

Peer-Assisted Learning Versus Faculty-Led Teaching of Interviewing Skills: A Comparative Study

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ABSTRACT

Objectives: To assess the impact of peer-assisted learning (PAL) on students' proficiency in patient interviewing skills and to explore medical students' perception on peer tutors in educational setting.

Methods: A cross-sectional observational study was performed in the College of Medicine, Hawler Medical University, Erbil, Iraq between September 2021 and November 2021. The participants included second year medical students who were attending the Integrated Basic Sciences (IBS) module. The peer tutors were chosen from a group of sixth year medical students who had completed an intensive 18-hour communication skills course. The summative video assessment marks of study participants and their perceptions on the process were compared between the faculty-led group and the peer-assisted learning (PAL) group.

Results: Peer-assisted learning group ($n = 83$) had significantly higher mean (SD) scores compared to those in the faculty-led group ($n = 92$), [74.6 (8.1) vs 70.4 (7.1), $P < 0.001$]. Encouraging feedback was received from students regarding the PAL sessions with most positive feedback being from ease in asking questions.

Conclusion: Peer-assisted learning improved students' performance in patient interviewing skills and fostered positive perceptions of the learning experience.

Keywords: Communication skill training, Peer teaching, Medical education

INTRODUCTION

Peer-assisted learning (PAL) is an established teaching and learning method in medical education enabling senior students to support their junior peers. It is commonly used for the training of clinical skills such as communication, physical examination, technical procedures, and resuscitation skills [1,2]. Within the domain of curriculum development, PAL is increasingly being recognized as a means to support undergraduate healthcare students in developing teaching skills. It has gained more attention since the General Medical Council emphasized the need for medical undergraduates to demonstrate appropriate teaching skills [3]. PAL is primarily based on the principles of social constructivism, emphasizing collaborative interaction and group learning [4].

The PAL approach fosters bilateral, reciprocal learning experiences that benefit all participants by promoting active learner engagement [5]. Numerous studies have reported high satisfaction levels with PAL, and tutees highlight reduced anxiety while receiving honest, realistic, and helpful feedback within PAL contexts [6]. In medical education, PAL is increasingly utilized as a valuable asset in response to limitation in resources, prompting educators to explore new cost-effective educational environments [7].

Although, PAL has been evaluated extensively for training of clinical skills, there is a notable scarcity of studies specifically concentrating on PAL in the training of communication skills. Shortage of faculty members proficient in teaching communication skills has necessitated implementing peer-tutoring initiatives which offer a possible solution for effective teaching and enhancing communication skills among medical students, especially

in resource-limited settings. Given the importance of communication skills, it is essential to explore and examine the application and benefits of PAL in developing these skills among medical students.

This study aims to assess the influence of PAL on the students' patient interviewing skills during their summative assessment and its effectiveness compared to the conventional faculty-led instructional approach. Furthermore, the study explores the medical undergraduates' perceptions regarding the involvement of peer tutors.

METHODS

A cross-sectional observational study was conducted in the College of Medicine, Hawler Medical University, Iraq, between September 2021 and November 2021. This study was approved by the ethics committee of the College of Medicine. Verbal informed consent was obtained from each student, and participation was optional. Respondents and their parents were assured that their responses would be kept confidential and used only for research purposes. Anonymity was ensured by not mentioning their names.

The study focused on second-year medical students enrolled in the Integrated Basic Science (IBS) module. These students were chosen because the IBS curriculum integrates communication skills training. Participants who were absent on the day of the summative assessment or did not submit their video recordings on patient interviewing were excluded from the data analysis. Peer tutors were chosen from a group of sixth-year medical students who had completed an intensive 18-hour communication skills course and had a notable level of interest, engagement and excellence among their peers.

To introduce the concept of PAL, one of the authors delivered a concise presentation at the end of the 18-hour course highlighting its advantages and its potential to enhance the learning process for both tutors and tutees. Subsequently, sixth-year students were given an opportunity to become tutors in a communication skill session for the second-year students after a 2-week period. Six of the interested students volunteered to participate as tutors in the training of second-year students.

A three-hour training session was arranged for these six peer tutors. During this session, they were provided with a checklist outlining the communication skills they needed to facilitate in the second-year students' learning. These skills included helping second-year students build relationships with patients by acknowledging and appreciating their ideas and feelings, actively exploring patients' beliefs, worries, and expectations, applying verbal and non-verbal skills of attentive listening with simulated patients, and using open-ended questions to inquire about patients' complaints.

Additionally, each student had the opportunity to role-play as a tutor for the other students. They were assessed by the faculty based on several criteria, including their ability to clarify the learning outcomes of the planned session for second-year students, their use of body language for effective communication with tutees (e.g., smiling, nodding, leaning forward), their skill in being non-judgmental by accepting tutees' ideas and focusing on giving positive feedback, their application of skills in using open-ended questions and reflective

listening to encourage tutees to actively participate in discussions, and their ability to ask tutees to self-reflect on their own performance and were subsequently assigned the role of tutors for second-year medical students.

The second-year medical students were divided into six groups (A, B, C, D, E, and F), each consisting of approximately 30 students. Groups A, D, and F were taught by student tutors, while groups B, C, and E were taught by faculty members (randomized using a simple random table in an Excel program). The subject for instruction was the facilitation of small group communication skills sessions, focusing on the exploration of the patient's perspective within a patient-centered interviewing method, utilizing role-play models. In the student-led groups (A, D, and F), the session was facilitated by two student tutors, while in the faculty-led groups (B, C, and E), a single faculty staff member was responsible for teaching.

The primary outcome was the summative assessment of second-year medical students. To evaluate the skills acquired during the study, students were asked to record a video demonstrating their ability to explore the patient's perspective and respond empathically during a simulated patient history-taking session. These videos were assessed by faculty teachers using a checklist (**Web Table I**). The study's secondary outcome involved assessing students' perceptions immediately post-session through an online questionnaire. This questionnaire, comprising ten questions, utilized a five-point Likert scale ranging from "strongly disagree" to "strongly agree." These questions were designed to explore themes such as tutor engagement and interaction, student comfort, and the effectiveness of tutor skills and feedback.

Statistical analysis: Statistical Package for Social Science (version 26) was used for statistical analysis. Frequencies and percentages were used for data presentation. Unpaired *t* test was used to compare the mean (SD) score of students in peer-assisted and faculty-led groups. Kruskal-Wallis test was used to differentiate between mean ranks of scores among peer-assisted subgroups and faculty-led subgroups. $P < 0.05$ was considered statistically significant.

RESULTS

Of the 183 second year students, 91 (49.7%) females and 92 (50.3%) males, who were invited to participate in the study, eight students were excluded as they were absent on the day of summative assessment ($n = 5$) or did not submit their video record ($n = 3$). Among the remaining 175 students only 100 (57.14%) responded to the perception questionnaire; 51 (51%) and 49 (49%) students from peer-assisted group and faculty-led group, respectively.

The videos of 175 students were assessed by faculty teachers who provided feedback and evaluated the students' performance using a checklist (**Web Table I**) and revealed that all students achieved passing level. However, statistically significant higher mean (SD) score was observed for students enrolled in the peer-assisted group than for those in the faculty-led group; 74.6 (8.16) and 70.48 (7.11) respectively, $P < 0.001$.

The analysis of responses from the students taught by peer tutors ($n = 51$) revealed encouraging feedback regarding the PAL sessions. A substantial proportion of students expressed agreement that their tutors effectively encouraged their participation (72.5%) In terms of tutor communication, approximately two-thirds (62.7%) of

students affirmed the provision of clear explanations. The comfort level for asking questions was notably high, with 72.5% of students reporting ease in posing queries. Moreover, 66.7% of students acknowledged that the peer tutors effectively stimulated their critical thinking during the sessions. A comprehensive breakdown of student responses is presented in **Table I**.

For the group taught by faculty tutors ($n = 49$), the results exhibited a nuanced perspective. Approximately half of the students concurred that the tutors encouraged their participation (55.1%). Similarly, nearly half of the students acknowledged that the tutor provided clear explanations (51%) and effectively prompted their thinking (49%). However, only one-third of students endorsed the notion of recommending similar sessions in the future (36.7%). Detailed insights into faculty-tutored sessions are outlined in **Table I**.

Table II presents a comparison between student responses in the peer-assisted group and the faculty-led group, shedding light on the nuances of their perceptions. Specifically, statistically significant differences were observed in mean scores for Q4, Q7, Q8, and Q9 ($P = 0.049$, $P = 0.006$, $P = 0.035$, respectively). Among the statements, Q4 pertains to students' comfort in asking questions, Q7 assesses their willingness to recommend similar sessions in the future, Q8 evaluates tutor's presentation skills, and Q9 measures the extent to which tutors provided constructive feedback. The mean rank difference was not significant between three peer led subgroups (A, D, F) (**Web Table II**), similarly between three faculty led subgroups (B, C, E) in regards to questions (**Web Table III**).

DISCUSSION

The main objective of this study was to explore the impact of PAL on patient interviewing skills in summative assessment of students and compare it with the faculty-led instruction group. The study's findings indicated that students in the PAL group achieved significantly higher average scores compared to those in the faculty-led group. This finding broadly supports the work of other studies conducted in both developing and developed countries, which have linked PAL with students' performance in summative assessments. In a randomized controlled trial and quasi-experimental design study, the mean final scores significantly improved in the intervention group with PAL compared to expert-assisted learning [8,9]. These studies suggested that PAL could replace expert guided instruction in teaching undergraduate students, emphasizing its greatest value during the clinical stages of training and for practical skills [10].

The observed improvement in student mean scores in video assessment in the PAL group could be attributed to the effectiveness of the peer teaching model in promoting active learning and influencing deep learning among medical students [11]. Additionally, PAL facilitates the development of strong peer-tutor relationships and equips peer-coaches to understand the broader sociocultural context of their trainees [12]. The majority of students taught by their peers have reported feeling comfortable in this learning environment.

These findings collectively illuminate the varied perceptions of both student and faculty-led PAL sessions, shedding light on aspects of encouragement, interactive learning environments, communication efficacy, and alignment with clinical scenarios. The study outcomes underscore the nuanced interplay between peer and

faculty-led tutoring within medical education contexts. The peer-assisted group exhibited more positive responses to survey questions, with agreement rates ranging from 62.7% to 72.5%. In contrast, the faculty-led group's agreement rates ranged from 36.7% to 55.1%. These findings are consistent with prior reports indicating that near-peer Problem-Based Learning (PBL) has a positive impact on learner satisfaction [13]. Although there were significant differences in only four components in the questionnaire, the overall satisfaction score of students taught by their peers was significantly higher than that of students taught by faculty teacher.

Among the components with significant differences, Q4 pertained to students' comfort in asking questions. It is plausible that peers can explain concepts in a more relatable manner that fellow students find easier to comprehend. Students may also feel more at ease posing questions to their peers compared to physicians, aligning with the work of House et al [11]. This may explain the students' willingness to recommend similar sessions in the future.

Moreover, student engagement in PAL may reduce passivity, a commonly reported issue during clinical rotations [14]. Another statement that exhibited a significant difference between the two groups concerned the presentation skills of peer tutors versus faculty presentations. Presentation style is a crucial aspect of effective instruction, influencing both content delivery quality and student engagement [15]. In PAL, the presentation style tends to be dynamic and interactive.

Lastly, Q9 measured the extent to which tutors provided constructive feedback. Peers tend to offer more comprehensive feedback, a result corroborated by Taylor and Swanberg [16] and affirmed in this study. These significant findings highlight specific areas where near-peer-assisted learning differs from faculty-led approaches. Collectively, these findings contribute to our understanding of the multifaceted factors influencing the effectiveness of various teaching methods in medical education.

The study's strength lies in its thorough investigation of the impact of PAL on communication skills. However, a key limitation of this study is its single site nature, consequently, this may limit the generalizability of the findings to other institutions with different student populations and teaching methods. Overall, PAL participants demonstrated notably higher scores, echoing existing research. PAL's strengths lie in promoting active learning, nurturing peer-tutor relationships, and cultivating a supportive learning environment. Students in the PAL group expressed greater satisfaction and comfort.

Ethics clearance: Institutional Ethics Committee College of Medicine of Hawler Medical University No.8/28 dated June 27, 2021.

Contributor's: NA: Designed the study, wrote the protocol, and the first draft; SA: Implemented the study, collected the data and wrote the manuscript; SM: Contributed to the design of study, performed the analysis, and participated in writing and reviewing the manuscript. All authors reviewed the manuscript and approved the final version.

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WHAT THIS STUDY ADDS?

Through utilizing peer tutors in communication skills, medical schools can enhance students' learning experiences and outcomes.

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Table I Student Evaluation of the Training Session Delivered by Student Tutors and Faculty Tutors

<i>Questions</i>	<i>Peer-assisted learning Group (n = 51)</i>	<i>Faculty-led Group (n = 49)</i>
1. Tutor encouraged my participation		
Agree	37 (72.5)	27 (55.1)
Neutral	8 (15.7)	16 (32.7)
Disagree	6 (11.8)	6 (12.2)
2. Tutor encouraged safe learning environment		
Agree	32 (62.7)	24 (48.9)
Neutral	9 (17.6)	17 (34.7)
Disagree	10 (19.7)	8 (16.3)
3. The tutor provided clear explanations		
Agree	36 (70.6)	25 (51.0)
Neutral	6 (11.8)	14 (28.6)
Disagree	9 (17.6)	10 (20.4)
4. I was comfortable in asking questions		
Agree	37 (72.5)	24 (49.0)
Neutral	10 (19.7)	18 (36.7)
Disagree	4 (07.8)	7 (14.3)
5. The tutor stimulated my thinking		
Agree	34 (66.7)	24 (49.0)
Neutral	11 (21.5)	13 (26.5)
Disagree	6 (11.8)	12 (24.5)
6. Other students responded to the tutor's questions		
Agree	36 (70.6)	25 (51.0)
Neutral	10 (19.7)	15 (30.6)
Disagree	5 (09.8)	9 (18.4)
7. You recommend similar sessions in future		
Agree	34 (66.7)	18 (36.7)
Neutral	8 (15.7)	12 (24.5)
Disagree	9 (17.6)	19 (38.7)
8. The tutor possesses good presentation skills		
Agree	34 (66.7)	19 (38.8)
Neutral	8 (15.7)	14 (28.6)
Disagree	9 (17.6)	16 (32.6)
9. The tutor provided constructive feedback		
Agree	35 (68.6)	20 (40.8)
Neutral	10 (19.7)	23 (46.9)
Disagree	6 (11.8)	6 (12.3)
10. The session was clinical scenario-based		
Agree	30 (58.8)	24 (49.9)
Neutral	16 (31.4)	19 (38.8)
Disagree	5 (09.8)	6 (12.3)
Total	51 (100.0)	49 (100.0)

Values presented as n (%)

Table II Comparison of Student Responses of Peer-Assisted Group and Faculty-led Group

<i>Statements</i>	<i>Peer-assisted Group (n=51)</i>	<i>Faculty-led Group (n=49)</i>	<i>P value</i>
Q1 Tutor encouraged my participation	3.88 (0.071)	3.51 (0.89)	0.071
Q2 Tutor encouraged safe learning environment	3.60 (1.16)	3.32 (0.89)	0.181
Q3 The tutor provided clear explanations	3.80 (1.14)	3.36 (1.07)	0.053
Q4 I was comfortable in asking questions.	3.88 (0.93)	3.46 (1.13)	0.049
Q5 The tutor stimulated my thinking.	3.68 (0.98)	3.28 (1.08)	0.056
Q6 Other students responded to the tutor's questions	3.72 (0.93)	3.38 (0.93)	0.074
Q7 You recommend similar sessions in future	3.62 (1.16)	3.00 (1.25)	0.011
Q8 The tutor possessed good presentation skills	3.64 (1.18)	3.00 (1.13)	0.006
Q9 The tutor provided constructive feedback	3.70 (1.04)	3.28 (0.91)	0.035
Q10 The session was clinical scenario-based	3.60 (1.07)	3.38 (0.95)	0.283
Total score	37.17 (8.87)	29.73 (6.77)	< 0.001

Values presented as mean (SD)

Web Table I. Checklist for Assessment of Second Year Student's Communication Skills

		Yes	Improper response	NO
1	Greets patient and introduces self, role	1	0.5	0
	obtains patient's name, take permission	1	0.5	0
2	Uses open questions before closed questions.	2	1	0
3	Appropriate and effective use of body language (eye contact, facial expression, proximity, voice)	2	1	0
4	Attentive listening (use facilitative phrases like yes, go on, echoing, paraphrasing)	2	1	0
5	Allows the patient to complete statements without interruption.	2	1	0
6	Encourages patient to express feelings, and acknowledges patient's emotions	2	1	0
7	Asks about patient's beliefs, concerns and the effect of the problems on daily life.	2	1	0
8	Accepts patient's point of view and acknowledge it.	2	1	0
9	Avoids jargon	2	1	0
10	Summarizes for patient's problems.	2	1	0
	Total marks			

Maximum marks obtained was 20 according to checklist; Total marks obtained were multiplied by 5 to have the total mark out of 100

Web Table II. Mean Rank Difference Between Peer-Assisted Subgroups

<i>Statements</i>	<i>Subgroup</i>	<i>n</i>	<i>Mean Rank</i>	<i>P value</i>
Q1 score	A	22	24.16	0.531
	D	18	25.81	
	F	11	30.00	
Q2 score	A	22	22.25	0.193
	D	18	27.22	
	F	11	31.50	
Q3_score	A	22	27.18	0.756
	D	18	24.00	
	F	11	26.91	
Q4_score	A	22	25.00	0.436
	D	18	29.19	
	F	11	22.77	
Q5 score	A	22	22.98	0.241
	D	18	30.31	
	F	11	25.00	
Q6 score	A	22	24.91	0.755
	D	18	27.92	
	F	11	25.05	
Q7 score	A	22	24.86	0.293
	D	18	29.89	
	F	11	21.91	
Q8 score	A	22	23.50	0.452
	D	18	26.64	
	F	11	29.95	
Q9_score	A	22	25.09	0.919
	D	18	26.78	
	F	11	26.55	
Q10_score	A	22	23.84	0.471
	D	18	29.22	
	F	11	25.05	
Total Score	A	22	23.75	0.634
	D	18	27.39	
	F	11	28.23	
Total		51		

Web Table III. Mean Rank Difference Between Faculty-led Subgroups

<i>Statements</i>	<i>Subgroup</i>	<i>n</i>	<i>Mean Rank</i>	<i>P value</i>
Q1 score	B	18	24.64	0.969
	C	19	24.82	
	E	12	25.83	
Q2 score	B	18	21.17	0.145
	C	19	29.55	
	E	12	23.54	
Q3 score	B	18	19.58	0.105
	C	19	27.82	
	E	12	28.67	
Q4 score	B	18	21.81	0.442
	C	19	27.42	
	E	12	25.96	
Q5 score	B	18	26.17	0.902
	C	19	24.32	
	E	12	24.33	
Q6_score	B	18	27.22	0.646
	C	19	23.11	
	E	12	24.67	
Q7_score	B	18	23.67	0.874
	C	19	25.58	
	E	12	26.08	
Q8 score	B	18	25.53	0.574
	C	19	22.66	
	E	12	27.92	
Q9 score	B	18	22.39	0.559
	C	19	26.95	
	E	12	25.83	
Q10 score	B	18	27.75	0.328
	C	19	21.47	
	E	12	26.46	
Total Score	B	18	24.33	0.866
	C	19	24.42	
	E	12	26.92	
Total		49		