

Comparison between facilitator and peer assisted learning: an interventional study at Peshawar Medical College

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Abstract

Objective: To compare peer-assisted learning with facilitator-assisted learning in small group format comprising undergraduate medical students.

Method: The interventional study was conducted from March to August 2016 at Peshawar Medical College, Peshawar, Pakistan, and comprised 2nd year medical students who were randomised into two groups; Group 1 was exposed to peer-assisted learning while Group 2 had facilitator-assisted learning. A validated multiple-choice questionnaire was used for data collection both before and after the intervention. SPSS 19 was used for data analysis.

Results: Of the 80 subjects, there were 40(50%) in each of the two groups, and the groups had 20(50%) males and as many females each. Mean age of Group 1 was 18.90 ± 0.68 years and in Group 2 it was 18.40 ± 0.72 years. There was no significant difference between academic scores of the two groups ($p=0.65$). Within the groups, pre- and post-intervention test scores showed significant difference ($p<0.05$).

Conclusion: Peer-assisted learning was found to be as good as facilitator-assisted learning and it can be introduced as a method of effective teaching.

Keywords: Pre-test, Post-test, Intervention, Peer, Facilitator. (JPMA 69: 1588; 2019).

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Introduction

Over the past few years in medical education, a shift from traditional lecture-based method of learning to more student-driven approach has been observed.¹ Peer-assisted learning (PAL), or gaining skills and knowledge through support and active help among peers, is now being increasingly used in medical education.² It is a competent way of organising medical students for their role as educators in the future.³ Earlier studies reported that PAL was ranked lower to faculty- of facilitator-assisted learning (FAL), but newer studies suggest that in some circumstances, learning outcomes achieved may be analogous.^{4,5} Several studies have been carried out on PAL in Western countries that showed high examination scores, enhanced satisfaction regarding course, and decreased anxiety among students.^{6,7} There is a lack of evidence about success and implementation of PAL in the initial years of medical colleges, especially in Pakistan,⁸ and there is still a need to consider different aspects in developing and planning future PAL activities.⁹

Peshawar Medical College (PMC), Khyber Pakhtunkhwa (KP), to the best of our knowledge, is the first facility in the province that has adopted an integrated curriculum modular system and is also open to adopting new teaching strategies.¹⁰ In 2017, the Khyber Medical University (KMU) planned to start a pilot programme for the purpose.¹¹ The intake of students increased and over-burdened the faculty so much that it had to look for different methods of teaching and learning that would prove to be helpful. Literature also suggests that a medical graduate must be able to function effectively as a teacher.¹² Therefore, introduction of PAL within an undergraduate curriculum could be helpful in preparing medical students for their future role as teachers. In this way, they will be actively engaged in their learning process.

PAL has been conducted in large group discussion (LGD) format and research is lacking in small group discussion (SGD) format⁸ even though it has multiple benefits for the students, such as promotion of deep learning, discussion and communication skills, active and adult learning, self-motivation, development of transferrable skills, application and development of ideas.^{13,14}

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The current study was planned to assess if PAL is as good an andragogical approach as FAL in SGD format for medical undergraduate students.

Subjects and Methods

The interventional study was conducted from March to August 2016 at PMC, Peshawar, which is affiliated with Riphah International University, Islamabad, Pakistan, and comprised 2nd year medical students who were randomised into PAL and FAL groups. After obtaining informed consent from the students, they were allocated to the two groups on the basis of stratified random sampling. Four strata (groups) were made as per gender distribution and previous academic scores: Group I had males securing 50-75%; Group II had males securing >75%; Group III had females securing 50-75%; and Group IV had females securing >75% marks.

Besides, 10 willing students of the same level with academic scores >75% were selected as peer tutors and were not part of any group. They attended the training workshop for peer facilitators¹⁵ that was conducted by expert facilitators.

A validated questionnaire with multiple choice questions (MCQs) was used for data collection both before and after the intervention.

Content and face validity of MCQs was established by 10 subject experts and 2 medical educationalists. The content validity index¹⁶ of 30 MCQs was 0.82. The construct validity of the MCQs was established through "key check" by experts and "item analysis".¹⁷ The key check determined the correctness of the MCQs.¹⁸

A total of 24 MCQs were selected based on item difficulty level. The pre-test questionnaire included¹² MCQs, and was taken by all the students in both the groups. The students were subsequently exposed to PAL and FAL as per their allocation.

SGDs for both groups were conducted on the same day from 8am to 1pm with the same content. The PAL intervention group was facilitated by peer tutors while expert facilitators conducted the FAL control group. Six topics of urogenital module were discussed and each SGD lasted 40 minutes. Post-intervention test comprised MCQs with the same number and difficulty level as the baseline test.

Finally, the groups crossed over for PAL and FAL to avoid

any subjective bias and to provide all the students an equal opportunity to get the desired knowledge of the subject.

Data was analysed using SPSS 19. Independent t-test was applied to assessments related to the two groups. Paired t-test was carried out to compare means of pre- and post-intervention tests within the respective groups.

Results

Of the 80 subjects, there were 40(50%) in each of the two groups, and the groups had 20(50%) males and as many females each. Mean age of PAL group was 18.90 ± 0.68 years and in the FAL group it was 18.40 ± 0.72 years. There was no significant difference between academic pre- and post-intervention scores of the two groups ($p > 0.05$ each) (Table).

Within the group, there was significant improvement in post-intervention scores ($p < 0.05$ each).

Table: Comparison of pre and post-test scores of control and intervention groups.

	Control group	Intervention group	p-value
Pre-test Mean(\pm SD)	6.15 \pm 2.69	5.05 \pm 1.75	0.69
Post-test Mean(\pm SD)	18.95 \pm 2.64	19.20 \pm 2.25	0.65

SD: Standard deviation

Discussion

The findings of the study did not reveal any significant difference in terms of post-intervention scores between PAL and FAL groups in SGD setting. Therefore, it was inferred that PAL and FAL were equally good teaching and learning strategies.

A study to assess PAL effectiveness revealed that theoretical ($p = 0.644$) and practical ($p = 0.133$) outcomes showed no difference between the two groups. However, the peer tutors themselves showed significantly better results overall ($p < 0.05$).¹⁹

A study on undergraduates in rheumatology observed that students using PAL techniques offered a comparable level of training with that provided by an expert.²⁰

A study on PAL versus FAL in LGD format had observations similar to those of the current study.⁸

A randomised controlled study was performed on effects of PAL during neurology clerkship. Results showed that there was no significant difference in learning of the individual groups after PAL and FAL.²¹

A study on the effects of PAL on medical students concluded that the scores in different clinical fields showed a significant improvement compared with the control group ($p < 0.05$). PAL was effective in increasing the students' clinical skills. Furthermore, student roles as teachers led to a combination of attitudes, skills and knowledge in educators and learners.²²

A study evaluating PAL efficacy in nutrition students reported improvement in academic scores.²² Likewise, another study revealed a significant improvement in academic scores by PAL.²³ It has been documented that PAL is not only beneficial for the tutees in improving academic scores, but it also plays a key role in meta-cognitive gains, and development of professionalism skills.¹⁵

In contrast, a study concluded that computer-based education and training by skilled teachers was more effective than PAL.²⁴

The study was not registered because it was in the context of education and was conducted at a single centre which is a limitation.

Conclusion

PAL and FAL were found to be equally good teaching strategies. It can be incorporated into the learning strategies at undergraduate level. However, further trials on a larger scale are warranted.

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Conflict of Interest: None.

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