

ORIGINAL ARTICLE

EVALUATION OF PEER ASSISTED LEARNING IN EVIDENCE BASED MEDICINE COURSE: A PILOT STUDY AT UNIVERSITY OF GLASGOW

Syed Hamid Habib, Muhammad Omar Malik, Sadia Fatima, Inayat Shah

Institute of Basic Medical Sciences, Khyber Medical University, Peshawar-Pakistan

Background: Peer Assisted Learning (PAL) is a well-established approach in learning and is increasingly being utilized in the medical education system. It is a process where active help of peer group members is taken for learning. This study aimed to look at the impact of peer assisted learning on the students at the end of the session. **Methods:** Sixteen Postgraduate students attending Evidence Based Medicine (EBM) course spanning over two semesters (6 months each) were recruited. It was a cross sectional study and non-probability convenience sampling technique was used for gathering data. All students enrolled in EBM course conducted an hour-long PAL session during the coursework. At the end of the semester a link to an online questionnaire was sent to all the participants. A set of both open and closed ended questions were included in the questionnaire. **Results:** Response rate was 87.5%, 14 out of the 16 students completed the questionnaire. The results showed an affirmative change in the behaviour and attitude of the participants' after the workshops. Majority of the respondents were of the opinion that it was a valuable experience and they benefitted through involvement in the process. Most of the post-graduate students suggested that it should be implemented in post graduate studies especially medical education. **Conclusion:** PAL is more interactive and informal way of teaching and it helps in the professional development, if peers from different specialties are gathered. However, study with a larger sample size are suggested to prove the generalizability of this assertion.

Keywords: Peer Assisted Learning; Peer Learning; Evidence Based Medicine

J Ayub Med Coll Abbottabad 2017;29(4):662-6

INTRODUCTION

Higher education is increasingly using novel teaching approaches to enhance student learning.¹ Peer assisted learning (PAL) has been widely practiced in many educational settings and particularly in medical education where teachers are forced to adopt new ways of providing good quality education to students in the least available resources due to financial restraints.² The advantages of PAL, as described extensively in many parts of the world not only correlate with the exam scores but also describe those of lowering the subjective stress of the students along with enhancing the overall satisfaction providing a social support.³ Interaction among peers is also known to improve self-esteem and commitment to work.⁴

There has been a great diversity in the definitions and types of PAL, being used in a variety of different settings, origins, academic disciplines and approaches being applied. Many terms like peer tutoring, peer teaching, peer learning, peer assisted learning and peer assisted teaching are used interchangeably in different situations. A very useful, practical and working definition of PAL is; "People from similar social groupings who are not professional teachers helping each other to learn and learning themselves by teaching".⁵

It has been proven by research that pairing of the senior and junior students especially in the

undergraduate level helps both the peers in their professional and personal development. This is in addition to the knowledge and skills that is exchanged during the course of time. This aspect of PAL is well appreciated as senior peers can be very effective role models for their junior peers because of a very small gap in knowledge and attitude.⁶ PAL is a two way learning process helping both peer learners and peer tutors. Moreover, peer tutors have shown to achieve significantly greater cognitive gains in comparison to their peer learners' counterparts.⁷

Peer tutoring or PAL in medical education has mostly been applied and studied in undergraduate students and shows improvement/enhancement in clinical skills and laboratory techniques. PAL is also tested in a variety of medical and paramedical specialties including nursing and physiotherapy.⁸ In postgraduates informal PAL sessions are done all the time but formal PAL sessions are tested very less often.

Evidence Based Medicine course (EBM) course, carried out in Human Nutrition Department of University of Glasgow at the Royal Hospital for Sick Children, has formal sessions of PAL as part of the schedule in the first semester. Evidence Based Medicine course is designed for students from different specialties who are pursuing their master degree or post-graduate diplomas. A study was conducted at the end of the session which aimed to

evaluate the impact of Peer Assisted Learning in EBM course.

MATERIAL AND METHODS

At University of Glasgow during the first semester of Evidence Based Medicine Course Peer Learning workshops were held each week, led by one of the students enrolled for the course. EBM course is a part of a post-graduate diploma or Masters in Clinical science. The study was observational with non-probability convenience sample. Duration of the study was three months and it was carried out from March to May 2011. The students enrolled for the course were from different specialties in medical science. A total of 16 students were enrolled with three students each from Pathology and Paediatrics, 2 each from Physiology and Biochemistry, 3 from Reproductive & Maternal Medicine and 1 student from Surgical Oncology. Those from paediatrics, reproductive medicine and surgical oncology were inducted in Master Program while others were inducted in a PhD program and were pursuing diploma.

During the study each student had to conduct a workshop; once in the course. The topic and format of the workshop was at the disposal of the student. The time frame for the workshop was one hour. The peer had the opportunity to be a peer tutor and peer learner at different times.

At the end of the course, the students' experience of being involved in peer learning workshops was obtained on a questionnaire, attached

as Annex A. The questionnaire was based on the studies done by Glynn *et al*⁹ and approach taken by Tariq *et al*.¹⁰; having both open and closed ended questions. A url was prepared for the questionnaire and link was sent to all the participants accessible on the following address <http://tinyurl.com/palform>. The results were gathered anonymously from all the participants to provide them a chance of being free in their views.

RESULTS

14 out of 16 students responded to complete the questionnaire showing a response rate of about 87.5 percent. Among those who completed the questionnaire, fifty seven percent (9/14) had first experience of PAL while 5 out of 14 were previously being involved in PAL. Few students were in favour of the concept at the start of the study as the idea was new for them. Almost all (except one) changed their judgment at the end by showing positive outcome in their behaviour at the end of the term.

When the participants were asked about the strengths of PAL sessions most were of the opinion that it is more interactive way of learning and teaching, and it gives collective and diverse knowledge about the topic from many different perspectives. The strengths and advantages of PAL are shown in the table 1. The main shortcomings reported were the unstructured and non-focused format of the session, and the topic was not of overall interest. The suggestions listed on improving the PAL sessions are summarized in table-2.

Table-1: Strengths of PAL sessions.

What were the best aspects/strengths/advantages of PAL?
<ul style="list-style-type: none"> • See subjects from different point of view. Simplicity in discussion format.
<ul style="list-style-type: none"> • 1- good to build up some presentation skills and how to interact with audience • 2-student choose their own topic that they feel that they aren't good at
<ul style="list-style-type: none"> • Collective knowledge. • Discussion from different perspectives. • More interesting.
<ul style="list-style-type: none"> • Everyone is free to express his ideas about a certain topic • Group discussion is a method of deep learning and everyone learns from the experiences and knowledge of others
<ul style="list-style-type: none"> • Independent learning, is self-directed and informal
<ul style="list-style-type: none"> • Interacting, no tension and easy to understand the topic
<ul style="list-style-type: none"> • It gives an opportunity to clarify basic concepts • It helps to understand the subject matter • Helps to enjoy learning • Develops confidence • Helps to participate actively in discussions
<ul style="list-style-type: none"> • It is a chance for informal discussion between peers with guidance of tutor. • You can bring your point regarding the topic that needs more clarification, and which you would not find a chance or time to discuss it during the lecture.
<ul style="list-style-type: none"> • It may revise some important points or may be brought something totally new and encourage you to look for more information.
<ul style="list-style-type: none"> • Its interactive, informative and interesting
<ul style="list-style-type: none"> • More interactive way of learning and discussing different ideas among the same level students.
<ul style="list-style-type: none"> • None
<ul style="list-style-type: none"> • You could discuss the things with your peers which might looks very simple and you hesitate to ask from your teacher or Professor • Interesting, new learning experience and informative

Table-2: Suggestions for improving PAL sessions by the participants.

What would be your suggestion for improving the PAL?
<ul style="list-style-type: none"> Covering only one main point (limited to one narrow topic), and then the discussion will widen it. Do not prepare lots of organized full slides. that is will attract attention and convert it to traditional lecture
<ul style="list-style-type: none"> Have specific format, the subject should be known by all the learners to have the chance to prepare themselves and have active role in the discussion.
<ul style="list-style-type: none"> Involve subject specialist
<ul style="list-style-type: none"> It should be among the students of the same specialty and should have a specific format with some specific learning outcomes
<ul style="list-style-type: none"> It should be regulated to some extent by the tutor, for example he/she can set some standards and headings of the PAL.
<ul style="list-style-type: none"> More timing rigorous involvement of peers
<ul style="list-style-type: none"> PAL can be under supervision of a tutor
<ul style="list-style-type: none"> Should be facilitated by the tutor
<ul style="list-style-type: none"> Should be implemented from the undergraduate level
<ul style="list-style-type: none"> Should be supervised by a tutor who is specialized in the topic
<ul style="list-style-type: none"> Subject to be determined before the meeting. Better discussion management. Better time allocation according to the importance of the discussed topics.
<ul style="list-style-type: none"> The facilitator should have close eye during the discussion on the topic so that students may not be distracted from the topic and there should be limitation of time as well.
<ul style="list-style-type: none"> Time management
<ul style="list-style-type: none"> Use of research based strategies for structured partner work Prepare students to work with partners, building on students cultural and linguistic background

Eleven out of fourteen students were of the opinion that PAL should be implemented in post graduate studies, however, two gave impartial statement and one was against it. About two-third were willing to implement the concept of PAL in their medical education system. Comparing PAL with conventional form of teaching, almost all were of the opinion that it is more interactive, and allow students to ask questions and discuss the issues about the topic in a friendlier and relax environment. Lecture delivered by a higher faculty member was tenses and it is also difficult to have an open discussion.

Almost all of the students were of the opinion that there should be less number of students in the PAL group and 70 percent were of the opinion that the students should be less than 8 in a group. Most (11/14) were of the notion that PAL sessions should be less than 2 hours a week and none were interested in sessions more than 4 hours.

Those who reported that it helps in the professional development emphasized that it broadens one's area of knowledge, and one benefits by listening to the views from different specialty peers. The one's against this idea reported no interest in different field/area topic, and lost interest for same reason. Most of the peers benefitted and changed their ways from the feedback they received after their session from other fellows. Few of them who were of opinion that there was no benefit, were those who had not asked about any feedback from their colleagues. The wide diversity of topics discussed in the PAL sessions by peers are shown in annex B.

DISCUSSION

Most of the published literature about formal peer learning sessions is in undergraduate students and is

aimed at enhancing and evaluating the clinical skills of the undergraduate students.¹¹ This study evaluated the effects of PAL in post graduates from different specialties of medicine which is unique in its nature.

Most of the peers were involved in PAL for the first time and most of them had an impartial opinion about it before the start of the course, however, at the end of the course about 92% had a positive response that they benefitted from PAL. The concept of PAL and peer teaching has been valued by the students which improves clinical performance and promotes professional development in junior doctors.¹²

All of the peers had a good experience of Peer tutoring in PAL with few having some individual concerns about their tutoring experience. Peer tutoring showed positive outcome in self-assurance of students after introduction in medical curriculum¹³ and it also raises confidence in clinical skills examination by both peer students and tutors as well⁸. The peer tutoring experience was greatly appreciated by the students being involved for the first time¹⁰, and same was observed in this study. In PAL session it is essential to make sure that the session is student led and also peer tutors are selected voluntarily.¹⁴ Sessions in our study were also student led and though tutoring was an essential part of the course work, the students were free to choose the topic of their own choice.

One of the beneficial feature of PAL is the more interactive environment, open and relax atmosphere for discussion and this is obvious from the statement of one of the peers that "everyone is free to express his ideas about a certain topic" giving the sense of more involvement and

confidence of being part of the team. “You can bring your points regarding the topic that needs more clarification, and which you would not find a chance or time to discuss it during the lecture” is another good point of view which is much criticized in formal lectures delivered by tutor. Cooperation and closeness permeates PAL as a whole which is the key feature behind its success and promotive interaction describes how individuals encourage and facilitate each other in a group.⁹ The PAL sessions were unstructured, meaning there was no set standard for presenting the topic and the activity was non-focused at times. The discussion at times was distracted from the topic of discussion. Moreover, very relax learning environment at times lead to a decline in the learning quality of students as they became less focused on the course material, rather having greater awareness of succeeding in assessment.⁹ The unstructured or not having an organized format for the sessions was questioned but by looking at this approach it is a strength in itself as it encourages one to develop and promote own idea that helps in creativeness and reflective judgment which is the essence of Evidence Based Medicine.

Teaching and presenting to the same level of students also helps in improving presentation and communication skills and helps in training of the future teachers as well. Group discussion helps to develop self-directed and deep learning by getting a collective knowledge gained from the experiences of others.¹⁵ Peer teaching can enhance intrinsic motivation of competence, autonomy and relatedness which is evoked when teaching themselves rather than a passive learner.^{16,17}

Cognitive gap which is usually a barrier in effective teaching between the student and teacher can be minimized in the peer teaching as the peers are almost at the same cognitive levels.¹⁶ Regarding this one of the responder pointed that one can discuss minor things which look simple and hesitate to ask from teacher or professor. It also provides an alternative model for efficient learning and decreases burden on the faculty as well as the institution.¹⁶

The limitations of the study include subjective assessments of the student’s perspectives who were being involved in the EBM course. A more objective assessment technique could have been involved in evaluating PAL program. Similarly, the effects of PAL on the examination outcomes could have been considered and these could be compared with those who were previously not involved in PAL in the EBM course. It was considered but wasn’t done as the results of exams were announced far beyond the study being conducted and due to lack of

unavailability of access to previous examination scores. Also, the study is cross sectional and would have been better if a questionnaire had been filled at the start and end of the course.

CONCLUSIONS

Peer Assisted Learning is a very good approach in helping the students both at the undergraduate and post-graduate level to enhance their learning skills. This can also be very helpful in improving communication and teaching skills in a more friendly and informal atmosphere without having any concern or stress about the examination grades or summative assessment. Though the skills and knowledge delivered by an expert in the subject cannot be underestimated at any cost, yet PAL provide extra benefits in the long term. The format and theme of PAL can be refined according to the intended learning outcomes, aims and objectives of the course. This study can also be used as a pilot study for implementing and evaluating PAL in Post graduate studies and using a bigger sample size for generalizing the results of PAL involvement in the curriculum.

AUTHORS' CONTRIBUTION

SHH, MOM: contributed to concept development and designed study; SHH, collected data; SHH, SF, IS drafted the manuscript; SF, MOM, IS revised manuscript. None of the authors had a personal or financial conflict of interest to disclose.

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Received: 09-08-2017

Revised: 27-10-2017

Accepted: 08-11-2016

Address for Correspondence:

Syed Hamid Habib, Assistant Professor, Institute of Basic Medical Sciences (IBMS), Khyber Medical University (KMU), Peshawar-Pakistan.

Cell: +92 333 524 7457

Email: dr.hamidhabib@gmail.com