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Original Research Article

Preferences and expectations of undergraduate students regarding teaching-learning methods in medical physiology

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ABSTRACT

Introduction: Teaching in various medical college, worldwide has gone under lot of changes by the use different methodologies like the use of chalk piece to power point presentations (PPT) and virtual simulations. Clinical Medical Physiology is a 1st year subject in Bachelor of Medicine and Bachelor of Surgery (MBBS) course and often students find the subject difficult and too much. Trials by the use of single or multiple tools for teaching clinical medical physiology, in addition to conventional teaching, have been found to be useful. Physiology, implies student's active participation in the teaching process for better acquisition of necessary knowledge and skills. Hence, judicious & optimum utilization of these teaching hours is of real importance for attaining the specified objectives.
Aim: To know the preferences and the expectations of the existing methods of lectures in Physiology by the first professional MBBS students.
Materials and Methods: A pre prepared and validated questionnaire was used to collect data from the first MBBS students.
Results: Out of 150, study participants, 60 were male students and 90 were female students.
Discussion and Conclustion: The most preferred teaching method by the students was interactive followed by didactic lectures. Feedback from the students enhances a change in pre-conceived notions about teaching learning principles to meet their expectations.

1. Introduction

Teaching in medical colleges worldwide has gone under rapid change by the use different methodologies like the use of chalk piece to powerpoint presentations (PPT) and virtual simulations.[1,2] Clinical Medical Physiology is a 1st year subject in MBBS course and often students find the subject difficult and too much.[3] Experiments by the use of single or multiple tools for teaching clinical medical physiology, in addition to conventional teaching, have been found to be useful.[4,5]

Most Medical colleges in India prefer the conventional lecture based teaching. The objective of conventional lecture based teaching is to form a basic foundation before entering into the clinical subjects and that all students should be exposed to identical knowledge, to grow similar interest.[6] The methods commonly employed are PPT, Overhead projector (OHP) and the conventional chalk piece and talk method.[7] Several methods are used for assessing the quality of teaching and evaluating its impact on student learning method. Student's feedback is the most common entity, easier, economical and correct method will be beneficial for both the students & teachers.[8]

The quality of teachers is assumed through students' academic achievement. Information taken by means of attitudes & perceptions of students can be used to improve the course & academic performance in near future.[8] In this present cyber era, there is a great challenge for teachers to make ensure that the knowledge is retained prolong enough which help students them in clinical practice and it is

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reported that pre-clinical subjects knowledge is lost during the clinical years of medical course.[9] Different studies have been conducted comparing effectiveness of didactic lectures & students opinions and perceptions different teaching methodology. However no study gives the conclusive result that the use of a particular teaching method is most effective. Hence, the present study was undertaken to evaluate the perceptions & opinions of students regarding the subject, topics and different various teaching methods of India.

2. Materials and Methods

This was a cross-sectional study conducted in May 2016 at a medical college in South India**.** A total of 150 students participated in the study, The Physiology subject in the undergraduate course is divided into mainly various organ systems like endocrine system, excretory system, respiratory system, cardiovascular system, nervous system, digestive system, muscle physiology etc. Preferences and perceptions of teaching-learning activities were determined from questionnaires applied to students. The data was collected relative to the objectives about preferred teaching styles, aid of lecture delivery, perceived qualities of a good teacher, duration of a theory class, practical's, written test of up to 3 questions at the end of each class, opinion on theory classes and their suggestions. The responses obtained from the questionnaire were entered in Microsoft office excel sheet and analysis was done. Statistical analysis was done in SPSS software.

3. Results

A total number of 1 50 students participated in this study, 90 (60%) were female students and the remaining 60 (40%) were male students. The preferences of the teaching styles for understanding physiology are represented in Table 1. The lectures in Physiology are delivered with various teaching aids such as only a talk by the teacher, chalk piece & talk, over- head projector and the PPT using liquid crystal display (LCD) projector. The study participants were asked to choose the preferred aid of lecture delivery details are represented in Table 2. The students were questioned whether practical's on a given topic of physiology helps in understanding the subject better. These responses are tabulated in Table 3. The study was conducted at the end of the lecture series on clinical endocrine system physiology. Certain suggestions were also made by students which were related to various aspects of teaching & evaluation. The suggestions for improvement of teaching-learning are shown in Table 4.

Table 1: Preferred teaching style by students for understanding physiology

Teaching style	Number of students*	Percentage (%)
Interactive Lecture	72	48
Formal lecture	39	26
Group Work	30	20
Student Presentation	12	8
Private Study	9	6
Student Role Play	7	4.66

*Multiple responses

Table 2: Most preferred aid of lecture delivery for understanding physiology

Preferred aid	Number of students*	Percentage
Only a talk by the teacher	4	2.66
Chalk and talk	51	34
Overhead projector	20	13.33
Powerpoint presentation	97	64.66

*Multiple responses

Table 3: Physiology practical's helpful in understanding the subject

Practical's helpful	Males	Females	Total
Yes	53	79	132
No	7	11	18
Total	60	90	150

p-value <0.001 (significant)

Table 4: Suggestions given by the students

Suggestions given by the students	Males	Females	Total
Other lecture delivery methods	42	67	109
Small group teaching	12	13	25
Other	6	10	16
Total	60	90	150

4. Discussion

From Physiology education point of view, it is very difficult to make the subject more interesting by adopting a single teaching methodology. An assessment made by students can provide the teacher with useful feedback information, obtained through mutual communication or preferably by a designed questionnaire. The questionnaire in the current study was an overall evaluation tool, where the students were encouraged to put in their own observations regarding the aspects of teaching-learning methods.

The students have expressed that the interactive & didactic lectures as the most preferred and self-directed learning and student's role play as the leas t preferred method of teaching-learning method. Williams's S et al.,[10] have also revealed interactive & didactic lectures as the most preferred and self-directed learning was least

preferred methods. Interactive lectures highlight common misconceptions held by the students and encourage students to question[11] and thus increases self-efficacy of student which is linked to their academic achievements. Goldberg et al have found that interactive lecturing increases the educational value of lecture time.[12]

Some previous studies have reported that certain teaching-learning methods, such as PBL, are more prefered over the traditional methods i.e. lectures.[13,14] Question of which aid for Physiology teaching is most appreciated by students indicated that they preferred power point presentations followed by traditional face-to-face explanation using blackboard teaching methods. These findings are consistent with other researchers.[15] In contrast to the current study, Baxi et al reported that their study participants preferred multimedia usage.[16]

Majority of the study participants expressed that Physiologypractical's help them in understanding the subject. There was a statistically significant difference between male and female students regarding this opinion (p-value=0.001). It is identifies that increased student involvement leads to change in attitude- learning outcomes.[17] Majority of the students graded the series of lectures on clinical endocrine system physiology was good. The collected data in the present study revealed that majority of the students suggested that for improvement of teaching-learning, more than one type of lecture delivery should be included and there is a need of more interactive sessions in small groups. Other suggestions given by the students were inclusion of more pictures and animations, decreasing the speed of lecture delivery, emphasis on the expected questions in the university examination.

However, due to time constraints, all suggestions cannot be always put into practice. The findings of this study suggests that it may be possible to enhance student's perception of the value of a teaching session by modifying the session in view of student based evaluation. The summary of the collected observation on the most accepted aspects and suggestions for improvements were taken into consideration and implemented.

5. Conclusion

Combination teaching aid is most preferred teaching aid because the deficiency of one aid is compensated by the other. Students still prefer to be taught with the help of multiple teaching learning aids, i.e. the most authentic chalk and talk with the more technological PPT method can follow the teaching and understand the concept effectively. Combination of teaching and followed by asking questions plus small group discussions (SGD)plus tests is most satisfied teaching method because the student is actively involved and more learning takes place. Judicious use of different methods increases the understanding, remembrance and reproducibility and thus the academic performance of the student will be improved.

6. Source of funding

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7. Conflict of interest

None

References

1. Flores-Mateo G, Argimon JM. Evidence based practice in postgraduate healthcare education: a systematic review. *BMC Health Serv Res*. 2007;26(7):119–119.
2. Ferguson E, James D, Madeley L. Factors associated with success in medical school: systematic review of the literature. *Br Med J*. 2000;324:952–957.
3. Priyadarshini KS, Shetty HV, Reena R. Assessment of different teaching aids and teaching methods for the better perception of Biochemistry by 1st MBBS. *J Evol MedDent Sci*. 2012;1(6):1159–1165.
4. S AB, Passos RM, Ono AH, Hermes-Lima M. The use of multiple tools for teaching medical biochemistry. *Adv Physiol Educ*. 2008;32(1):38–46.
5. Passos RM, S AB, Wolff VL, Nobrega YK, Hermes-Lima M. Pizza and pasta help students learn metabolism. *Adv Physiol Educ*. 2006;30(2):89–93.
6. Finch PM. The effect of problem-based learning on the academic performance of students studying pediatric medicine in Ontario. *Med Educ*. 1999;33:411–428.
7. Pravin R, Haque N, Ahmed N. Is audiovisual method better than traditional for medical students? - a survey report. *Bangladesh J Medicine*. 2010;21:60–67.
8. Hamid Y, Mahmood S. Understanding constructive feedback: a commitment between teachers and students for academic and professional development. *J Pak Med Assoc*. 2010;60(3):224–231.
9. Lata H, Walia L, Gupta V. Student feedback on teaching and evaluation methodology in physiology. *South East Asian J Med Educ*. 2008;2:31–37.
10. Williams S, Sa B, Nunes P, Stevenson K. Communicating with first year medical students to improve Communication Skills teaching in The University of the West Indies. *Int J Med Educ*. 2010;1:5–9.
11. Pajares F. Self-efficacy beliefs in academic settings. *Rev Educ Res*. 1996;66:543–578.
12. Goldberg HR, Haase E, Shoukas A, Schramm L. Redefining classroom instruction. *AdvPhysiol Educ*. 2006;30:124–127.
13. Antepohl W, Herzig S. Problembased learning versus lecture-based learning in a course of basic pharmacology: a controlled, randomized study. *Med Educ*. 1999;33(2):106113.
14. Michel MC, Bischoff A, Jakobs KH. Comparison of problem- and lecture-based pharmacology teaching. *Trends Pharmacol Sci*. 2002;23(4):168170.
15. Seth V, Upadhyaya P, Ahmad M, Moghe V. PowerPoint or chalk and talk: Perceptions of medical students versus dental students in a medical college in India. *Adv Med Educ Pract*. 2010;1:11–16.
16. Baxi SN, Shah CJ, Parmar RD, Parmar D, Tripathi CB. Students perception of different teaching aids in a medical college. *AJHPE*. 2009;1(1):15–16.
17. Berg CA, Bergendahl VC, Lundberg BK. Benefiting from open-ended experiment? A comparison of attitudes to, and outcomes of, an expository versus an open-inquiry version of the same experiment. *Int J SciEduc*. 2003;25:351–372.

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