

Peer teaching in anatomy at GMERS medical college Gotri, Vadodara, Gujarat, India – student's opinion

Shaileshkumar Nagar^{1*}, Dharati M Kubavat², Ajay Rathva³, Padma Varlekar⁴,
Darshan Solanki⁵, Kaushik Makwana⁵

¹Professor, ³Assistant Professor, ⁵Tutor, Department of Anatomy, GMERS Medical College, Gotri, Vadodara, Gujarat, INDIA.

²Associate Professor, Department of Anatomy, MP Shah Medical College, Jamnagar, Gujarat, INDIA.

⁴Associate Professor, Department of Anatomy, GMERS Medical College, Gandhinagar, Gujarat, INDIA.

Email: shaileenagar@yahoo.com

Abstract **Background:** Teaching and learning of a subject becomes effective when the teacher and student know the purpose of teaching and learning. Active learning is based on self-directed and autonomous teaching methods, whereas passive learning is grounded in instructor taught lectures. In the present study we have trained the students to teach their colleagues on the dissection table simultaneously while doing dissection. A debriefing questionnaire was administered at the end of the peer teaching program. **Aims and Objectives:** 1. To enhance the preparation of students for the future challenges of our dynamic medical communities by Peer teaching in medical curriculums. 2. To prepare medical students for their role as a teacher by implementing peer teaching programs. 3. To assess the effectiveness of Peer-teaching on medical students Peer-student learners at G.M.E.R.S Medical college, Gotri, Vadodara, Gujarat. **Material and Method:** The study was conducted in the Department of Anatomy at GMERS Medical College, Gotri, Vadodara, Gujarat, India. The First Year Medical Students were voluntarily selected for peer teaching program. Apart from routine lecture, Demonstration and Practical's, Peer-teaching on various abdominal organs like kidney, stomach, spleen, testis etc. were allotted to peer teachers. Peer- teachers were well instructed and trained by faculty members. One tutorial per day was taken during dissection hours. At the end of two months all topics were completed. All peer student learners were asked to complete a feedback questionnaire after the peer teaching program. **Results:** All student learners were encouraged to give suggestions and recommendations for better output. Majority of Students 98.6% agreed on following statements:

- Tutorial was well prepared and presented by peer teachers.
- Peer teaching motivates to learn more in anatomy subject.
- Peer teachers had communicated effectively during peer teaching.
- Learning environment was improved by peer teaching program.
- We like peer teaching.
- We will take the help of peer teachers for further guidance in future.
- Peer teaching program should be continued next year.
- It's really feel good factor.

97.1% students agreed on following statements:

- Peer teaching is an effective approach of learning.
- We are impressed by performance of peer teachers.
- All tutorials were well organized.
- We are interested to participate in peer teaching program.

87.1% students are recommending peer teaching program in anatomy curriculum. While 12.9 % students were against it. 80% students have first experience of peer teaching/learning, but 20% students had attended peer teaching/learning experience at other institute before this peer teaching program. Peer teaching program was enjoyable for 97% students whereas 3% felt it boaring. **Conclusion:** Peer teaching program can benefit both peer student teachers and peer student learners, we should consider offering peer teaching to all students. Given the demands of future physicians to serve as educators, peer teaching program appears to be an important curricular consideration.

Key words: Medical education, Medical student, cooperative learning.

***Address for Correspondence:**

Dr. Shaileshkumar Nagar, Professor, 3Assistant Professor, 5Tutor, Department of Anatomy, GMERS Medical College, Gotri, Vadodara, Gujarat, INDIA.

Email: shaileenagar@yahoo.com

Received Date: 13/07/2014 Accepted Date: 22/07/2014

Access this article online	
Quick Response Code:	Website: www.medpulse.in
	DOI: 22 July 2014

INTRODUCTION

Teaching is an important skill for future residency training and practice, we believe that training for this role optimally should be introduced and practiced in medical colleges. Peer teaching is the phenomenon where a medical student teaches medical students. Under this teaching modality, students are instructed by students who are belongs to same class. The manner of peer teaching has varied extensively and has included one-to-one teacher-tutee interactions, group peer teaching, problem-based learning, or even peer-developed learning materials^{1,2,3,4,5}. However, there have been few studies that have examined how peers view the teaching and learning experience. Some theoretical frameworks support the potential use of peer teaching. Given the demands of future physicians to serve as educators, peer teaching appears to be an important curricular consideration. The Roman philosopher, Lucius Annaeus Senecca 4BC-AD65 advocated cooperative learning with a statement 'Those who teach learn'. Although in existence for thousands of years, peer teaching is an underutilized, yet highly valuable resource for higher education^{4,5}. Studies have also begun to investigate the advantages of peer teaching for the peer student's learners. Our anatomy department offer medical students the opportunity to teach medical students of same level First year medical students. The effectiveness of peer teaching program has been the subject of investigation. In this study, we investigated the perceptions of the impact of peer teaching from the perspective of the medical student peer learners participants at GMERS Medical College Gotri, Vadodara, Gujarat, India.

METHODS

The study was conducted after ethical clearance was obtained from the Institutional Ethics committee in the Department of Anatomy at GMERS Medical College, Gotri, Vadodara, Gujarat, India. The First Year Medical Students were voluntarily selected for this study. The purpose and method of study was explained to the first year medical students. Twenty four medical students were

voluntarily selected for peer teaching program. Every two students were allotted one topic on tutorial of abdominal organs like kidney, stomach, spleen, testis etc. Each student was taught about a particular topic in gross anatomy by well qualified and recognized teachers. One tutorial per day was taken during dissection hours in a group of 25-30 students. Students in peer teacher roles worked in pairs and rotated among their fellow classmates within the laboratory. At the end of two months all topic were completed. Students who have had the opportunity to participate as a peer student learners were asked to complete the questionnaires. Students who had participated as a peer teacher were excluded from our study. The questionnaire was distributed after completion of peer teaching program. The questionnaires inquired about the type of peer teaching given, perceived effectiveness of this teaching/learning as well as merits and demerits of this teaching program.

RESULTS

All student learners were encouraged to give suggestions and recommendations for better output. Majority of Students 98.6% agreed on following statements:

- Tutorial was well prepared and presented by peer teachers.
- Peer teaching motivates to learn more in anatomy subject.
- Peer teachers had communicated effectively during peer teaching.
- Learning environment was improved by peer teaching program.
- We like peer teaching.
- We will take the help of peer teachers for further guidance in future.
- Peer teaching program should be continued next year.
- It's really feel good factor.

97.1% students agreed on following statements:

- Peer teaching is an effective approach of learning.
- We are impressed by performance of peer teachers.
- All tutorials were well organised.
- We are interested to participate in peer teaching program as peer teacher.

87.1% students are recommending peer teaching program in anatomy curriculum.while 12.9 % students were against it. 80% students have first experience of peer teaching/learning program, but 20% students had peer teaching/learning experience at other institute before this peer teaching program. Peer teaching program was enjoyable for 97% students whereas 3% felt it boring.

Some expressions of the students were

- It is more easier to understand from our classmates.
- We are very comfortable with peer teachers to ask any question.
- I can solve my confusion from them easily.
- It creates an additional excitement to attend the lectures and tutorial.
- We are motivated greatly by peer teachers.
- We got more and more revision during peer teaching.
- Student – Students interaction is better.
- Learning from our friend is easier and enjoyable.

The peer student learners were also asked to comment on merits and demerits of peer teaching. Comments on merits included that It increase communication skill and confidence level. We are more attentive and interactive with peer teachers. It made the subject interesting and under stable. It has helped to encourage more students to participate such programs. It helps in developing teaching skills. One doesn't feel shy in approaching the peer teachers for doubts and queries. It generates more interest in Lecture. Comments on demerits included that some peer teachers lack knowledge. Some peer teachers were lacking in clarity of speech. With some teachers we were unable to cop up with speed of speech. Some weak students may feel inferior to these teachers. In comparison with professors and real teachers, peer teachers have limited knowledge. Level of performance varies from person to person. If the peer teacher is not clear about the concept then the students can suffer. Overall experience of peer teaching program included that It was a good experience and it should be continued in future. Such activity should be more interesting and enjoyable. The experience of being a student of peer teachers was awesome and such teaching should be repeated. Learning becomes fun. I would like to be a peer teacher in future. It may be useful but some students feel inferior and may get depressed. It should include more and more students in peer teaching. It should include in other subjects as well. It should be open for all students and voluntary.

DISCUSSION

The education of Anatomy is not only the essential part of medical curriculum but also develops medical professionalism further medical students have been taught anatomy in the same way for many years. There should be constant reassessment of the curriculum in terms of what and how the students need to learn this subject. There are various factors that determine the particular teaching method to be most effective in a particular academic setting. Association of American Medical

Colleges. General Professional Education of the Physician GPEP Report 1984 points out that lectures are largely passive activities for the students^{5,6,7}The Government of India recognizes Health for all as a national goal and expects medical training to produce competent “Physicians of First Contact” towards meeting this goal. However, the medical education and health care in India are facing serious challenges in content and competencies^{5,8,9}. Peer teaching program provides students with more unscheduled time for independent learning while still allowing them to participate in cadaveric dissection, and promotes more active student participation during dissection. This approach allows students the opportunity to collaboratively interact with their peers via peer teaching, at an early stage in medical training. Feedback from participants suggests that the program fulfills its aims of providing an effective environment for developing deeper learning in anatomy through peer teaching. Our hope is that this study will stimulate discussion among institutions to consider or further incorporating Students views on peer teaching^{5,7,10,11,12}. Our study was limited to undergraduate medical education in subject of anatomy and our findings may not be generalizable to graduate medical education settings. Additional studies at other medical colleges with differing levels of peer teaching and learning opportunities would provide further basis for curriculum planners who are considering peer teaching as an important innovation for learners. It is our belief that the views of students must play a vital role in this process. Enabling students during their studies to engage in some aspect of teaching encourages deeper learning of the subject area with opportunities to teach being an opportunity to “learn twice”^{5,13} or an alternative strategy for learning^{5,14}

CONCLUSION

The peer teaching program was well received by students. It reduced the crowding at dissecting tables considerably and offered them opportunities to hone their communication skills. Peer teaching program can benefit both peer student teachers and peer student learners, we should consider offering peer teaching to all students. Given the demands of future physicians to serve as educators, peer teaching program appears to be an important curricular consideration.

ACKNOWLEDGEMENT

We would like to thank all the peer teachers for taking part in the program and the students for engaging so well with the program. The authors are also very grateful to faculty of anatomy department for support and encouragement of the program.

REFERENCES

1. Walker-Bartnick LA, Berger JH, Kappelman MM. 1984. A model for peer tutoring in the medical school setting. *J Med Educ* 59:309–315.
2. Lake DA. 1999. Enhancement of student performance in a gross anatomy course with the use of peer tutoring. *J Phys Ther Educ* 13:34–38.
3. Krych AJ, March CN, Bryan RE, Peake BJ, Pawlina W, Carmichael SW. 2005. Reciprocal peer teaching: Students teaching students in the gross anatomy laboratory. *Clin Anat* 18:296–301.
4. Youdas JW, Hoffarth BL, Kohlwey SR, Kramer CM, Petro JL. 2008. Peer teaching among physical therapy students during human gross anatomy: Perceptions of peer teachers and students. *Anat Sci Educ* 1:199–206
5. Shaileshkumar Nagar, Dharati M. Kubavat, Kanan Uttekar, Dipali Trivedi, Darshan Solanki, Kaushik Makwana. Peer Teaching in Anatomy at GMERS Medical College Gotri, Vadodara, Gujarat, India-Peer Teacher's Opinion. *International Journal of Recent Trends in Science And Technology*, Volume 9, Issue 2, 2013 pp 211-214.
6. James H. Johnson. Importance of Dissection in Learning Anatomy: Personal Dissection verses Peer Teaching. *J Clin Anat* 2002; 15:38-44.
7. J. E. Waghmare, B. R. Sontakke, A. M. Tarnekar, P. Bokariya, V. Wankhede, M.R. Shende. Reciprocal Peer Teaching: An Innovative Method to Learn Gross Anatomy. *The Journal of Mahatma Gandhi Institute of Medical Sciences*. Sep-2010;15ii:40-43.
8. Vision2015-Medical council of India. Available at www.mciindia.org/tools/announcement/MCI_booklet.pdf. Accessed on 14 Dec 2011.
9. Shaileshkumar K. Nagar, Dharati M. Kubavat, Sucheta M. Chaudhari. Peer teaching in medical education: An important curricular consideration? *International journal of research in medicine*.2013; 24;116-117.
10. Nnodim J.O. A Controlled Trial of Peer Teaching in Practical Gross Anatomy. *J Clin Anat* 1997;10:112-117.
11. Pepler R.D., Kwasigroch T.E., Hougland M.W. Evaluation of Simultaneous Teaching of Extremities in Gross Anatomy Programmeme. *J Med Educ* 1985; 60: 635-639.
12. Schaffer J.L., Wile M.Z., Griggs R.G. Students Teaching Students: A Medical School Peer Tutorial Programmeme. *J Med Educ* 1990;24:336-343.
13. Annis LF. 1983. The processes and effects of peer tutoring. *Hum Learn J Practical Res Appl* 2:39–47.
14. Topping KJ. 1996. The effectiveness of peer tutoring in further and higher education: A typology and review of the literature. *High Educ* 32:321–345.

Source of Support: None Declared
Conflict of Interest: None Declared