

Section

Physiology

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Article

## Evaluation of Physiology Teaching Methods in Chandrapur Government Medical College

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### ABSTRACT

**Background:** The primary goal of medical education is to produce quality doctors and not just quantity. Heightened focus on the quality of teaching in the new medical college has led to increased use of student surveys as a means of evaluating teaching.

**Aim:** This study was undertaken to evaluate various teaching methods and skills adopted by a teacher in Physiology lectures by first year MBBS students of two successive batches admitted in newly established Chandrapur Government Medical College.

**Methods:** A pre-validated questionnaire consisting of 18 questions was given to 100 first year medical students of first two successive batches towards the end of their academic year and feedback was taken in the form of selecting the most appropriate option applicable (**OPTION: A = Always, M = Most Often, S = Sometimes, N = Never**). Total numbers of A, M, S and N were calculated and given 3, 2, 1 and 0 marks for every A, M, S and N circled respectively. Maximum possible score was 54. 45 to 54 marks – Exceptional teaching skills, 30 to 44 marks – Superior teaching skills, 15 to 29 marks – Average teaching skills, 0 to 14 marks – Room for improvement.

**Results:** In the first batch, maximum score was given for having clarity with the concepts and being audible, using simple language and audio-visual aids and explaining them their errors and how better they can perform. In second batch, apart from this, maximum score was given for relating the topic with their lives, giving examples, summarizing the concepts, asking them to answer questions, applying information in solving problems, encouraging them to learn in different ways, listening their comments, giving them feedback and finding out frequently whether every student has learnt the skills.

**Conclusion:** Every medical teacher who delivers a lecture should make teaching meaningful with clarity in the concepts and audibility, promoting active learning by the students, understanding the individual differences, giving feedback at regular intervals and ensuring mastery in the subject.

**Keywords:** Physiology, Lectures, Medical students, Teaching learning methods

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### INTRODUCTION


Human physiology is science of normal functions of body systems. Its knowledge enables a medical student to understand how the genes regulate the functions at molecular levels and how beautifully the different systems work together to maintain nearly constant internal body environment which helps the body to respond to physical activity and to the environmental conditions.<sup>[1]</sup> It is considered as an important subject of medical sciences and forms the basis of a rational medical practice.<sup>[2]</sup> Understanding the

mechanisms of the body functions requires a high level of integration, not just a descriptive approach.<sup>[3,4]</sup>

Students who took admission in first year MBBS course used to study all the three subjects physiology, anatomy and biochemistry in one year. They are focusing on the easy ways to clear the university exams by accepting the concise books, which is dampening the real quality of the subject knowledge.<sup>[5]</sup>

Teaching is an inbuilt art that can be refined by undergoing medical education training, for a medical professional who is

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working in a medical college. The primary objective of the medical education should be a holistic approach which enhances the problem solving skills with the critical thinking.<sup>[5]</sup> Lectures have the benefits of providing the lecturer's personal overview of the material, integrating information from multiple sources, and clarifying complex information.<sup>[6]</sup> The effectiveness of a lecture will depend on the skill of the lecturer.<sup>[7]</sup> The visual, auditory, read/write and kinaesthetic (VARK) learners process the information best if they can see, hear, written words and experience or practice the information respectively.<sup>[8]</sup>

Heightened focus on the quality of teaching in medical college has led to increased use of student surveys as a means of evaluating teaching.<sup>[9]</sup> To make the lectures of Physiology more interesting and understanding, one has to review the teaching programme at regular intervals. The best way to assess and improve the teaching methodology is through the students' feedback.<sup>[10]</sup>

In view of all the above mentioned facts, we made an effort to evaluate the teaching methods and skills exhibited in Physiology lectures and accordingly modify this existing pattern in the successive batch which would further help students in improving learning.

### METHODS

A total number of 200 MBBS students of first two successive batches admitted in new Chandrapur Govt. Medical College attending Physiology lecture classes participated in this study. A prevalidated questionnaire was given individually to the 100 medical students of the first batch after taking informed consent, towards the end of their academic year. Students were briefed about the purpose of study. The questionnaire was given to them and they were asked not to reveal their identity on the form. They were also informed that the information given by them was for the research and evaluation purpose only and would be kept confidential. The students were encouraged to furnish their unbiased independent opinion to complete the questionnaires regarding the study. Any other suggestions related to changes needed in the existing system for better understanding and perception, were also requested for mention.

The questionnaire (**Annexure-1**) consisted of 18 questions with its multiple choice answers in the form of codes. **CODE: A = Always, M = Most Often, S = Sometimes, N = Never.** Questions were related to 1) Making teaching Meaningful, 2) Clarity in expression and thoughts, 3) Active learning, 4) Individual Differences, 5) Giving Feedback and 6) Ensuring Mastery. Feedback was taken in the form of circling the most appropriate code Total number of A, M, S and N were calculated and given marks accordingly. 3 marks for every A circled, 2 marks for every M circled, 1 mark for every S circled and 0 mark for every N circled. Maximum possible score was 54. 45 to 54 marks- Exceptional teaching skills, 30 to 44 marks- Superior teaching skills, 15 to 29 marks- Average teaching skills, 0 to 14 marks – There is room for improvement.<sup>[11]</sup> The data was collected and verified by hand and was analyzed. After observing the results from first batch, the efforts were taken in the successive batch by the teacher in Physiology lecture classes to improve the lacunae found in the first batch. At the end of the academic year of the successive batch of first MBBS, the same procedure was followed. The data of this batch was collected and verified by

hand and was analyzed. The results of the two batches were compared.

### RESULTS

In the diagram I showing questionnaire based self-assessment study including 100 1<sup>st</sup> year MBBS students of first batch of the new college, on analysing, maximum score was given for having clarity with the concepts and being audible, using simple language and audio-visual aids, and explaining them their errors and how better they can perform. Minimum score was with finding out frequently whether every student has learnt the skills, checking that they understand each point, making them practice skills and applying them to their lives, allowing them to work at different speeds and listening their comments. 90% of the students of this batch considered it as a superior teaching skills and rest 10% considered it as exceptional teaching skills.

In the diagram II showing question numbers and total score of second batch admitted for 1<sup>st</sup> year MBBS, maximum score was given for relating the topic with their lives, giving examples, summarizing the concepts at the end of the lectures, having clarity with the concepts and being audible, using simple language and audio-visual aids, asking them to answer questions, applying information in solving problems, encouraging them to learn in different ways, listening their comments, giving them feedback, explaining them how better they can perform and finding out frequently whether every student has learnt the skills.

Minimum score was given for allowing them to work at different speeds and listening their comments. 55 % of the students of this batch considered it as exceptional teaching skills and rest 45% considered it as superior teaching skills.

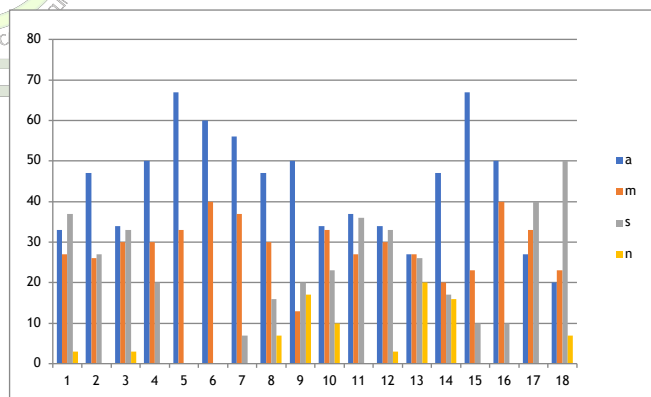


Fig :-1 showing question numbers and total score of first batch admitted for 1<sup>st</sup> year MBBS

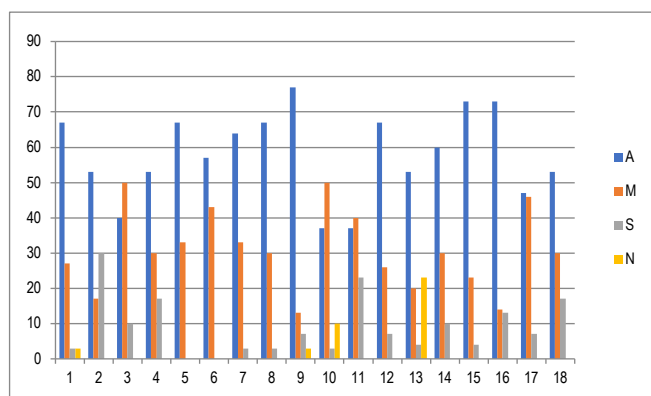


Fig :- 2 Showing question numbers and total score of second batch admitted for 1<sup>st</sup> year MBBS

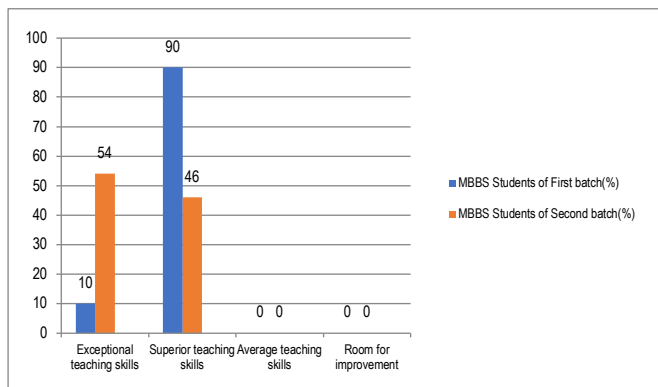


Fig :- 3 Shows comparison of teaching skills by these two batches

### DISCUSSION

Medical Education forms an entirely different phase of learning in the curriculum of students. As soon as the students get admitted in the medical college, their views, ideas and perception of the teaching-learning methods and processes is entirely different. An apprehension is normally associated with medical profession. It can be more clearly observed in the first year medical students, who get admission in a freshly started medical college, more so if there are no senior batch students. This needs to be tackled meticulously for better outcome.<sup>[11]</sup>

In this aspect, we conducted a self-assessment study and analyzed the views and opinions regarding the Physiology lectures of 200 students of first two batches admitted to this new college. Presuming that towards the end of each academic year, the students would frame a vivid picture about the usefulness, importance and clinical application of the concepts taught and hence enable to ensure mastery over them. In the first batch, lot of importance was given to the teaching method having clarity with the concepts and being audible, using simple language and audio-visual aids, and explaining them their errors and how better they can perform. After receiving the feedback from the first batch, necessary steps were taken to reform the teaching learning skills in the successive batch. In the second batch, more significance was given to the teaching method which involved giving examples related to their lives and summarizing the whole concept at the end of the session. Lot of importance was given to applying information in solving problems, encouraging them to learn in different ways, listening their comments, giving them feedback, explaining them how better they can perform and finding out frequently whether every student has learnt the skills. Frequent questioning and giving scope to answer was well appreciated. To accomplish all this, it is equally important for a teacher to be well audible and use simple, easily understandable vocabulary and learning aids. After improving the teaching learning skills, students' perception for exceptional teaching skills has raised from 10% to 55% in the successive batch.

The medical students are the end users of any teaching learning activity and are perfectly placed to give us the relevant feedback. This feedback about the student perceptions could be valuable to guide us to a better designing of the curriculum, faculty development and training in pedagogical approaches and a better teaching of physiology, which would then create a positive attitude among the students towards physiology, a lifelong love for

the subject and perhaps an interest in pursuing it as a career.<sup>[12]</sup>

### CONCLUSION

Every medical teacher who delivers a lecture should make teaching meaningful with clarity in the concepts and audibility, promoting active learning by the students, understanding the individual differences, giving feedback at regular intervals and ensuring mastery in the subject. To attain all these objectives a regular self-assessment of teachers along with students' feedback is very much necessary to master exceptional teaching skills.

#### ANNEXURE-1

#### HOW WELL DO I TEACH?

(Please go through the checklist and circle the most appropriate letter applicable)

CODE: A=Always M=Most Often S=Sometimes N=Never

	Circle any one			
	A	M	S	N
<b>Making teaching Meaningful</b>				
1. Do I relate what I am talking about to the students' lives?	A	M	S	N
2. Do I give a lot of examples?	A	M	S	N
3. Do I relate what I am talking about to the work the students will be doing?	A	M	S	N
4. Do I give summaries?	A	M	S	N
<b>Clarity</b>				
5. Can the students hear and see me?	A	M	S	N
6. Do I use simple language?	A	M	S	N
7. Do I use visual aids?	A	M	S	N
<b>Active learning</b>				
8. Do I ask students to answer questions?	A	M	S	N
9. Do I ask students to apply information in solving problems?	A	M	S	N
10. Do I arrange for students to practice thinking and practical skills?	A	M	S	N
<b>Individual Differences</b>				
11. Do I allow students to work at different speeds?	A	M	S	N
12. Do I encourage students to learn in different way?	A	M	S	N
13. Do I listen to students' comments about my teaching?	A	M	S	N
<b>Giving Feedback</b>				
14. Do I tell students how well they are doing?	A	M	S	N
15. Do I explain the errors that they are making?	A	M	S	N
16. Do I explain how students could do better work?	A	M	S	N
<b>Ensuring Mastery</b>				
17. Do I check that all my students understand each point?	A	M	S	N
18. Do I frequently find out whether every student has learnt the skills?	A	M	S	N

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