

1st MBBS professional student's perception on teaching & learning methods of anatomy, before and at the time of COVID-19 pandemic

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ABSTRACT

Objectives: COVID-19 pandemic has brought challenges to learn the anatomy subject for the students. Perception & online opinion has been taken from the students of SVS medical college, Mahabubnagar, on teaching and learning methods of anatomy, before and at the time of covid-19 pandemic

Materials and Methods: students feedback has been collected through google forms - online survey opinion & Inputs were collected from the 113 MBBS students of the academic year 2019-2020, who had just completed their first year syllabus in both offline and online teaching methods, before lockdown and after lockdown (September-2019 to December-2020). Present study was done by using specially designed questionnaire comprising of points relating to the present curriculum in anatomy & teaching methodology at SVS Medical College, Mahabubnagar.

Results: Students point of view, online teaching like streaming (ZOOM MEETING, GOTO MEETING & CISCO WEBEX) was not that much effective. Majority of the students opted for the best method for online teaching was recorded video or voice over PPT'S are the best option than the online streaming classes. Finally the students have opted for Traditional teaching like chalk & talk followed by PPT Presentation. Gross anatomy was mainly learned by the dissections involved by the students and faculty side by side. Histology was mainly learned by spending the more time on the microscope & involved in small group teaching. Embryology was mainly understood by small group teaching with the help of 3D models.

Conclusion: The study concluded that the chalk and talk teaching followed by PPT'S, dissection by the students along with the faculty and spending more time on the microscope with small group teaching were the best methods to approach the anatomy subject.

KEY WORDS: Students perception, Anatomy teaching learning methods, online and offline, chalk & talk, dissection.

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INTRODUCTION

The ongoing COVID-19 pandemic has led the majority of countries to implement emergency lockdown plans to limit the spread of the virus. Lot of difficulties for students to study

and understanding the subjects like anatomy. Particularly without doing the regular dissections, and by using the real bones and 3D models of embryology. As a result learning process becomes very unpleasant task leads

to frustration & also losing self-confidence. Students encounter their first teacher and patient as well, they should work based on the professionalism. [1, 2]. Using of cadavers has been the chief pillar for anatomy [3]. However the limited availability of cadavers, the difficulties imposed by the ethical issues for their use, among arguments [4].

Early clinical exposure (ECE) is one of the teaching learning methodology is exposure to the patients as early as the first year of the medical college[5]. However there is an ongoing discussion on the amount, the appropriate time, and the best methodology to teach anatomy [6].

Use of power point has been increased among the educators and these educational technologies are commonly used for classroom teachings in medical education [7]. New curriculum needs to be done keeping in mind the opinion of the students and their feedback regarding the best teaching methodology and the appropriate techniques to evaluate their knowledge and skills [8]. Many institutions have been adapted to google classroom, zoom meetings, cisco webex meetings and Goto meeting etc. because of quick transmission from contact learning to exclusively distance learning remained challenging for both teachers and the students and required a lot of preparations and other efforts in a short time[9,10].

RESULTS AND OBSERVATIONS

MATERIALS AND METHODS

Present study was conducted by the faculty of the department of anatomy, SVS Medical College, and Mahabubnagar (TS). Inputs were collected from the 113 MBBS students of the academic year 2019-2020, who had just completed their first year syllabus in both offline and online teaching methods, before lockdown and after lockdown (September-2019 to December-2020).

Present study was done by using specially designed questionnaire comprising of points relating to the present curriculum in anatomy & teaching methodology at SVS Medical College. The students briefed about the questionnaire and asked to respond freely and fearlessly. They were informed that the information furnished by them is for the research and evaluation purpose only and will be kept confidential. Who were absent and refused to give consent were excluded (37 students). Nineteen multiple choice questions which were easily comprehensible relating to the current teaching practices of anatomy were sent to the students using an online platform (google forms). The students could take the survey at their comforts, without giving their names and roll numbers. Students were able to answer the questions freely and unbiased manner. The set of questions in the survey was validated by the head of the department and other senior faculty.

Table 1: Teaching methodology.

S.no.	Type of question	Options given	%
1	Best method to learn anatomy subject	A. Online teaching	6
		B. Offline teaching (traditional teaching method)	74
		C. Both	20
2	Subject mainly understood by	A. Didactic lecture	11
		B. Small group teaching	60
		C. Small group presentation	7
		D. Self-directed learning	11
		E. Written assignments seminars	11
3	Appropriate way for integration	A. Should be taught by clinicians	12
		B. Problem based learning	50
		C. Early clinical exposure	38
4	Topic requires more time to learn	A. Gross anatomy	32
		B. Embryology	8
		C. Histology	4
		D. All of above	56
5	In view of covid-19 pandemic which type of teaching method was more effective	A. Live streaming (zoom/webex)	34
		B. Voice recorded PPT / video	58
		C. Online study material	8

Table 2:Gross anatomy.

S.no.	Type of question	Options given	%
1	Best teaching method for theory class	A. Overhead projector	3
		B. Only power point	5
		C. Only chalk and talk	8
		D. Chalk and talk + PowerPoint presentation	84
2	Anatomy theory concepts more easily understood by	A. Blackboard teaching	13
		B. Multimedia teaching	19
		C. Teaching at the dissection table	68
3	Best teaching method for neuroanatomy	A. OHP	2
		B. Only power point	7
		C. Only chalk and talk	10
		D. Chalk and talk and power point	81
4	How many students should be there atone dissection table	A. 10	27
		B. 15	31
		C. 20	23
		D. 25	17
		E. 30	2
5	Preferred teaching method for dissection	A. Dissection by the faculty only	3
		B. Dissection by the student only	0
		C. Faculty and students both should dissect side by side	93
		D. Prosection	0
		E. By the help of dissection videos	4
6	Best possible solution for problems in dissection practicals	A. More visual aids to be used in the dissection hall	29
		B. Additional time is required for dissection and tutorials	35
		C. Clearer explanations lectures / tutorials	36
7	Dissections are more easily understood by	A. Group discussion at the time of dissection	46
		B. By using 3D models at the time of dissection	28
		C. Dissection with the help of dissection videos	14
		D. Dissection with the help of atlas	12
8	Best teaching method would prefer for osteology	A. Like theory, entire batch should be taught by using PPT	1
		B. Small group teaching by using bones & holding the bones by the students also	60
		C. Demonstration on the bone, along with the PPT & also bones given by the students	39

Table 3: Histology & embryology.

S.no.	Type of question	Options given	%
1	Preferred learning method for histology	A. Only by theory	2
		B. Only by practicals	6
		C. Theory + practicals	92
2	Problem in understanding in histology	A. Slides looks similar	15
		B. Lack of audio – visual aids	2
		C. Insufficient time for observation under the microscope	2
		D. Difficult to identify the tissues on the slide	16
		E. All of above	65
3	Preferable solution for histology practical difficulties	A. Spending more time on “observing under the microscope”	50
		B. Simplify the concept / give less details / make the differences clearer	40
		C. Use more visual aids including 3D models	6
		D. Require more time for theory and practicals	4
4	Embryology is mainly understood by	A. Theory class alone	2
		B. Demonstrations alone	12
		C. Theory followed by demonstration	86
5	Specific problem understanding embryology	A. Inability to visualize	12
		B. Inability to comprehend sequence of events	17
		C. Inadequate of time	6
		D. All of above	65
6	Best possible solution for problems in embryology	A. Require more lectures and time	10
		B. Teaching on 3D models	42
		C. Simplify the concept / give less details	48

DISCUSSION

Extensive changes have taken place globally to improve the standards of education. The

concept of medical education has changed a lot, nowadays access to internet, online journals, educational videos and the

conferences are the newer concepts of teaching. To achieve goal and teaching methods have evolved.

A new medical curriculum have been develops in response to requirement of students and institution. Feedback of students is useful basis for improvement and modifications. It helps to know the strength and weakness of the teaching methodology. The present study is important to because majority were satisfied with various aspects of lectures being delivered, explanatory lectures, relevance of displayed material and language used. According to Rokade. SA et al in 2013 [11] reported that majority of students (more than 2/3rd) expressed that the chalk and board method was more interesting than power point presentation. In the present study best method for theory classes opted for both blackboard and PowerPoint (84%). The best method of learning in the dissection hall was teaching on the cadavers (S K Nagar, OjaswiniMalukar in 2012) [12]. Cadaveric dissection is favourable approach for achieving important learning objectives in the field of anatomy (Chapman SJ, Hakeem AR et al 2013) [13] in the present study students preferred teaching for dissection practicals on the dissection table students and the faculty should involve at the same time (93%). According to the students possible solution for gross anatomy practicals were tutorial utilizing more 3D aids such as models, computer programmes videos and prepared specimen (28%), more time for particular topic for group discussion and tutorials (46%) in the present study, proposed solutions to problems were, group discussion at the time of dissection (B Karmer and J T Solely in 2002)[14]. In present study majority of the students (65%) who faced problem in understanding histology were having difficulties in all above mentioned areas (65%).

Students indicating the problem to understand embryology stemmed from an inability to visualize, comprehend the sequence of events which characterise developmental process, particularly 3D and inadequate time and sequence followed in lectures (B Karmer and J T Solely in 2002)[14]. In present study, students

inability to visualise 12%, inability to comprehend sequence of events (17%), inadequate time (6%), and students were included all of above options (65%). Proposed solutions for problems in histology were, scheduling of more lectures to provide additional time to better assessment the work using more visual aids (photographs, slides, diagrams and 3D models)(6%); restructuring of lectures (40%); and simplifying the information by including summaries and tables (BKarmer and J T Solelyin 2002)[14].

In present study according to 50% students opted as a best solution for histology problems was, spending more time on the microscope for the observation and followed by simplifying the information/giving less details/making differences clear(40%). Students find theory classes more comprehensible when traditional teaching methods (blackboard) are used (Abdul monem Al-Hiani and Gamal S. Abd El-Aziz in 2008) [15]. In present study, 68% of students theory classes are more comprehensible when teaching on dissection table followed by blackboard teaching followed by 15 min PowerPoint presentation (84%). Majority students find perception of practical anatomy classes more comprehensible when traditional teaching method are used (Abdul monem Al-Hiani and Gamal S. Abd El-Aziz in 2008) [15]. In present study, variable opinion of the students about the practical anatomy classes, when multimedia (19%) methods were used and teaching at dissection table (68%).

Jaiswal et. Al. study reviled that the method of learning anatomy practical was dissection (89.14%)[15]. However on our study, students chose dissection under the guidance of expertise and also group discussion at the time of dissection, as a good way of learning of anatomy. 93% of the students opted for, faculty and students should involve in the dissection side by side.

Feedback on integrated teaching as a learning module for students was introduced as talk by physicians and problem-based learning; however it was not well appreciated. Students felt that exposure to the clinical side wherein small groups taken to the hospital to demonstrate to relevant case/procedure/examination

would have a more significant impact. Nagar's et. Al. Study only emphasized the usefulness integrated teaching (70.80%).[12]. As a new teaching learning initiative, we introduced the formation of an anatomy mentor cell where poor performing students were identified during the first assessment and where guided by specific teacher guardians assigned to them. We took an opinion on problem based learning (50%) and early clinical exposure (38%).

CONCLUSION

Hence, perception of a learner is of paramount importance when importing knowledge

Conflicts of Interests: None

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