



ORIGINAL ARTICLE

Survey of assessment of teaching learning methods for physiology among undergraduate medical students at a university.

Rabia Siddiqui¹, Saif Ullah Shaikh², Lalarukh Munawar³, Iram Saddiqa⁴, Muhammad Faisal Fahim⁵

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ABSTRACT ... Objective: To assess preference of first year MBBS students about teaching learning strategy used in Physiology course. **Study Design:** Cross-sectional study. **Setting:** Bahria University Medical and Dental College (BUMDC). **Period:** October-December 2019. **Material & Methods:** A detailed questionnaire was given to the students of first year MBBS aged 19-21 years. **Results:** The ideal teaching method for learning physiology was found to be tutorials (70%). The ideal teaching aid for understanding physiology was agreed by (45%) of the students to be white board and marker followed by power point presentation (25%). The ideal duration of time for a lecture found to be was 45 minutes (55%). The ideal duration of time for a small group discussion was 45 minutes (60%) and preferred time slots for lectures was early morning 9am to 10:30am which was agreed by most of the students (80%) and for tutorials was 11am-1pm which was agreed by (55%) of the students. Preferred timeslot for lab skills was agreed by (35%) of students to be at 2-4pm. (80%) of students agreed that the most preferred quality of teacher as perceived by students is their ability to teach followed by knowledge (70%). **Conclusion:** This study results conclude that students prefer student centered teaching learning strategies in order to learn physiology.

Key words: First Year MBBS Students, Preferences, Questionnaire, Teaching Learning Methods.

INTRODUCTION

Medical education quality depends upon the teaching learning methodology. It is important to learn the students' perception about teaching learning methodology as the mode of instruction has shifted in past decade from teacher –centered to student centered.¹ Varied number of teaching methods are employed at undergraduate and graduate levels that includes didactic lectures, role –playing, case studies, demonstrations through video tapes, problem based learning (PBL), interactive sessions and laboratory work.² The goal of instruction is to impart knowledge to students in a short span of time by using above learning methods.³ Therefore student perception about teaching learning methodology is essential before delivery of content is designed for the students. The present study is designed to understand and assess the student preferences about teaching learning methods practiced at

their institution.^{3,4} It is equally important for the medical teacher to meet the educational need of the student regarding knowledge, attitude and skill.⁵ In addition to above the most preferred quality of a teacher that influences a student was also assessed.⁶ Having an understanding on students learning styles may help to develop learning strategies and this may enhance the performance of students.⁷ It is not only desirable but also essential for educators to recognize that adults have different learning styles and that they should tailor instructions to the characteristic ways in which the adults prefer to learn.^{8,9} The term, 'learning style' describes an individual's preferred method of gathering, processing, interpreting, organizing and analyzing information. The learning style information can also benefit the students as it would help them in formulating the appropriate learning strategies for enhancing their learning¹⁰ a study done by poonam etal revealed that the

1. MBBS, DDM, MCPS (Family Medicine), Senior Lecturer Physiology, Bahria University Medical & Dental College.
2. MBBS, MSc, M.Phil, Associate Professor Physiology, Bahria University Medical & Dental College.
3. MBBS, MCPS (Family Medicine), Senior Lecturer Physiology, Bahria University Medical & Dental College.
4. MBBS, FCPS, Professor Physiology, Bahria University Medical & Dental College.
5. DPT, Senior Lecturer (Biostatistics & Researcher) Physical Therapy, Bahria University Medical & Dental College.

Correspondence Address:

Dr. Saif Ullah Shaikh
Department of Physiology
Bahria University Medical & Dental College.
dr.saif74@yahoo.com

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preferred learning style for medical student was practical /dissection¹¹ An Indian study revealed majority of the students (60%) preferred group discussions versus didactic lectures as a favored teaching mode.¹²

The rationale for conduction of this study was to see whether, prevailing teaching learning methods are acceptable to the first year MBBS students and directed towards achieving the curriculum objectives.

MATERIAL & METHODS

A cross sectional study was conducted on 115 first year medical students of a medical university, Bahria University Medical and Dental College, Karachi between the time period of three months from October -December 2019. BDS, DPT and MLT students were excluded from the study. The formula used for sample size calculation was $(n) = z^2 pq/d^2$ A structured questionnaire (pre-designed and pre-validated) regarding open and close-ended questions pertaining to student's preferences about various teaching-learning methods practiced by Physiology teachers during teaching sessions was used as a data collection tool.

After ethical review by the ethical committee dated (ERC letter issued on 11 September, 2019 with reference Number of ERC 49/2019), the following methodology was used. After their consent, the students will be given the questionnaire to be filled by them. A 7 item structured questionnaire (pre-designed and pre-validated) regarding open and close-ended questions pertaining to student's preferences about various teaching-learning methods practiced by Physiology teachers during teaching sessions will be used as a data collection tool

Statistical Analysis

The statistical analysis of the results was carried according to the conventional standard statistical procedures using computed statistical analysis by SPSS, version 20.0 for Microsoft Windows XP. Data will be presented in tabular and graphical form. The preferences provided by students will be expressed in percentages. P values less than

0.05 will be considered significant

RESULTS

A total of 115 students were recruited in this study. There were 34 (29.6%) male and 81 (70.4%) female found in this study.

The ideal teaching method for learning physiology was found to be tutorials (70%). (Figure-1).

The ideal method for understanding physiology for students was tutorials which was strongly agreed by (55%) of the respondents (Figure-2).

The ideal teaching aid for learning physiology was strongly agreed to be white board and marker (45%) and power point presentation (45%). (Figure-3)

The ideal duration of time for a lecture should be 45 minutes which was strongly agreed by (55%) of the respondents. (Figure-4)

The ideal duration of time for a small group discussion should be 45 minutes which was strongly agreed by (60%) of the respondents. (Figure-5)

Preferred time slot for lectures was early morning 9am to 10:30am which was strongly agreed by (80%) of the by respondents. (Figure-6)

Preferred time slot for small group discussion was 11am to 1 pm which was agreed by (60%) of the respondents. (Figure-7)

Preferred time slot for lab skills was strongly agreed for both early morning 9am to 10:30am and 11 am –1 pm by (35%) of the respondents. (Figure-8)

The most preferred quality of a teacher as perceived by the students is ability to teach (80%) followed by knowledge (70%). (Figure-9).

DISCUSSION

Medical education is the field which recognizes with that to become a medical professional requires the initial training to turn in to a doctor

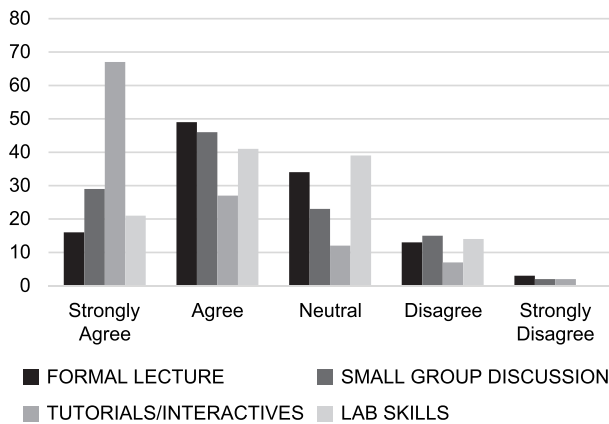


Figure-1. The ideal teaching method for learning physiology is

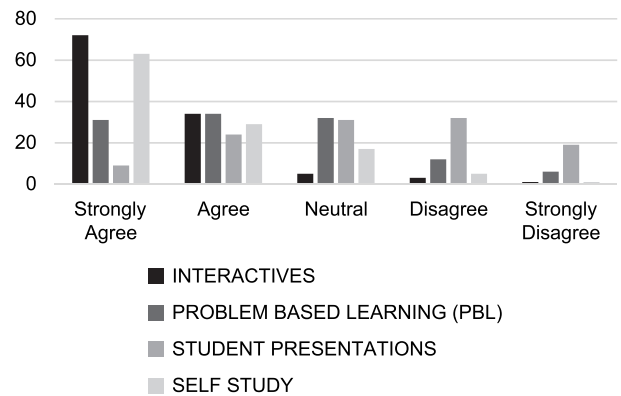


Figure-2. The ideal method for understanding physiology for you is

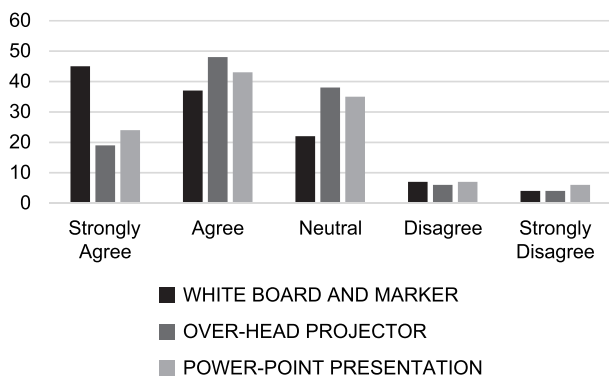


Figure-3. The ideal teaching aid for learning physiology is

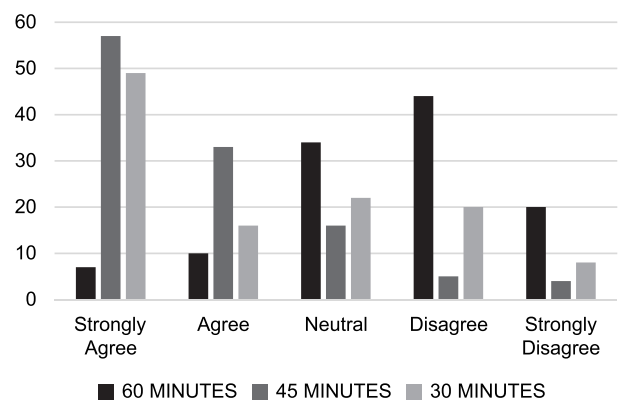


Figure-4. The ideal duration of time for a lecture should be

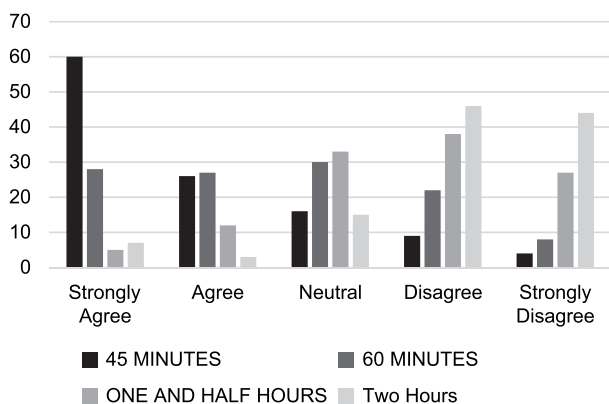


Figure-5. The ideal duration of time for a small group discussion should be:

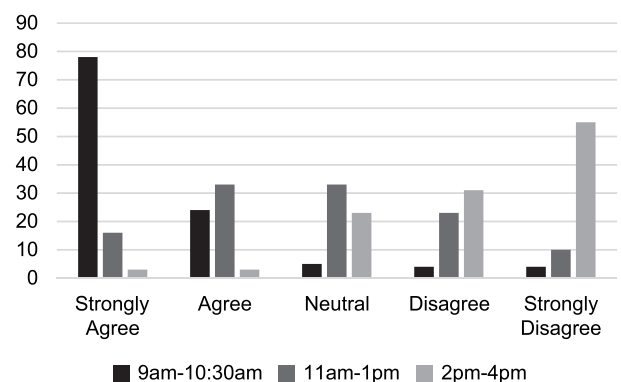


Figure-6. Preferred time slot for lectures

and post-graduation additional training or the doctor assisted education. But why do we have a need to teach the medicine to the youth of this world? The goal is to provide medical teachings to produce qualified physicians who are trained

to serve fundamental motives of medicines in order to meet their individual and collective responsibilities to the society.

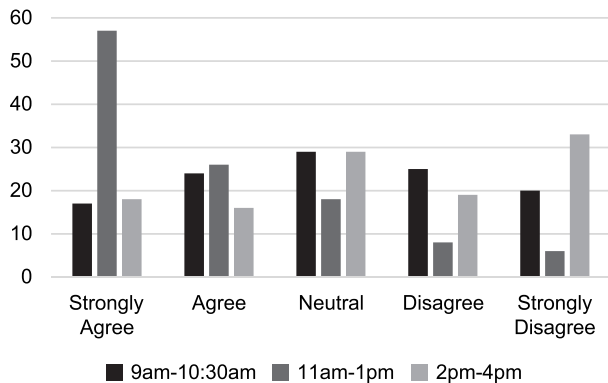


Figure-7. Preferred time slot for small group discussions

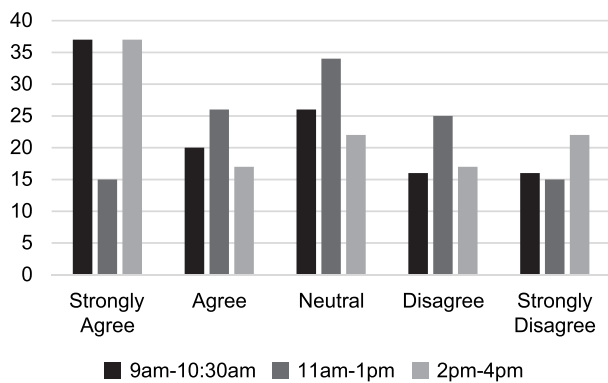


Figure-8. Preferred time slot for lab skills

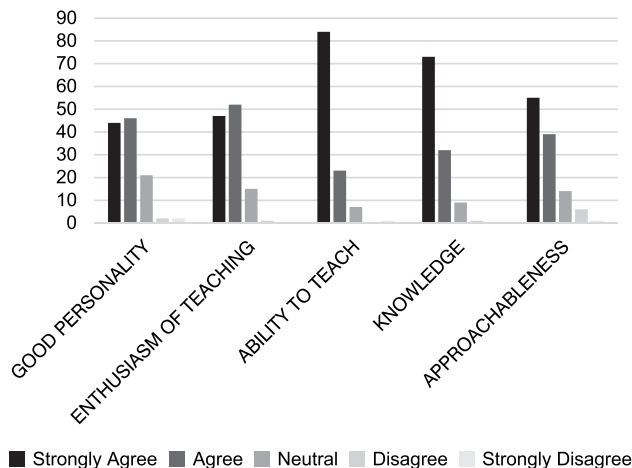


Figure-9. The most preferred quality of a teacher as perceived by the students is

Therefore, it is crucial to introduce the teachings of socio human and health care sciences in an integrated manner to train students in team work, communication and professionalism in order to

practice medicine¹³(Scalar, 2017)

This questionnaire-based study 29.6% males and 70.4% females as participants. It was found that according to them ideal teaching method for learning physiology is tutorials (70%). Similar findings were reported from cross sectional study in India who showed the most preferred teaching method was small group discussions (57%) while practical skills were the least preferred teaching method (18%)⁴ (RS Khane, 2012). The contradictory findings were noted from the research held in Malaysia where the students showed best method was standardized lecture slides with proper learning outcomes and well explanation by the lectures.¹⁴(Anthony leela 2018)

Majority of the students in this survey agreed that the ideal method for understanding physiology was interactive in the form of small group discussions. A small group discussion is basically an opportunity for the students to share their ideas and opinions without facing a need to address to the whole class.¹⁵ Such discussions provide a chance to a student to monitor their own learning in order to experience self-direction learning.¹⁶

The study revealed that ideal method used as an apparatus for teaching and demonstration is white board and marker (45%) and power point presentations (25%). These findings endorsed by (71%) male and female students that chalk and board is most helpful for understanding the topic followed by overhead projector (19%) and power point presentation. (10%).⁴ Same study also showed 42% students were in a favor that a good teacher should exhibit art of teaching and while 31% preferred enthusiasm and rapport as the most preferred qualities of a teacher.⁴

Lectures are considered to be one of the most effective ways to transfer information from teachers to students. Too short lectures cause student attention to wane quickly and thus information is also forgotten quickly on the other hand too long lectures without questioning students could lead to boredom and student passiveness.¹⁷ Therefore, this study focused to know the ideal

time span for delivering lecture and small group discussion as perceived by students which was 45 minutes.

The limitation of the study was small sample size with its conduction in a single private university increases the chance of bias and results of the study cannot be generalized. Therefore, larger multicenter study needs to be conducted with a larger sample size in all five years of MBBS to make the results generalized.

CONCLUSION

This study results conclude that students prefer student centered teaching learning strategies in order to learn physiology rather teacher centered. Students preferred white board and marker as preferred physiology teaching aid and tutorials as preferred teaching learning strategy. The teacher's ability to teach was considered to be the preferred quality of a good teacher.





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AUTHORSHIP AND CONTRIBUTION DECLARATION

No.	Author(s) Full Name	Contribution to the paper	Author(s) Signature
1	Rabia Siddiqui	Principal investigator, Conception, drafting and study design.	
2	Saif Ullah Shaikh	Drafting of the article and critical revision for important intellectual content.	
3	Lalarukh Munawar	Worked on methodology and collection and assembly of data.	
4	Iram Saddiqa	Critical analysis of article.	
5	M. Faisal Fahim	Statistical expertise and analysis of data.	