Original Article

Perception of 2nd Year Medical Students about the Role of Interactive Lectures of Anatomy in an Integrated Modular Curriculum

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ABSTRACT

Objective: To evaluate the role of interactive lectures in the teaching of anatomy in an integrated curriculum. Perception of students regarding importance of anatomy in clinical studies. Effectiveness of teaching innovations in anatomy lectures.

Study Design: Observational study.

Place and Duration of Study: This study was conducted at the University College of Medicine and Dentistry, University of the Lahore from June 2018 to November 2018.

Materials and Methods: Second professional MBBS students (n=125/150) were given well-structured & pretested questionnaire containing various queries to investigate their perception about teaching & learning of anatomy.

Results: The majority of the students was of the opinion that anatomy is an interesting subject (79%) and is relevant to clinical studies (90.4%). General anatomy is perceived to be more difficult than systemic anatomy by (56.0%) thestudents. Integration of anatomy with clinical knowledge helped in understanding of disease concept according to 88.8 %of the students. Majority of the students agreed that clinical correlation done in lectures was beneficial (74.4%) and explanation given was satisfactory (54.4%). Number, duration and flow of lectures was adequate according to70.4%, 68.0% and 60.8% of the students. As far as quality of lecture is concerned, there was an agreement of students that they are encouraged to ask questions (68%),delivery, pace of lecture was suitable, and lectures stimulated their interest in subject according to (56.8%) of the students. Material used during lectures was readable, useful and innovative according to 62.4%, 76.8% and 68.8% of the students. Didactic lecture was thought to be effective teaching method by (59.2%) of the students with power point presentation as an ideal learning media of (55.2%) students.

Conclusion: Majority of the students recommended that integrated teaching should be adopted along with case base learning and group discussion. An interactive lecture is an effective methodology in teaching of integrated curriculum.

Key Words: Interactive lectures, Anatomy, Teaching, Medical students, Integrated curriculum

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INTRODUCTION

The student's feedback is of immense importance in quality enhancement on both sides teaching and learning.[1] The quality of knowledge is directly reflected by the student's perceptions and feedback for which surveys are conducted in higher educational institutes to review the methodology and improve the quality and contents of ongoing programs. Effective feedback from the students is important for reviewing the methodology and improving the quality and contents.[2,3,4] Anatomy teaching in terms of content and methodology has undergone major changes in recent times due to time constraints, scarcity of cadavers, rapid advance in IT, and changes in the demand of medical profession. Moreover, there has been a major paradigm shift in medical education from passive, didactic, teacher central approach to active clinical based and student centered approach.[5,6,7] The debate on how to teach anatomy in the most effective way continues, and there is not yet a workable solution to integrate the two lines of thoughts(teacher centered/student centered)that can resolve the dispute between the two approaches.[8]

The available literature on use of various instructional strategies employed for teaching and learning anatomy

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suggested that the challenges should not be to determine the superiority of one methodology over another but to capitalize on learning benefits offered by different methods.[9,10] Learners should have opportunity to use multiple resources, thus favoring flexibility in the acquisition of knowledge. Proper amalgamation of traditional teaching methodologies such as lectures, dissection and newer teaching method like PBL, TBL, CBL and computer-aided learning, would help to catalyze the shift from pedagogy to andragogy.[10]

MATERIALS AND METHODS

The present study had target population of 150 students who had completed one year of integrated curriculum and appeared in first professional in University of the Lahore. The questionnaire was developed after careful review and pretesting. The Performa was finalized and given to the students for their unbiased opinion. About 83.33% of the students (N=125) filled and returned the questionnaire. The questionnaire consisted of seven components dealing with: perception about subject, teaching methodology, and quality of lectures, teaching tools, and method of teaching, changes recommended and assessments. The response was categorized as Strongly Agree =1, Agree =2, Neutral 3, Disagree = 4 and Strongly Disagree =5.Strongly agree and Agree were grouped to gather as Agree and Strongly Disagree and Disagree were grouped to gather as Disagree. The data thus collected were fed to spreadsheet and converted to axe. file. Frequency and percentages along with Mean±SE were used for analysis.

RESULTS

The study comprised 125 students as respondents. Almost 51% of the respondents were male and rest were female (Fig 1).

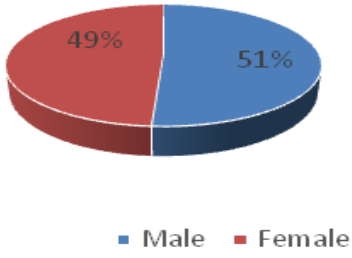

Figure No.1: Gender distribution of the respondents.

Perception about subject: The average response of the students was 1.91±0.104 as students found anatomy as an interesting subject. The majority of students agreed with the statement (80%) while rest (20%) was neutral or found the subject difficult to understand. The majority of the students (90.4%)were of the opinion that knowledge of anatomy was helpful in developing the understanding of clinical subjects with an average response of 1.62±0.073 (Table 1).

An average response of 1.71±0.069 was obtained in the question regarding the understanding of disease concept through integration (88.8%).

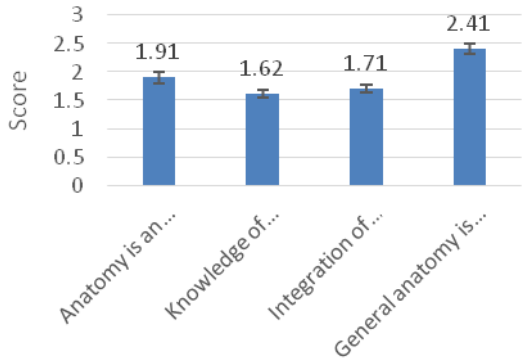

Figure No.2: Average subject perception.

Teaching methodology: The clinical correlation was done in anatomy lectures according to 74.4% with an average response of (2.13±0.087). As majority of the students (60.8%) were in agreement with the flow of lecture in delivery of contents and its impact on understanding of topics with an average score of 2.5±0.98 (Fig 3). The points highlighted during lecture and their explanation helped to improve the clarity and understanding of subject maters with an average response of 2.14±0.086 and 2.49±0091 respectively, (Fig 3)

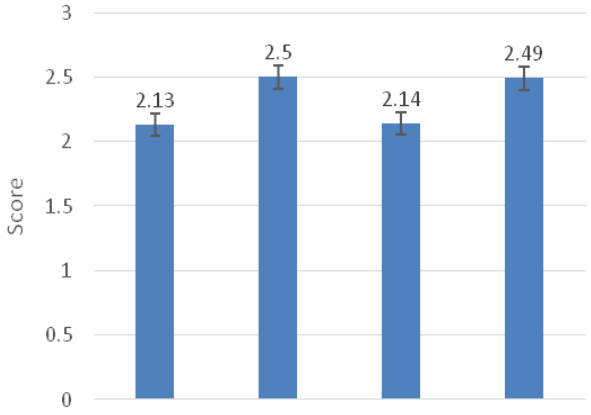

Figure No.3: Teaching and methodology.

Quality of Lecture: Three queries were made as regards the quality of lectures i.e. encouragement to ask questions, speed of delivery and teaching methodology used (Fig 4). About 68% of the students were in agreement with the statement that they were encouraged to ask questions with an average response of 2.26±0.095. (Fig 4)

Majority of students (56.8%) with an average response (2.47±0.095) agreed with the statement that delivery and pace of lectures was suitable to the level of understanding in the class.

About 60.8% of the students showed an average response of (2.52±0.099) which is towards agreement about stimulating the interest in subject with the use of lectures and demonstrations.

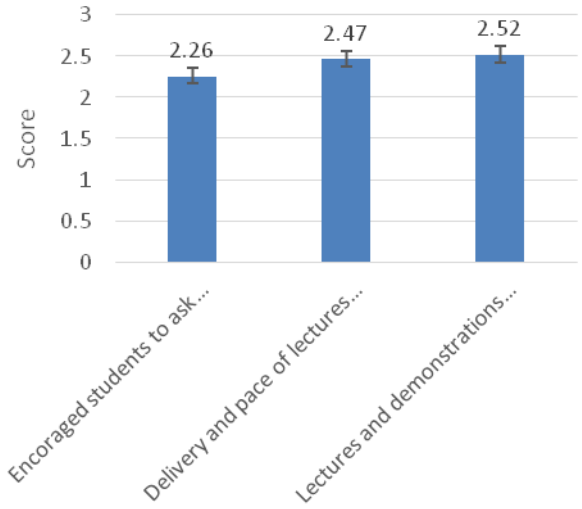

Figure No.4: Quality of Anatomy lectures

Teaching Tools: As concerns the readability of presentations and the ease of understanding of concepts and facts, the average opinion score were 2.35±0.089 with highest degree of agreement in opinion "Agree" (62.4%). About76.8%of students found displayed teaching material useful with average opinion score of 2.14±0.085. The 68.8% (Table 1) of the students agreed that the clinical case presentation and videos are helpful in better understanding of the subject with an average opinion of 2.25±0.109, (Fig5)

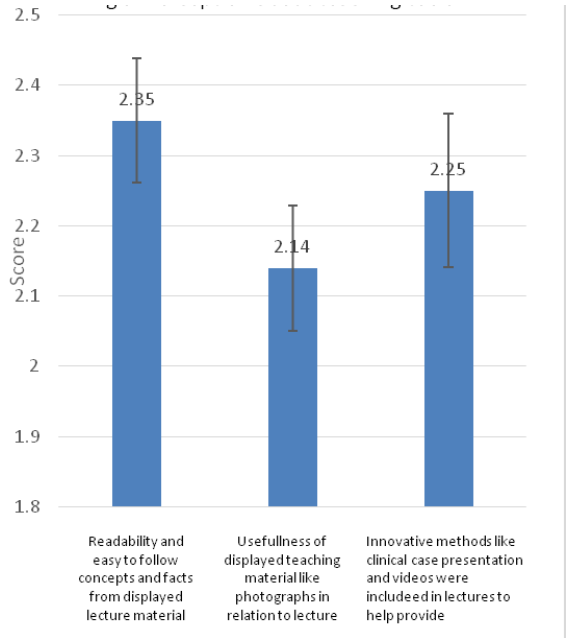

Figure No.5: Perceptoin about teaching tools.

Method of teaching: Most of students agreed with the statement "Didactic lecture is very effective teaching method in anatomy" but degree of neutral opinion was also high (26.4%) with average score of 2.49±0.100 (Table 1, Fig 6). A salient proportion of students (55.2%) were agreed upon power point presentation asan ideal method but again neutral opinion was also high (24.8%) with average score of 2.60±0.108.

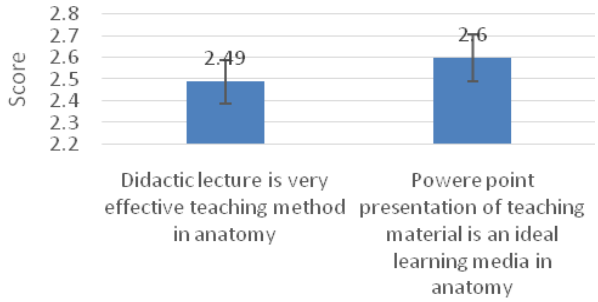

Figure No.6: Perception about method of teaching.

Changes recommended: About 70.4% and 68% of the students found the number and duration of the lectures adequate with an average response of 1.72±0.84and 1.66±0.77, respectively. 50.4%, 64.8% and 48.8% 0f the students recommended introduction of integrated teaching method, case based learning and group discussions respectively with an average opinion score of 1.63±0.064, 1.43±0.057 and 1.68±0.067, respectively. (Table 1, Fig 7)

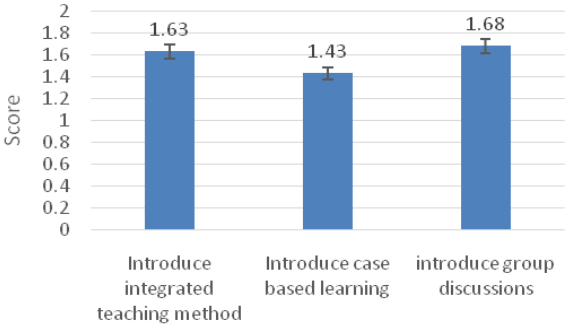

Figure No.7: Changes recommended.

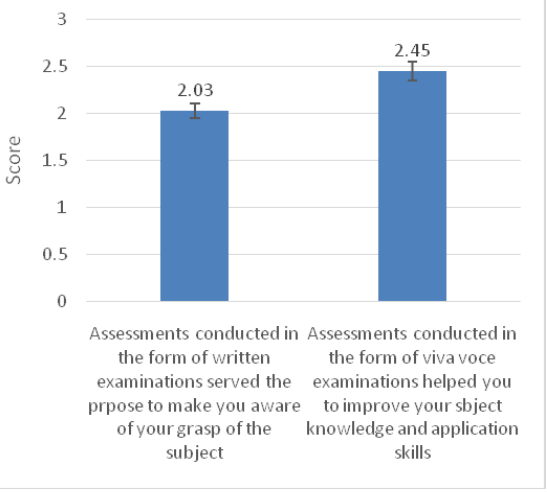

Figure No.8: Method of assessment.

Assessments: About 81.6% of the students were of the opinion the written exams were efficient method of assessment with an average score of(2.03±0.078). As consideration of the viva voce as an assessment tool is concerned 81.6% of the students agreed that it helps them to improve subject knowledge and application of skills with an average response of 2.45±0.097 (Table 1, Fig 8).

Table No.1: Perception of students about anatomy (percentage of respondents)

Query	Agree	Neutral	Disagree
Perception about subject			
Anatomy is an interesting subject	80%	10.4%	9.6%
Knowledge of Anatomy helps in clinical post	90.4%	6.4%	3.2%
Integration of Anatomy teaching with clinical help in better understanding of disease concept	88.8%	9.6%	1.6%
General anatomy is more difficult to understand than systemic anatomy	56.0%	28.8%	15.2%
Teaching methodology			
Teaching of clinical correlation is being done in anatomy lectures	74.4%	16.0%	9.6%
Flow of lectures clearly explained the content which help you to understand the topic well	60.8%	21.6%	17.6%
Highlighting of important points during lecture helped you for further study in each topic	68.8%	24.8%	6.4%
Explanation given to clarify the subject contents is satisfactory	58.4%	25.6%	16%
Quality			
Encouraged students to ask questions and give answers during lectures	68%	16.8%	15.2%
Delivery and pace of lectures was suitable to the level of your understanding in the class	56.8%	28.8%	14.4%
Lectures and demonstrations were taken in a way that stimulated interest in the teaching of subject	60.8%	20.8%	18.4%
Teaching tools			
Readability and easy to follow concepts and facts from displayed lecture material	62.4%	22.4%	15.2%
Usefulness of displayed teaching material like photographs in relation to lecture contents	76.8%	13.6%	9.6%
Innovative methods like clinical case presentation and videos were included in lectures to help provide understanding of the topic	68.8%	12.0%	19.2%
Exams			
Assessments conducted in the form of written examinations served the purpose to make you aware of your grasp of the subject	81.6%	12.8%	5.6%
Assessments conducted in the form of viva voce examinations helped you to improve your subject knowledge and application skills	81.6%	28.8%	11.2%
Methods			
Didactic lecture is very effective teaching method in anatomy	59.2%	26.4%	14.4%
Power point presentation of teaching material is an ideal learning media in anatomy	55.2%	24.8%	20%
Opinion about change recommended			
	Excess	Adequate	Inadequate
Number of lectures	19.2%	70.4%	10.4%
Duration of lectures	23.2%	68.0%	8.8%
	Agree	Neutral	Disagree
Introduce integrated teaching method	50.4%	36.0%	13.6%
Introduce case based learning	64.8%	27.2%	8.0%
Introduce group discussions	48.8%	34.4%	16.8%

DISCUSSION

The students' feedback is of immense importance for quality enhancement on both sides teaching and learning.[3] The present study was carried out at University of the Lahore. The second professional MBBS students (n=125/150) were given a well-structured and pretested questionnaire containing various queries to investigate their perceived opinion about teaching and learning of anatomy.

The average students found the anatomy an interesting subject. Most of the students agreed with the statement about subject's difficulty. The majority of the students were of the opinion that knowledge of anatomy was helpful in clinical understanding (90.4%). An average response of 1.71±0.069 was observed while understanding of disease concept by integration of anatomy teaching was the query.[11] Again, majority of students were of the opinion "agree" (88.8%). An and et al. (2015) also found that majority of medical students found knowledge and integration of anatomy useful while it was also found difficult subject.[3]

The clinical and classroom learning was being correlated in anatomy lectures according to students' point of view. All queries about contents were inclined towards agreement.[5] A majority of the students was in agreement with the flow of lecture in delivery of contents and its impact on understanding of topics. The students also found clinical correlation useful in a study by Goyal et al. (2010), Mostafa et al. (2012) and Sheikh et al. (2015).[12,4,13]

The points highlighted during lecture and their explanation helped improve the clarity and understanding of subject matters with significant degree

of agreements among the students. Quadri et al. (2016) also found similar results while conducting survey of the medical students.[14]

Three queries were made as regards the quality of lectures i.e. encouragement to ask questions, speed of delivery and demonstrations. The student's average response was towards agreement while a larger proportion of the students were with neutral along with signifying students.[2,11]

As concerns the readability of presentations and the ease of understanding of concepts and facts, the average opinion score was with highest degree of agreement in opinion "Agree". Majority of students found material displayed useful to a degree of "Agree". The 68.8% of the students testified the clinical case presentation and videos and found it helpful in better understanding of the subject. Nagar et al. (2012) and Shah et al. (2014) also found same results while investigating the teaching interventions and innovations in medical sciences professional classrooms.[2,11,15]

Most of students agreed with the statement "Didactic lecture is very effective teaching method in anatomy" but degree of neutral opinion was also high. A salient proportion of students was agreed upon power point presentation as ideal method but again neutral opinion was high with average also converging to it.[16,2]

The students found the number and duration of lectures adequate with highest percentage in "Adequate" option. The integrated teaching method, case based learning and group discussions got average opinion score of 1.63±0.064, 1.43±0.057 and 1.68±0.067, respectively with significant percentage of student in agreement to it.[2]

The students of medical sciences (81.6) were of the opinion the written exams were efficient method of assessment (2.03±0.078) of your grasp on the subject of anatomy. As consideration of the viva voce as assessment tool of subject knowledge and application skills, the 16.0% of the student were in "Strongly Agree" category while 44.0% were in "Agree" opinion category with average opinion score of 2.45±0.097. Goy et al. (2010), Mostafa et al. (2012), Nagar et al. (2012) and Quadri et al. (2016) reported results of their studies in the similar fashion and suggested continuity of the same standard procedures.[12,2,14]

Our study was not without limitations. This survey investigated opinions of students only which is not of conclusive evidence. Secondly, questionnaire was anonymously filled so we could not take into account any personal and context specific factors.

CONCLUSION

Integration of classroom and clinical knowledge with the improved interactive lecturing can help improve the medical teaching and learning.

Author's Contribution:

Concept & Design of Study:	Humaira Gulnaz
Drafting:	Noor Ijaz
Data Analysis:	Saqib Mansoor, Nabila Kaukab
Revisiting Critically:	Humaira Gulnaz, Noor Ijaz
Final Approval of version:	Humaira Gulnaz

Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

1. Neumann R, Neumann R, Of V. Assessment & Evaluation in Higher Education Communicating Student Evaluation of Teaching Results : Rating Interpretation Guides (RIGs) Communicating Student Evaluation of Teaching Results : Rating Interpretation Guides (RIGs). 2010;2938(May).
2. Nagar SK, Malukar O, Kubavat D, Prajapati V, Ganatra D, Rathwa A. Students' Perception on Anatomy Teaching Methodologies. Natl J Med Res 1992;2:111–2.
3. Anand MK, Lakhanii CJ, Javia MD. The role of medical student's feedback in undergraduate gross anatomy teaching*. 2015;(March).
4. Amr M, Saeed U Al, Shams T. Medical students ' perceptions of teaching evaluation in psychiatry. J Educ Res Rev 2012;1(November):81–4.
5. Rafique S, Rafique H. Students' feedback on teaching and assessment at Nishtar medical college, Multan. J Pak Med Assoc 2013;63(9): 1205–9.
6. Singh V, Kharb P. A paradigm shift from teaching to learning gross anatomy: Meta-analysis of implications for instructional methods. J Anat Soc Ind 2013;62(1):84–9.
7. Khan SM. Original Article 2014;3(57):12939–45.
8. Dole S, Bloom L, Kowalske K. Transforming Pedagogy : Changing Perspectives from Teacher-Centered to Learner-Centered The Interdisciplinary Journal of Problem-based Learning Transforming Pedagogy : Changing Perspectives from Teacher-Centered to Learner-Centered. Interdiscip J Probl Learn [Internet]. 2015;10(1). Available from: at: https://doi.org/10.7771/1541-5015.1538
9. Turney BW. Anatomy in a modern medical curriculum. Ann R Coll Surg Engl 2007;89(2): 104–7.
10. Bhalli MA, Khan IA, Sattar A. Original article learning style of medical students and its correlation with preferred teaching methodologies and academic achievement 2015;27(4):837–42.

11. Shah A, Shethwala N, Parmar B. Perception of undergraduate medical students towards the subject of Pathology at one of the Medical Colleges of Gujarat, India. Int J Med Sci Public Heal [Internet]. 2014;3(7):863. Available from: http://www.scopemed.org/fulltextpdf.php?mno=156733
12. Goyal M. Perceptions and suggestions of 2nd professional MBBS students about their teaching and learning process: An analytical study 2010;1(4).
13. Sheikh NA, Nirgude AS, Ramanaiah TV, Naik PR. Development research 2014;4:1705–8.
14. Quadri SSS, Srujana S, Mahesh S, Bheeshma B. Undergraduate medical students' feedback and perceptions on teaching learning methodology in Pathology at Government Medical College 2016;3(7):28–35.
15. Kulkarni UJ, Mumbai N. Introducing integrated teaching in undergraduate medical 2010;1(1): 18–22.
16. Lata H, Walia L, Gupta V. Student feedback on teaching and evaluation methodology in physiol 2008;2(1):31–7.