

ORIGINAL ARTICLE

STUDENT PERCEPTION OF LEARNING MODALITIES IN PHYSIOLOGY IN INTEGRATED CURRICULUM

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ABSTRACT

Background: Currently most of the medical schools are incorporating innovative medical curricula in their bachelor programs. Most of the institutions are moving towards a more student centered approach to learning and assessment. Physiology being one of the mandatory basic science disciplines is also experiencing these changes. Student learning is always related to the teaching methodologies being used. Student's perception of the various teaching methodologies is useful in improving the quality of learning in medical education and to evaluate the student perception of different learning modalities in physiology in an integrated curriculum.

Methods: Study was conducted on 100 medical students of 1st and 2nd Year. Participating students were explained the purpose of study. Based on the teaching methods practiced in the department of Physiology at Ziauddin Medical College, a survey questionnaire was prepared and given to the participants. The questionnaire consisted of questions enquiring about the preference of different learning/ teaching methods and the reason for the preference.

Results: Majority of the students of 1st and 2nd year MBBS selected Problem based learning (PBL) 48% lecture 40% and small group session 7 % and other teaching method 5%.

Conclusion: Problem based learning was found to be the preferred learning modality to study physiology and lecture was the most helpful method in preparing for exams.

KEY WORDS: Perception, Physiology, Teaching Tools, Learning, Integrated Curriculum

INTRODUCTION

Physiology is one of the basic sciences disciplines taught at undergraduate level in traditional medical curriculum¹. Its importance lies in its application in clinical practice. It faces tremendous challenges regarding curriculum design, methods of implementation and application of knowledge in clinical practice¹. There is a massive transformation in curriculum design and modalities of teaching/learning in higher education over the last four or five decades². Student centered learning methods have been found to be most helpful in concept building of physiological sciences².

Since its inception, Ziauddin Medical College has introduced educational system that is dynamic and is consistent with the latest best practices³. It has

played a proactive role in improving quality of medical education by introducing adult learning styles, integrating basic science discipline to skills and problem solving³.

A distinctive feature of semester system at ZMC is spiral integration of all the disciplines included in the MBBS curriculum guidelines provided by PMDC³. Teaching methods/strategies at ZMC not only includes traditional styles, but also uses student centered teaching/learning methods. It includes Case Based Sessions, Problem Based Learning and small group teaching sessions³.

Though lecture based learning is considered as a passive form of learning, yet in Pakistan, didactic lecture is one of the most commonly used method for teaching the discipline of Physiology⁴. In PBL

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sessions the focus of learning is a clinical/basic science problem and students actively participate in solving the problem¹. As compared to the basic science knowledge learned in isolation, the knowledge of basic science is comprehended better and is easily applied by medical students in the context of a clinical case⁵.

In addition to PBL and lecture, teaching Physiology at ZMC also includes case based sessions and small group teaching sessions. CBS is conducted in large class format i.e. class is divided into two groups and each group has one teacher to facilitate the session. As a practice, a case is given to the class 3-4 days before the planned session. Students are required to come prepared with the case and discuss it with the teacher during the scheduled teaching session.

In SGS, class is divided into multiple small groups, each group comprising of 14-15 students. In small group sessions, the topics already covered in lectures are revisited and discussed in detail through questions and answers. Teacher prepares various short questions on the topic and students answer the questions after discussing it with other members of the group hence getting clarity of the various concepts included in the topic.

Though Physiology department at ZMC is using multiple teaching/learning methods, yet those involved in planning do not know which teaching tool is more useful for the students. A study was designed to assess the student's preferences for various teaching methods applied in the institution

and to evaluate the student's perception of different learning modalities in physiology in an integrated curriculum.

METHODS

One hundred students from 1st and 2nd year MBBS class at Ziauddin Medical College, Pakistan participated in the study. Participating students were explained the purpose of study. The survey questionnaire was pre tested on 35 students and later finalized. It included questions enquiring about the preference of different learning/teaching methods and the reasons for the respective preference. The learning/teaching methods included Lecture, CBS, PBL, SGS and Practical/skill. Students were also asked about their preferred learning/teaching method that they find useful in preparation of exams and also about the learning/teaching method which needs improvement and how.

Statistical Analysis: Descriptive statistics were used for analysis of data. Data is expressed in terms of frequency and percentage.

RESULTS

Majority of the students of 1st and 2nd year MBBS selected Problem based learning (PBL) 48% lecture 40% and small group session 7 % and other teaching method 5%. Data presented below is expressed in terms of frequency and percentage.

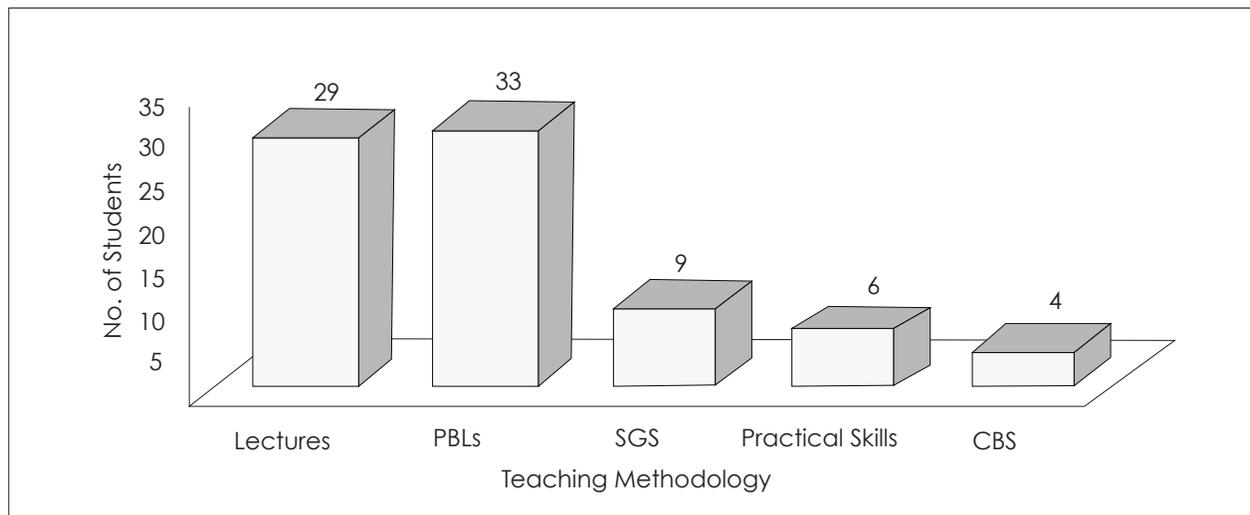


Figure 1: Rating of different teaching methodologics according to selected students

Table 1: Distribution of Helpful Methodologies

Methodologies	Frequency (N)	Percent (%)
Lectures	32	40
PBLs	39	48
CBS	02	3
SGS	06	7
Practical skills	02	2

Table 2: Distribution of Best Teaching Methodologies for Examination Preparation

Methodologies	Frequency (N)	Percent (%)
Lectures	40	49
PBLs	32	40
CBS	01	2
SGS	06	7
Practical skills	02	2

Table 3: Distribution of Different Teaching Methods Needs Improvement

Methodologies	Frequency (N)	Percent (%)
Lectures	20	25
PBLs	05	6
CBS	18	22
SGS	29	36
Practical skills	09	11

DISCUSSION

Presently different medical colleges in Pakistan are trying to replace the traditional curriculum with various innovative curricula⁶, integration being the most common theme has been achieved fully or partially by a few of the colleges in Pakistan^{3,4}. Some colleges are using PBL as a teaching tool in their curriculum^{3,7,8}. In order to apply a learner centered approach for finding out the teaching/learning method that is most helpful in learning of physiological concepts and the one which facilitates the students in examination, a questionnaire was designed, pilot tested and the distributed to students who are studying physiology and are in the 1st and 2nd year of MBBS program. The results

showed that 48% students selected PBL as the most useful method to learn Physiology, 40% selected lecture as the most preferred method of learning, 7% selected SGS, 3% CBS and 2% skills. Students commented that PBL is the most helpful method of teaching/learning as it allows for discussion in small group⁸ & helps in understanding of concepts⁹. It allows students to research, thus promoting self learning⁶ and simultaneously learning within a group⁷. They stated that discussion helps in retaining the knowledge. Students also cited that PBL helps in learning Physiology in integration with other subject like pathology⁹. Students selecting lecture as the preferred learning/teaching method gave the reason that a lecture is thorough & helps to learn a particular topic in detail in a shorter period of time⁴.

Difficult concepts are explained in lectures¹⁰. Regarding the question about the teaching/learning method that helps most in preparation of exam, 49% selected lecture and 40% selected PBL. To the answer of a question that which learning/ teaching method requires improvement, 25% students wanted lectures to be improved by making them more interactive and interesting. For CBS, the reason given by students to improve is that both CBS and PBL require similar efforts from the students and to attend the CBS as well as PBL session, the workload of students is increased. For SGS, the reason for requirement of improvement given by students is that it is placed as a sequel of lectures and they feel that there is no extra gain of knowledge, its mere waste of time and there is repetition of topics. The suggestion given by students is to replace the SGS with quiz or a short answer session.

CONCLUSION

Problem based learning was found to be the preferred learning modality to study physiology and lecture was the most helpful method in preparing for exams.

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