

Attitude and Perception of Private Medical Students While Working in the Anatomy Dissection Hall

Muhammad Omar Ahmad,¹ Usama Tariq,² Muhammad Bahadur Baloch,³ Javeria Noor,⁴ Maryam Fatima,⁵ Sarah Khalid⁶

Abstract

Objective: To assess the attitude and perception of medical students towards anatomy learning while in the dissection hall

Material & Method: This was a cross-sectional study carried out at the anatomy department of Shalamar Medical & Dental College Lahore from Editor from 31st March 2019 to 11th December 2019. Responses from 272 MBBS students of 1st and 2nd year from private medical colleges of Lahore were obtained using a Google form through a questionnaire with questions relevant to their experience in the dissection hall & their satisfaction levels. Statistical analysis was carried out using SPSS version 20, and a p-value < 0.05 was taken as statistically significant.

Results: A significant percentage of students felt that dissecting cadavers by themselves helped them in a better understanding of anatomy. Most students (72 %) emphasized that the teaching of gross anatomy must be modified to fulfill the needs of clinical teaching. A total of 50% of the students felt that the time given for anatomy teaching in the dissection hall should be readjusted. Around 24% students were inclined to modernize anatomy by integrating it with other subjects.

Conclusion: Most students were in favor of cadavers being crucial for anatomy teaching, but with that readjustment of sub-specialties of gross teachings is the need of the day. Also, the use of 3D Anatomy in combination with cadavers is a helping tool for better understanding of anatomy concepts.

Keywords: Anatomy, Medical Students, Dissection

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Introduction

Students and teachers both consider anatomy as an important subject in medical curriculum with regards to the clinical knowledge.¹ Comprehensive knowledge of anatomy plays a vital role in proper understanding of the further clinical disciplines. It remains an integral component of medical education crucial for introduction

to the language of medicine and surgery.²

Teaching and learning anatomy for the undergraduates are the testing elements for the mentors and students alike. In traditional terms, anatomy teaching is based on face-to-face interaction amongst students and facilitators in the lecture hall, models based practical demonstrations and cadaveric dissections to deliver the core anatomical knowledge.² Despite the introduction of new effective learning aids comprising of virtual dissecting room, interactive 3D digital models and students' personal gadgets for youtube learning, the dissection of the cadaver still stands as the significant learning method for special orientation and true exposure of the human anatomy.^{3,4} Without the exposure, a considerable disruption is felt in teaching the visual subject.⁵

Anatomy is taught in first 2 years of medical school

1,2,4-6. Shalamar Medical & Dental College Lahore

3. Department of Anatomy, CMH Lahore Medical College & Institute of Dentistry

Correspondence:

Muhammad Bahadur Baloch, Assistant Professor, Department of Anatomy, CMH Lahore Medical College & Institute of Dentistry

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which includes subspecialties of gross anatomy, embryology, histology and neuroanatomy.⁶ Reconstruction of the core anatomy curriculum as well as teaching methodologies need attention worldwide owing to the cadaver shortage, and recent advances in clinical and technological fields. Subsequently, there are less hours being allocated to the anatomy curriculum.^{7,8} Also, the changes in the curricula have generated disagreements regarding teaching styles, course content, clinical relevance and time allocated to anatomical courses.³ Over the decades, members of the clinical faculty have shown a great concern over the current standards of anatomical education.³ Changes in the undergraduate medical curriculum have taken place, however, without any research into the key aspects of knowledge necessary or without comparing methods of teaching. In this study, perception of students towards anatomy teaching was, therefore, analyzed.

Material and Methods

It was a descriptive cross-sectional study conducted in Anatomy Department of Shalamar Medical & Dental College Lahore from Editor, after taking approval from Institutional Review Board of Shalamar Medical and Dental College Lahore. Study was conducted from July 2018 to December 2018. A total number of 300 MBBS students of 1st and 2nd year from private medical colleges of Lahore were included in the study. After explaining the main purpose of study, written informed consent was taken from each participant and a self-administered questionnaire was distributed to students which included about 10 to 11 questions related to the study. The questionnaire included basic information of the participants and the closed ended type of questions relevant to their experience in the dissection hall. Other questions were related to their satisfaction level. Responses were collected and completed by using Google form. Simple convenient sampling technique was used to collect the data. Only 1st year and 2nd year students of Shalamar and provide from other medical colleges of Lahore were included in this study. BDS and other discipline of sciences were not included in the study. Statistical analysis was carried out by using SPSS version 20, frequencies and percentages were calculated and p value < 0.05 was taken as statistically significant.

Results

Out of the 300 MBBS students of 1st and 2nd year, 272 filled in the response. There were 113 students from

1st year and 159 students from 2nd year MBBS. According to our research, 87% of the students considered cadaver dissection important for learning and grasping better concepts of anatomy. In addition, a significant percentage of students felt that dissecting cadaver by themselves helped them in better understanding of anatomy as compared to the already dissected body parts and just remembering the objective structured practical examination (OSPE) points from them (p<0.001) (Table-1). Majority of students emphasized that teaching of gross anatomy (p<0.05) must be modified to fulfill the needs of clinical teaching. However, a small percentage responded that surface anatomy teaching must be modified and 10% undergraduate students responded that teaching of the developmental anatomy must be modified. The microscopic anatomy was suggested by 12% to be taught in the light of clinical pathology. A total of 76.1% students felt that time given for anatomy teaching in dissection hall should be readjusted (p<0.05). Response of students regarding the gross anatomy subspecialty was assessed and it was seen that approximately 50% of students considered no change in time allocation to upper limb lower limb and thorax. But at the same time more than 50% of the students considered increasing the time allocated to head & neck and thorax regions. Questions about their experience were asked to assess the satisfaction of students regarding the topics covered in the dissection hall and demonstrations being clinically correlated or not. Around 72% were of the view that major topics of gross anatomy taught were clinically correlated and 86% considered anatomy essential for future surgery comprehension. Most of students have a perception that anatomy should be taught in combination with clinical subjects in all five years of medical curriculum. Moreover, 64 students were inclined towards modernizing anatomy by integrating it with other subjects (Table-2). Students were of belief that anatomy taught in the dissection hall inculcates the professionalism (68%), team building (17%) and other competencies including interpersonal relationship (13%) besides learning (2%) in them.

Table 1: Importance of cadaver dissection.

| Questions | Very Important | Less Important | Not Important |
|---|----------------|----------------|---------------|
| Is cadaver important for learning anatomy | 87% | 9% | 4% |
| Dissection by myself is better help in learning anatomy as compared to prosected specimen | 68% | 20% | 12% |

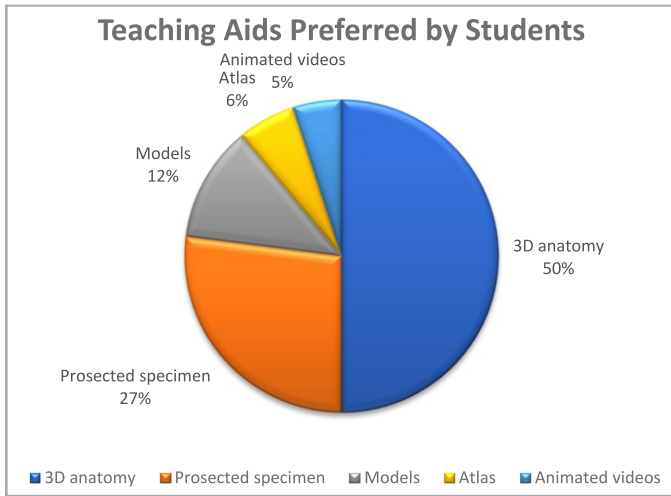


Fig-1: Teaching Aids preferred by students.

Discussion

The knowledge of anatomy forms the basic window

Table 2: Anatomy modernization for developing concepts

| | Reduction in amount of factual knowledge | 49 | 18.014% |
|--|--|-----|---------|
| How should anatomy be modernized, if it is really going to be useful in developing concepts? | Integrated with other basics subjects | 64 | 23.53% |
| | Increased course content of surface and radiological anatomy | 19 | 6.985% |
| | Taught in combination with clinical subjects in all five years of medical curriculum | 100 | 36.76% |
| | More stress should be given to applied aspects | 35 | 12.86% |
| | Increase emphasis on PBL /CBL | 5 | 1.838% |

towards the future clinical scenarios. All medical curricula have anatomy integrated. Not long ago, the transfer of the anatomical knowledge was solely synonymous with dissection. One study has clearly depicted “dissection” to have the pivotal role in anatomy teaching and learning stating, “It is best to begin the anatomy teaching with the cadaver”. Present study reported that dissecting cadaver by students helped better understanding of human anatomy which is in accordance to the previous studies.^{7,9,10} Similarly, a large majority of students in this study favored dissection as the tool for better comprehension of the subjects` concepts. However, this mode of instructional delivery has been limited by the cadaver availability and ethical and legal concerns. The students are, subsequently, bereft of dissection to learn anatomy in the three-dimensional perspective.⁷

The students of current generation have more prompt

access to the available information through electronic media. There are contemporary gadgets like audio-visual aids, virtual dissection tables, anatomy mobile applications in addition to the artificial anatomical models and viscera utilized for technology-based learning. Nonetheless, it was observed that students preferred them as supplements rather than replacement of the dissection altogether.^{7,11} The 3D Anatomy atlas was the most indicated aid in our study probably due to its free availability and immediate accessibility. Around 50% of the students considered 3D Anatomy as a helping tool for learning concepts of anatomy which is similar to studies done by Mitrousias V et al. where students using the 3D software showed better performance in examinations, compared to students using prosection.¹² Education in context implies using core subject knowledge to solve clinical problems: unless students dynamically relate concepts, information will remain static and will eventually become extinct. Modification of teaching Anatomy and its subspecialities was, subsequently, highlighted by the students of our institute to emphasize more on the practical learning. Studies have revealed better outcomes of students` learning with the use of more than one practical teaching modalities.¹¹ However, the use of hands-on practical instruction will always be integral to students learning of anatomy in terms of concept building, information recall and overall subject spatial clarity.⁷ The most commonly applied techniques of anatomy teaching are face-to-face based demonstrations and on campus lectures. After pandemic, online-teaching was added to the traditional in-class method. While students were found to be inclined towards modification and digitalization of the anatomy subspecialities, the introduction of new methods are nowhere to replace the traditional dissection.¹¹

The reduction in undergraduate teaching and knowledge of anatomy has caused great concern not only for the clinicians but also for the under and postgraduate students especially in surgery; tales of surgeons wearing black arm-bands to signify the death of anatomy have been promulgated in history.¹³ Previous studies showed that adequate time was not allocated in the anatomy curriculum, which is similar to current study which shows that inadequate time being given to head & neck and abdomen pelvis regions.¹⁴ This opinion of limited time allocation is further supported by Kumar et al. where the inadequate time for anatomy instruction has its impact on the quality of knowledge of the

graduating doctors with reference to the embryology comprehension based diagnosis of the developmental anomalies.¹⁴

The satisfaction is although a subjective phenomenon, becomes considerable as to the correlation of anatomy with the clinical subjects involving different teaching modalities. With majority of students satisfied with the clinical correlation of the subject, this reflected confidence of the students on the vertical and horizontal integration incorporated with the clinical knowledge.¹¹

The results of the study conducted by Sarkar et al. are in accordance with our findings depicting high levels of students' satisfaction with the blended learning.¹⁵

Previous studies show integration of anatomy into clinical sciences has more effect of retention of knowledge, which is according to our study conducted where 37% opinioned that anatomy to be integrated in all clinical years of anatomy.¹⁶ The covid experience together with more inculcation of the medical education in anatomy has led to profound changes in the anatomy curriculum. The biggest one is the change in its role from being a basic subject to more of a practical subject with well clinical integration. This transition could be foreseen in the perception of larger part of the students to bring about changes in anatomy curriculum where it is taught in combination with clinical subjects in all five years of medical school. It is to ensure self-directed learning environment thought to be more beneficial in attaining the required professional development.

Conclusion

Most students were in favor of cadavers being crucial for anatomy teaching but with that readjustment of sub-specialties of gross teachings is the need of the day. Also, the use of 3D Anatomy in combination with cadavers is a helping tool of anatomy concepts better understanding.

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Authors Contribution

MOA, MBB: Conceptualization of Project
FSK, UT: Data Collection
MOA, JN: Literature Search
FSK: Statistical Analysis
JN, MBB: Drafting, Revision
JN, MBB: Writing of Manuscript