

Medical Education: Are We Ready for a Transition?

AMRITA SHRIYAN, DEVAN P. P.

ABSTRACT

Purpose: To analyze whether the current reforms are the right answer to the shortcomings of traditional medical training. To study the preferences of the teaching aids and the methods used by the postgraduate students.

Methods: A study was conducted at the A.J. Institute of Medical Sciences, Mangalore, Karnataka. The participants were post-graduates from various medical colleges in and around Mangalore. A questionnaire was distributed among 100 randomly selected postgraduate students who came to attend the Postgraduate CME Program on scientific writing, publication and presentation skills. The students were asked to tick appropriately the teaching aids and the methods which were preferred.

Results: The postgraduate students were of the opinion that problem based learning and group discussions were preferred over other teaching methods and that Powerpoint presentations were preferred by 82% of the postgraduates as their teaching visual aid, over 14% who preferred blackboard teaching and 2% the overhead projector. 60%-70% of the postgraduates preferred problem based learning. Only 36% of the students felt that it was necessary to have interactions with other departments to treat a patient.

Conclusion: Definitely newer teaching methods would be more helpful than the traditional curriculum with didactic lectures. Visual aids like Power-point presentations will motivate the students to learn their subjects, thus making the learning process an enjoyable experience.

Key Words: Teaching methods, Visual aids, Post-graduate Medical Curriculum, Medical Education

INTRODUCTION

Over the years, attempts have been made to revolutionize medical training.

Traditional clinical bedside skills along with problem based learning, must be inculcated in every student. Students should not be inert recipients of knowledge. Students should learn how to think more productively, by combining creative thinking (to generate ideas) and critical thinking (to evaluate ideas) [1-3]. Conventionally, the role of the medical teacher is to impart curriculum based knowledge to the students. Innovative teaching methods like small group discussions, problem based learning (PBL) and case presentations would further enhance their learning skills and would motivate the students to learn in a more meaningful manner [4]. It aims on developing reasoning skills in the students rather than taking up lecture based studies. Small group discussions would further help the teacher to evaluate the progress of the students and to help them improve in their further sessions [5]. There is an increased level of self-confidence which develops among all the students due to the gaining of their professional knowledge in a fashion of PBL.

Our educational programs should produce doctors who not only have a sound knowledge of the subject, but who are also clinically competent, who excel in interpersonal skills and professional behaviours, who are able to work as a team and those who are able to adapt to changes in the developing medical science faculty and live up to the expectations of the society. Problem based learning definitely has far more advantages than the traditional lecture based learning. This method emphasizes on the presentation of the clinical problems, followed by defining the problems with different solutions to it. The students should be brainstormed about their perception of the problem and their reasoning skills and a solution should be provided by the representative of the group. The final conclusion

should be provided by the teacher. This is an interactive session with the participation of all the students, thus making them more confident in dealing with such similar situations. Certain deficiencies in our medical education system have been identified and documented. Most of them are related to factors within the curriculum [4-7]. MCI also insists on the development of quality in medical education, which includes the training of faculty members to adopt newer teaching tools and methods to improve the quality of education. Published literature is available on the evolution of medical education units in India and on their vision to improve the system in future by conducting CMEs and workshops, as there is a need for a change in the training of medical teachers. With advances in the medical field achieving a uniformity in the training, curriculum or examination would be a challenge.

METHODS

This was a qualitative study which was conducted at A.J.I.M.S, Mangalore, Karnataka. The purpose of this study was to identify the effects of teaching among students and their opinion to improve the same. A semi-structured questionnaire was designed, which contained 10 questions which were given to the students to know their perception about the different tools and methods used in medical education. The data included the positive and negative effects of teaching on the professional aspects. The participants were postgraduate students from different medical colleges in and around Mangalore, who attended the P.G. CME program. Out of them, 100 students were given a questionnaire and a survey was carried out to know the preference of the teaching aids and the teaching methods. We shall focus here on our views on the revolution of medical education, based on the desires which were put forward by the students on their personal experiences. Large and small group teaching, improving presentations, problem based learning,

computer assisted learning, ethics and better scientific writing have improved the existing approach to the medical subjects. Lately, workshops on digital photography, information retrieval by using the internet and video editing have been introduced.

RESULTS

Most of the participants believed that teaching with the use of visual aids and problem based learning motivated them to study. Powerpoint presentations were preferred by 82% of the postgraduates as their teaching visual aid over 14% who preferred blackboard teaching and 2% the overhead projector. 'One picture is worth a thousand words' is an old Japanese saying and hence, it is preferred to get a better idea of a given subject. Around 60%-70% of the postgraduates preferred problem based learning and small group discussions as their teaching method over lectures by faculty members, case presentations, journal club presentations (20-25%), seminars and project work (8%-10%).

As the horizontal and the vertical discussion of subjects is recommended by Medical Council of India, inter-department interactions are a must. By teaching this course to medical students in an organized manner, they not only make the students aware of the problems which can be faced in the future, but they also educate them on how to tackle such issues. With regards to this, in our survey, only 36% of the students felt that it was necessary to have interactions with other departments to treat a patient. 42% of the postgraduates felt that it may be necessary at times and 22% of them did not feel the need to have any interdepartmental interactions. The graduates possessed a sound knowledge of the medical subjects, but they were found to be deficient in the clinical application of it. One should periodically update one's knowledge as learning is a continuous process.

DISCUSSION

In the present session which we conducted for postgraduates, we emphasized on scientific writing, presentation skills and medical ethics and obtained their view with regards to the different teaching aids and the methods that they would prefer. Earlier, it was a teacher centered strategy with very little participation by the students and interaction with the students. The students should be encouraged to evaluate the performance of their teachers. Thus, a feedback questionnaire will provide better information to further improve the existing system. Creating relevant teaching aids and employing methods would make the learning process an enjoyable experience. M.C.I. has recommended both Horizontal; example: Microbiology-Pharmacology-Pathology) and Vertical Integration (example: Microbiology-Surgery, Medicine-Pathology) to be introduced throughout the curriculum. Small group teaching helps to evaluate the progress of the students and it helps to improve them [5-6].

It would perhaps be appropriate to explore these new methods of teaching in medical education. However, this can only happen after a period of appropriate training of the faculty to introduce problem based learning in medical schools. It is very surprising that only very few members of the medical community are familiar with the art and techniques of scientific oral presentations, powerpoint presentations, overhead projectors or any other audiovisual aids. The audiovisual aids should not be allowed to replace the speaker. Changes in the medical practice in future would be a more systematic approach. This is due to increased reading and reflection on practice, challenging questions from students and thus spending more time with the patients due to learning their medical subjects in the form of PBL [8-11].

A study was done, where these two methods were evaluated with pre-test and post-test. The results of the post-test scores were statistically significant, thus proving that problem based learning was definitely more effective than the conventional lecture based learning [12]. One of the studies showed that the positive effects of problem based learning were that it not only improved the teaching skills of the teachers, but that it also improved the concept of application of knowledge among the medical students in their future practice. Other studies in this regards have mentioned that it can be suggested to promote the general practitioners to attend Continued Medical Education programs on problem based learning, which can enhance their capabilities in clinical practice [13].

A complete transition from a conventional to a problem-based learning curriculum further helps in training the students to handle difficult situations and questioning and also in evaluating the students. These proposed teaching methods would facilitate small group discussions. Such teaching methods would provide a forum through which the medical students would develop clinical reasoning skills based on a sound scientific knowledge, early in their medical training [8-11]. One should be ready for this transition. It is time to revolutionize the existing teaching methods with these innovative teaching aids and methods in medical education. However, many studies have shown significant differences in the results when problem based learning was included as their teaching method. In our study too, the students felt that they could have been better performers if problem based learning had been introduced as a teaching method in their medical educational system. Further studies are required to understand and evaluate the application of these innovative teaching methods in our medical educational system.

REFERENCES

- [1] Prideaux D. Researching the outcomes of educational interventions: a matter of design. *BMJ* January 2002; 19;324:126-7
- [2] West DC, Pomeroy JR, Park JK, Gerstenberger EA, Sandoval J. Critical thinking in graduate medical education: A role for concept mapping assessment? *JAMA*. 2000; Sep 6; 284(9):1105-10.
- [3] Rendas A B, Fonseca M, Pinto P R. Towards meaningful learning in undergraduate medical education by using concept maps in a PBL pathophysiology course. *Advances in Physiology Education*. 2006; 30: 23-29.
- [4] Supe A, Burdick W P. Challenges and issues in medical education in India. *Academic Medicine* December 2006; 81/12:1076-1080.
- [5] Visschers-Pleijers AJ, Dolmans DH, de Grave WS, Wolffhagen IH, Jacobs JA, van der Vleuten CP. Student perceptions about the characteristics of an effective discussion during the reporting phase in problem-based learning. *Med Educ*. 2006 Sep; 40(9):924-31.
- [6] Bansal P., Supe A. Training of medical teachers in India: Need for a change. *Indian J Med Sci*. 2007 Aug; 61(8):478-84.
- [7] Bhuiyan PS, Rege NN. Evolution of a Medical Education Technology Unit in India. *Education Forum* 2001 Jan; 47(1):42-4.
- [8] Norman GR and Schmidt HG. The effectiveness of problem-based learning curricula: theory, practice and paper darts. *Medical Education*, March 2000; 34:721-8.
- [9] Diana F Wood. Problem based learning. *BMJ*. February 2003; 326: 328.
- [10] Ashourioun V, Dadgostarnia M. A comprehensive report and "Introduction to Clinical Medicine", Educational Development Center, Isfahan University of Medical Sciences, 2002; 6-5.
- [11] Nandi PL, Chan JNF, Chan CPK, Chan P, Chan LPK. Undergraduate medical education: comparison of problem-based learning and conventional teaching. *HKMJ* 2000; 6:301-6.
- [12] Davood Y, Mostafa A M, Reza G, Hossein R et al. The effect of problem based learning on education and the recall of medical students in the course of basic immunology in comparison with lecture based learning. *Journal of Medical Education*. Summer 2002; 1(4):165-68.
- [13] Yamani N., Yousefy A., Changiz T., Ashourioun V., Ghasemi M.. How does teaching clinical skills influence the instructors' professional behaviour? *Journal of Medical Education*. Summer 2004; 5(2): 41-45.

AUTHOR(S):

1. Dr. Amrita Shriyan
2. Dr. Devan P.P.

PARTICULARS OF CONTRIBUTORS:

1. Corresponding Author.
2. Assistant Professor
A.J. Institute of Medical Sciences and Research Centre,
Mangalore, Karnataka, India.

NAME, ADDRESS, TELEPHONE, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Amrita .Shriyan Assistant Professor,
A.J.Institute of Medical Sciences,
Department of Microbiology, Kuntikan, NH-17,
Mangalore-575004. Karnataka, India.
Tel: +91 (0) 9986252598
E-mail: dramrita@ymail.com

FUNDING

No financial support of any kind was provided to the physicians who participated in this observational study. The stationary material which was used in this study for the data collection was provided by Zuventus Healthcare Ltd.

COMPETING INTERESTS

None of the physicians who participated in this study had any financial relationships with Zuventus Healthcare Ltd, that might have an interest in the submitted work in the previous 3 years and no other relationships or activities that could appear to have influenced the submitted work.

BD and NP are employees of Zuventus Healthcare Ltd.

DISCLOSURE:

The paid service of JCDR was not used for the preparation of this manuscript.

DESIRE TO APPLY FOR REWARDS: No

Date of Submission: **Mar 19, 2011**

Date of per review: **Jun 06, 2011**

Date of acceptance: **Jun 15, 2011**

Date of publication: **Aug 08, 2011**