skills.
2. Normalize constructive peer feedback by integrating it into clinical teaching sessions.
3. Encourage faculty facilitation of PAL, ensuring accuracy of knowledge while promoting collaboration.
4. Expand research on PAL in Asian and low-resource contexts.

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