

# Multi-Resource Peer Assisted Learning in Postgraduate Setting: A Pilot Study

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## ABSTRACT

**Objective:** To evaluate the satisfaction of participants and the effectiveness of an enhanced and relatively formal type of peer assisted learning (PAL) in postgraduate (PG) setting.

**Study Design:** An observational study.

**Place and Duration of Study:** Layton Rehmat Ullah Benevolent Trust, Eye Hospital, Sargodha between 2008 and 2009.

**Methodology:** Participants were 6 medical officers and 2 consultants. Resources and sessions were defined and the curriculum agreed through consensus between all peers. Thirty clinically relevant topics on diseases, techniques and practicals were selected for PAL sessions. A 26-item questionnaire was used to evaluate PAL on Likert-scale. It also included a free text question about one strength and one weakness of PAL. The participants consented to all aspects of multi-resource PAL and they completed a questionnaire, from which data was gathered and analysed to reveal the impact of course.

**Results:** As a peer group they were satisfied with the teamwork experience. Seven out of eight peers reported to have increased their motivation level. In addition, as a peer tutor all peers accepted that the course equipped them with teaching skills and that teaching skills should be learnt. Similarly, as a peer tutee, they believe that peer assistance in a multi-resource format had a positive impact on their learning and their difficult issues were unravelled. Finally, facilitated small group teaching, discussion and summing-up helped the peers to comprehend a given clinical topic.

**Conclusion:** A pilot multi-resource PAL was evaluated and the participants appraised the course favourably and recommended it to their colleagues. The interest and zeal shown by the participants suggests that further investigation through a larger, prospective study is warranted.

**Key words:** Peer assisted learning. Multi-resource. Postgraduate. Learning. Teaching.

## INTRODUCTION

Peer Assisted Learning (PAL) is an informative, interactive, and interesting way of learning. A practical definition of PAL is, "people from similar social groupings who are not professional teachers, helping each other to learn and learning themselves by teaching".<sup>1</sup>

One approach is group-based peer assisted learning. The role of a tutor is to open the forum and present a topic followed by a discussion between the participants. It usually consists of a small group of 6 – 10 peers. All peers contribute according to the level of their knowledge and understanding, thereby, disseminating and gaining the knowledge at the same time from each other through discussion. It encourages both learning and peer-tutoring amongst participants.<sup>2,3</sup> In addition,

improvement in self-respect and the promotion of mutual apprehension amongst peers is achieved through peer interaction in PAL.<sup>4</sup>

PAL has increasingly been used in clinical settings to help in training of physical examination and general clinical skills examination, gross anatomy, communication skills training and resuscitation training.<sup>5-9</sup> Indeed, all of the aforementioned skills could possibly be learned, understood, and practically applied after a comprehensible and approachable discussion in peer groups.

The assertion is that PAL should be formally integrated into the medical curricula at the undergraduate and postgraduate phases. The justification for this is that PAL is an effective way of learning, promotes satisfaction and teamwork.<sup>10</sup> Moreover, it increases confidence and examination performance<sup>11</sup> and professional behaviours.<sup>12</sup>

PAL can be used at the postgraduate level for learning the laboratory and surgical skills. It is a successful way of learning, comparable to the faculty led learning.<sup>13</sup> Likewise, it is used for enhancing the clinical skills of trainees. Evaluation of PAL by trainees was high especially the increase in confidence of examination skills.<sup>14</sup>

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More specifically, it enhances the teaching skills of tutor. "Near peer" teaching is a cost effective method of teaching for the organisation. In addition, it is a beneficial and efficient way of teaching and learning for both the tutor and tutee.<sup>15</sup> Interestingly, peer teaching by trained student teachers was found as effective as teaching by associate professors.<sup>16</sup> Moreover, students trained for peer teaching and then asked to train their peers in clinical skills resulted in better examination performance.<sup>11</sup> Peer teaching might be an effective way of equipping medical students at the undergraduate level with the teaching skill.

Researchers have given detailed description and tips for the initiation, implementation and sustenance of PAL in an institution.<sup>17,18</sup> Traditionally, PAL has been used in medical education informally,<sup>19,20</sup> however, recently there has been evidence of adopting a more formal approach to PAL at the undergraduate level<sup>21</sup> and postgraduate level.<sup>22</sup>

The present study was carried out to investigate this form of PAL through a pilot study. The objective of current study was to evaluate the satisfaction of participants and the effectiveness of an enhanced and relatively formal type of peer assisted learning at the postgraduate (PG) level.

## METHODOLOGY

This observational study was conducted between 2008 and 2009 at Layton Rehmat Ullah Benevolent Trust, Eye Hospital, Sargodha. After discussion with colleagues, 6 medical officers and 2 consultants agreed to participate in the PAL. The project was thoroughly reviewed but no ethical issue was identified. Participants signed a consent form that informed them of the nature of the project.

Medical officers and consultants were regarded as peers to facilitate the process. Standard text books and databases (Pubmed, Medline, Embase) were defined as resources, and careful planning and preparation was done to select 30 key relevant topics. The participants met for an explanation of the purpose and principles of PAL. There was a discussion to enable each individual to understand the role and procedures for a PAL experience.

A well designed framework was developed for peer sessions. A tutorial room was selected for PAL activities. The first 2 days of a week i.e., Monday and Tuesday from 8:00 am to 9:00 am were specified for PAL sessions. On both days, the same topic was presented by the same tutor. In total, there were 30 such sessions for peer assisted learning and each session (Monday and Tuesday) was dedicated for a single selected topic except for techniques to cover five diagnostic and five surgical techniques. The distribution of sessions was such that 20 sessions were dedicated for diseases,

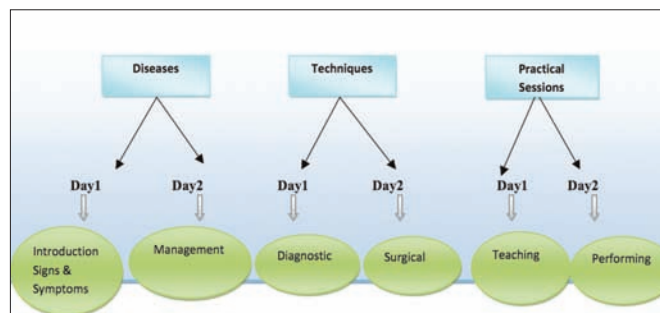


Figure 1: Flow chart explaining the distribution of topics on sessions.

while 5 sessions each were kept reserved for techniques and practicals (Figure 1). On the first day of a session the tutor would provide a 20 minutes overview of the topic. Obviously, this helps in framing the discussion which flows spontaneously from participants for the next 30 minutes. Finally, the tutor would summarise the main points in the last 10 minutes of the session. The pattern of second day was essentially the same except for an additional request from the consultants at the end to send a relevant and recommended article via e-mail to peers.

The sessions were equally distributed between peers depending on their level of knowledge and competence. The tutor would give a reminder of the topic to the tutees in midweek and would distribute the "resources". The medical officers were advised about text-books on that particular topic and the consultants were requested to review the latest research and participate in PAL. In fact, studying a topic beforehand and giving ample time for the participants would help them in future discussion on that particular topic. Moreover, it would help them to ask, discuss and overcome any difficulty related to the topic or during their clinical practice. The textbooks used were shared between tutors and tutees for various topics. The tutors and the tutees were not fixed and group membership was rearranged. Moreover, the tutor was not regarded as a "boss" and the sessions were kept interactive even if a senior student or a consultant was presenting.

Feedback and evaluation during the course was maintained to gauge if the course should be continued. Leader has a vision and his role is to maintain the direction in peer group. In order to make PAL more postgraduate oriented, by consensus, a medical officer was selected to lead and manage PAL with possible help from consultants and other colleagues.

The effectiveness and satisfaction of this enhanced approach of PAL was evaluated through a 26-item questionnaire. Four parameters i.e., as a group, as a tutor, as a tutee and the evaluation and feedback about multi-resource PAL were recorded on a 5 point Likert-scale (ranging from 1, strongly disagree to 5, strongly agree). Furthermore, the perceptions of participants through free text queries were also recorded, asking

about one strength and one weakness of multi-resource PAL. Questionnaire was sent through e-mail and responses were recorded anonymously. The questionnaire is in Appendix I.

All responses from participants were collected anonymously and then analysed by descriptive statistics. The course evaluation questionnaire data was analysed using a Microsoft Excel 2007 spreadsheet. Normally, the data would have been analysed by statistical test; however, due to the small sample size, only the number of responses have been recorded.

## RESULTS

All 8 participants responded to the questionnaire sent to them via e-mail. The clarity of the questionnaire was confirmed from all participants via exchange of e-mails. Detailed results are present in Table I.

As a Peer group, all of them agreed or strongly agreed that it was an interesting teamwork experience and that it was an interactive way of learning and understanding. In addition, 7 out of 8 strongly agreed that it promotes motivation through comparison with other peers. On the other hand, 5 out of 8 agreed that it was more informative than classical lecture system, 2 of them were not sure and one disagreed.

As a Peer tutor, all participants agreed or strongly agreed to that the benefits they received, as a tutor in multi-resource PAL, were increase in confidence, improvement of communication and presentation skills. Additionally, they also responded positively to the questions that it was a beneficial teaching experience at the postgraduate level and that every postgraduate trainee should get a chance to teach. They also felt that the participants benefited from their sessions.

As a Peer tutee, all of them agreed or strongly agreed that they felt clear about the discussed topic and that their analytical ability improved through discussions in peers. Moreover, as a tutee they believed that their peer tutor performed well as a teacher in their respective sessions. Although, 6/8 favoured the statement that peer tutor is as effective as a teacher, still the rest were unsure, 6/8 agreed that they found answers to their questions; however, two of them were unsure. In addition, 1/8 was unsure about finding solution to the complicated issues through multi-resource approach. Nevertheless, the rest agreed or strongly agreed about the last two parameters.

All of the participants agreed or strongly agreed that sessions were well structured, peers were approachable, topics selected were clinically relevant and through this novel approach they comprehended the topics.

**Table I:** Showing responses from 8 participants for the 4 categories of multi-resource PAL (peer group, peer tutor, peer tutee and evaluation and feedback).

Statement	Strongly disagree,1	Disagree,2	Not sure,3	Agree,4	Strongly agree,5
<b>As a peer group</b>					
Teamwork experience.	0	0	0	3	5
Interactive way of learning.	0	0	0	0	8
Stimulates motivation.	0	0	0	1	7
Informative than lecture system.	0	1	2	5	0
<b>As a peer tutor</b>					
Increased confidence.	0	0	0	0	8
Increased communication skills.	0	0	0	4	4
Increased presentation skills.	0	0	0	5	3
Beneficial teaching experience.	0	0	0	2	6
Participants benefited from my sessions.	0	0	0	1	7
Recommend to colleagues.	0	0	0	0	8
<b>As a tutee</b>					
Topics made clear.	0	0	0	3	5
Answered my questions.	0	0	2	6	0
Complicated issues solved.	0	0	1	5	2
Analytical ability improved.	0	0	1	5	2
Peer tutor performed well.	0	0	0	3	5
<b>Evaluation and feedback</b>					
Well-structured sessions.	0	0	1	3	4
Approachable peers.	0	0	0	0	8
Learnt better than conventional course.	0	1	2	5	0
Good understanding of the topic.	0	0	0	6	2
Clinically relevant topic.	0	0	0	0	8
Diagnostic ability improved.	0	0	1	6	1
Differential diagnosis ability improved.	0	0	0	3	5
Management approach improved.	0	0	1	1	6
Surgical techniques improved.	0	0	0	2	6
Would recommend to my friends.	0	0	0	3	5

They felt that their differential diagnosis, diagnosis and management strategy improved through attending the course. In addition, they believed that sessions on surgical techniques improved their surgical potential. Although, two of them were unsure and one disagreed that it is better than the conventional course, still all of them agreed or strongly agreed that they would recommend this type of course to their friends in other specialities.

A free text question was asked from participants to provide one strength and one weakness of multi-resource PAL. Comments on strength were integrated as follows: Learning, teaching, peer group performance, benefits of shared experience, improved performance in clinics, enhanced diagnostic skills and improved teaching techniques.

Perceived weaknesses were that junior tutor is not as proficient as teacher and that the tutor sometime loses control over the discussion part of a given session.

## DISCUSSION

The responses given by all participants for this pilot study on an innovative type of PAL were very encouraging. As a group, the teamwork experience motivated their learning and teaching aptitudes. They were found to have gained confidence in their teaching to a small group. It is worth mentioning here that relatively informal atmosphere stimulate more interaction between peers that lead to more questions, constructive discussion and ultimately more effective learning.<sup>4</sup>

Teamwork where everyone involved is an active participant is an outstanding way of learning and teaching.<sup>3,14</sup> Postgraduate and mature colleagues working as a group in an academic environment lead to an inspiration for learning and teaching. This study showed that participants were constructive about the approach that it helped them to work as a team in an interactive way to learn and understand through peer assistance. In addition, they were of a strong opinion that sessions were really motivating after reflection and comparison.

As a vital skill for doctor, teaching in small groups is an initial step to exercise and then take it forward to a large group format. PAL provides a platform for teaching the clinical skills in a small group format.<sup>11</sup> The word 'Doctor' in Latin means teacher and one of the key activities of a doctor is teaching students, colleagues and patients. Their possible role in future as a teacher and a good communicator with the patient require exposure to teaching. This is best achieved through small group peer teaching.<sup>23</sup> The role of a peer tutor in multi-resource PAL accomplishes the aforesaid goal to a greater extent. This is also evident from the positive responses obtained

from most of the participants that their role as a peer tutor increased their communications and presentation skills. Free text comments included some responses on peer tutoring that it was a simultaneous learning and teaching experience for them. This could probably be due to the fact that having to explain a topic to a group encourages more thinking and elaboration. In general, most of them felt that peer tutor can be an effective alternative to a professional tutor in small group settings and this has been demonstrated in the literature.<sup>16</sup>

As a tutee, the participants felt that they actively learnt by prior reading about the topic, then listening and finally raising questions and queries to nurture and satisfy the sense of understanding and not merely learning. Feedback from participants provided an opportunity to tailor their needs. As a peer tutee, a difference of opinion was observed in finding answers to questions and clarification of the complicated issues (Table I). Nevertheless, most of them felt that participating in peer sessions with multi-resource approach made them clear about topics and they found answers to complicated issues.

Through a separate section in questionnaire, the whole course was evaluated through feedback. Overall, remarkably positive response was obtained from all participants for the course. Evidence from literature shows the improvement in the clinical performance from peer sessions.<sup>9-11</sup> The participants of this study also felt that their performance in clinic enhanced in the form of improvement in diagnosis and management strategies. This occurred because clinical skills were endorsed by trusted peers and supported by best evidence and there was opportunity for practice and feedback.<sup>22,24</sup>

The idea behind developing curriculum with consensus was to include topics of clinical relevance. This will surely assist in motivation for learning and change. This can only be ensured if the selected topics are derived from the learner's own clinical practice. The small group formats certainly delivers in solving the above issue.<sup>24</sup> In addition, the interactive nature of PAL swiftly allows discussion amongst peers. Moreover, it provides a valuable opportunity to gauge one's practice against peers and, in particular the consultants in PAL sessions can help peers in giving them an idea about best available evidence.

There are some limitations of multi-resource PAL. Not all of the participants felt that it was more informative than a conventional lecture system. Moreover, as peer group, the teaching and learning results from this study are only applicable to small group formats which might not be generalizable to large group settings. As a peer tutee, some of them were not sure about answers to their questions and to the intricate clinical topics. In addition, in the free text comments, some important points were

raised by the participants. The main concern was that peer tutors are not trained to teach, they have less knowledge and clinical exposure, therefore, they might not deliver the lecture as is deemed from a professional teacher. Nevertheless, as stated in the methodology that peer tutor only gives the overview of the topic for the initial 20 minutes which is followed by a more important discussion part. Therefore, it probably does not require a more proficient and formal teaching skills. In addition, it is difficult to interact and question an experienced and professional teacher as compared to peer tutor. Teaching skills workshops and training of peer tutors is a possible solution to this problem.<sup>25</sup>

This research provides evidence through quantitative and qualitative data that multi-resource PAL deserves

further mechanistic studies. Innovative approaches takes time to absorb and accept, this might possibly be the reason for the perception that it might not be better than conventional course. The strength of the study possibly is the fact that it spanned for almost a full academic year. Indeed, the retrospective nature and small sample size are the major limitations of the study. However, it has provided a platform for a prospective large scale study. It is also suggested that it should probably be implemented in hospitals and at the undergraduate and postgraduate settings to further elucidate its effectiveness.

Finally, the evidence from the literature, together with the evidence from pilot study suggests that a larger study would be worthwhile to confirm the assertions.

Appendix I					
Questionnaire for multi-resource PAL.					
Statement	Strongly disagree 1	Disagree 2	Not sure 3	Agree 4	Strongly agree 5
As a peer group (In multi-resource PAL) I found it an interesting teamwork experience. I found it an interactive way of learning and understanding. It usually stimulates motivation through comparison with fellow peers. Multi-resource PAL is more informative than classical lecture system.					
As a peer tutor (In multi-resource PAL) I believe this increased my confidence. It increased my communication skills. It increased my presentation skills. It was a beneficial experience of teaching at postgraduate level for me. I think the participants benefited from my sessions. Every postgraduate trainee should learn to teach.					
As a tutee (In multi-resource PAL). I was clear about the topic we discussed. I found answers for my questions. Complicated issues solved because of multi-resource approach. My analytical ability was improved through discussion in peers. In general, peer tutor in their respective sessions performed well in their teacher roles. In general, I consider peer tutor can be as effective as a teacher in small group settings.					
Evaluation and feedback I believe sessions were well structured. I believe peers were approachable. I learnt more than I would have done on a conventional course. I have a good understanding of the topic. Topics selected were clinically relevant to me. My diagnosis of patient was improved. My management strategy for patients improved. My differential diagnosis was improved. Feedback from my peers allowed me to improve my surgical techniques. I will recommend this to my friends.					
Please list what you consider one strength and one weakness of multi-resource PAL.  Strength:   Weakness:					
*PAL in peer assisted learning.					

## CONCLUSION

A pilot multi-resource PAL was evaluated and the participants appraised the course favourably and recommended it to their colleagues. The interest and zeal shown by the participants suggests that further investigation through a larger, prospective study is warranted.

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