Short Communication

Physiology teaching for the undergraduate medical students - A vision for the future

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Abstract

In the existing teaching model, first year undergraduate medical students generally take notes in the class room while Physiology is being taught, and thereafter study from their text books and notes. In this short communication, the authors provide a vision for the future that involves improving a first year student's learning and educational equity inside a medical college with the help of strong and consistent collaboration between physiologists and physicians thus ensuring that students understand the concept of application of physiologic principles by providing a chance for practical exposure with relevance to clinical Physiology.

Keywords: clinical physiology, medical education, physicians, undergraduate medical students

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Introduction

In the existing set up in India, every undergraduate student who enters a medical college is well exposed to the basics of Physiology during the school education. However, that knowledge is only a basic theoretical knowledge without much of practical exposure with relevance to human Physiology. Improving a first year student's learning and educational equity inside a medical college *needs* a strong and consistent collaboration between physiologists and physicians to make the students understand the concept of application. Such an improvement can be accomplished only when the concerned teachers and the administrators take responsibility for the academic standard of the graduates they produce. Such collaboration will surely elevate the educational quality and therefore the outcome of students and thereby produce good doctors and researchers for the future.

Physiology teaching - A vision for the future

Advances in Physiology education have potential to promote and disseminate knowledge and offer scope for more research in our country. Even Claude Bernard, the distinguished experimental physiologist had preferred laboratory teaching to classroom teaching, where he could interact with students and demonstrate phenomena, which were

consequently better understood by the students.

Technological advances have brought in a world of change in the attitude of acquiring knowledge among students over the past few decades. No longer do the students depend solely on the text books or the teacher to learn, as they are well versed with the Google search. The generation of students we are seeing grew up with computers. But one has to remember that mastering the subject through electronic media cannot produce a pilot or any other professional. Any amount of teaching and listening to Physiology is not going to help unless it is appropriately applied to the patient which only a physician can effectively explain to the budding doctors at the undergraduate level.

It is of course important to have doctorates in Physiology for the development of the speciality, to produce more effective teachers in the field of Physiology. The performance of the teacher in both research and classroom performance should be the gauge to give promotion and not just a mere chronological seniority.

To teach a future doctor it is the physician who can explain the importance of application of Physiology and it goes without saying that such matters taught with real patient application would stay in the student's mind forever. It is high time that we teachers recognize that our students no longer have to solely depend on the teachers for acquiring knowledge. At the same time we must also understand the important role that we play in guiding them to learn, which is important, and how to apply it and motivate them to take up research for future development of the specialty.

The system should focus more on imparting clinically significant aspects of Physiology which can be effectively handled by practicing physicians. Unfortunately progress in this arena is very slow despite the availability of physicians and the eagerness of students to learn from them.

In the existing teaching model, students sit in the class room, take notes, and are supposed to study from them with the help of text books. The greatest disadvantage here is that the teacher has no guarantee that the student learned anything or not. In spite of the fact that a student got the highest grade in the cardiac Physiology test, he cannot apply that to the patient in the clinical ward rounds unless he remembers what he learnt a few years ago. This is where the need for a physician teaching the undergraduate students during the first year Physiology posting plays an important role.

A good teaching module should include clear objectives, identify essential content, decide on the topics which the students can learn on their own and those topics which need in-depth teaching of the basics and can involve getting the clinicians to address students for the applied Physiology in every chapter.

A physician with ample research experience and great teaching interest in Physiology can be inducted into the department of Physiology and further appraised by his contributions to Physiology in terms of research. The administrators should select the top talent with effective teacher performance grade and research attitude assessed by factors like pass percentage, student feedback, citation of their publications, etc., for this purpose. This can produce in any medical college, a higher graduation rate with more knowledgeable doctors. The policy makers should support programs and release more grants that will help prepare and produce highly effective doctors to help society, which should start from day one of the student's life in the medical college. A highly functioning system can amplify the accomplishment of their educators whereas a dysfunctional system will undermine the impact of even the best of teachers and students alike, which will adversely affect the future generations of students and the doctor community they produce.

Conclusion

In this short communication, the authors provide a vision for the future, as far as the teaching of Physiology for undergraduate medical students is concerned. This involves strong and consistent collaboration between physiologists and physicians, with the induction of a physician with ample research experience and great teaching interest in Physiology into the department of Physiology, who could address the students for the applied Physiology in every chapter, thus providing a chance for practical exposure with relevance to clinical Physiology.

The 'Take home' message from this short communication is:

- Lessons taught by physicians are better understood, remembered and applied by the students.
- Promotions and hierarchy should be based on the consistency of the teacher's performance both in teaching and research.

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