

A COMPARATIVE STUDY ON ANALYSIS OF VARIOUS TEACHING LEARNING METHODOLOGIES IN ANATOMY

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ABSTRACT

Background: Teaching medical students the subject of Anatomy has always been a challenging task. This study was conducted to understand the student's perspective of the various methodologies of teaching and learning in Anatomy.

Materials and methods: This study was done in Sree Balaji Medical College and Hospital, Chennai. In this study a questionnaire was prepared, where in there were 12 questions, which was circulated to the MBBS students of 1st year and second year. The questionnaire had questions as to which modality of teaching gives better understanding of Anatomy. The results obtained were tabulated.

Results: The results showed that cadaveric dissection gave better understanding. A power point presentation on a topic followed by dissection of same topic was well appreciated. Students preferred small group teaching with wet and dry specimens to didactic lectures using power point. A good feedback was obtained for problem based learning also.

Conclusion/ Implication: After analyzing the observations it can be concluded that small group teaching in the form of cadaveric dissection or demonstration is the method which the students feel is best to understand Anatomy. Problem based learning also has conferred a lot of advantages in making the students analyze and correlate Anatomy with its clinical implications. The modern methods of teaching anatomy in lecture hall with power point presentation or virtual anatomy is only a supportive method to understand anatomy.

KEY WORDS: Questionnaire, dissection, problem based learning, cadaver.

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INTRODUCTION

Anatomy teaching has a long history in formalised medical education [1]. Medical students in India enter the medical schools as early as 17 years of age. There is a drastic change in the method of teaching and the course content as compared to their school curriculum.

Teaching anatomy especially cadaveric dissection is a totally new teaching modality for them. Studying human Anatomy through cadaveric dissection started as early as 3rd century BC in ancient Greece. This practice slowly dwindled and it was revived back during 14th century BC in Italy [2]. Soon human dissections turned to

sessions of public events. Later on anatomical teaching became much advanced. With the advent of strict laws regarding cadaver procurement, cadaveric dissection teaching was replaced by theoretical teaching by using of modern teaching modalities like power point presentation and virtual anatomy in many institutions[3]. The latest inclusion to this teaching modality is Problem Based Learning (PBL). This study aims at analysing the feedback of what the student feels about the various methodology used in teaching Anatomy.

Aim and Objective: Our study is aimed at comparing the efficiency of the various teaching modalities in anatomy focusing mainly on small group cadaveric dissection teaching and large group teaching with images using Power Point presentations. The objective is to identify the best teaching modality and allot more time towards teaching medical students using that teaching modality.

MATERIALS AND METHODS

This was an analytical questionnaire based study done in Sree Balaji Medical College and Hospital in the year 2018. A questionnaire was prepared using Google forms. This was validated and approved by ethical committee and ethical clearance was obtained. This questionnaire had 12 multiple choice type questions and was prepared using the software Google Forms. Of these questions 4 are personal information questions, and 8 are questions regarding comparison of cadaver based dissection teaching and large group teaching using power point presentations. This questionnaire was circulated among the 1st year and 2nd year M.B,B.S. students of Sree Balaji Medical College and few other medical colleges in and around Tamil Nadu.180 responses were obtained. The responses were anonymous. The results thus obtained were compared tabulated and charted.

RESULTS

Based on the responses obtained from the questionnaire the results were analyzed and tabulated. This helps to compare various modalities of teaching and which method of teaching is more effective in making the students understand the subject easily. There were 180 responses and the respondents are

between the age of 17 and 22 years. The responses were from students of two medical schools in Chennai, India, studying in the first and second year MBBS. Majority of students agreed that teaching Anatomy through power point presentation gives better understanding of the subject (71%) (Figure 1). A great majority of students felt learning Anatomy through cadaveric dissection (92%) helps to understand Anatomy better (Figure 2). Similarly majority of students (93%) preferred small group teaching using wet/dry specimens (Figure 3). The students felt 2 hours of dissection teaching was sufficient (90%) (Figure 4). 85% of the respondents felt lecture class on a topic followed by dissection of the same region gives good understanding, (Figure 5) whereas only 69% felt cadaveric dissection followed by lectures of the topic is more helpful (Figure 6). The overall understanding of the subject was found to be better through cadaveric dissection (51%) followed by small group teaching (44%) and lecture classes (3.9%) (Figure 7). The newer method of problem based learning was found to give better understanding (93%) (Figure 8).

Fig. 1: Pie chart showing results of the question: Teaching Anatomy in classroom with power point presentation helps in better understanding of the subject.

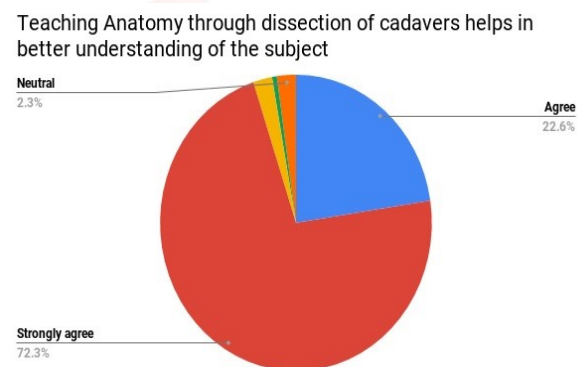


Fig. 2: Pie chart showing results of the question: Teaching Anatomy through dissection of cadavers helps in better understanding of the subject.

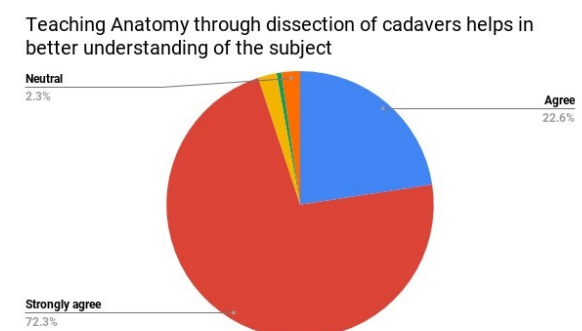


Fig.3: Pie chart showing results of the question:Teaching Anatomy in small group with dry or wet anatomical specimens helps in better understanding of the subject.

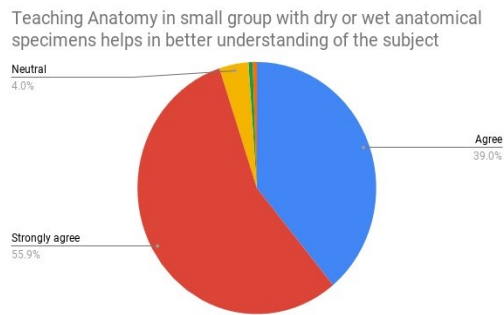


Fig. 4: Pie chart showing results of the question: Time allotted for dissection (2 hours) is sufficient?

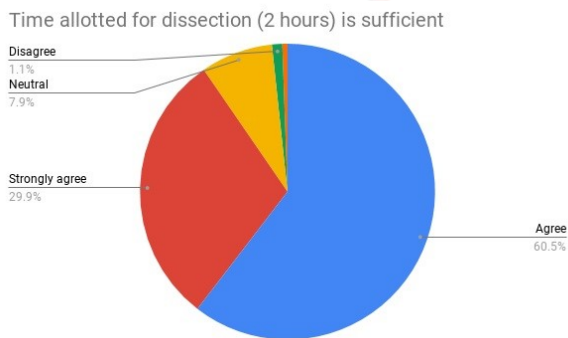


Fig. 5: Pie chart showing results of the question: A lecture class on a topic followed by dissection of the same region gives better orientation to the subject.

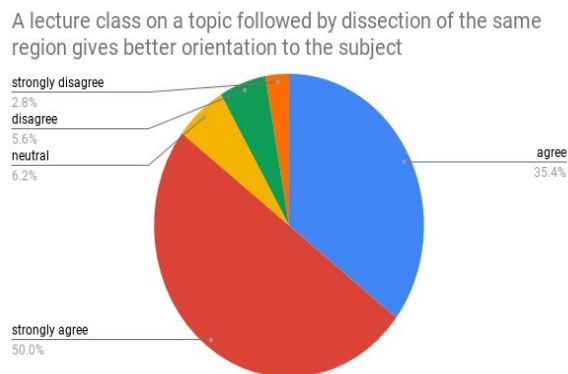


Fig. 6: Pie chart showing results of the question: Dissection of a region followed by lecture (large group teaching) on the topic gives better orientation of the subject.

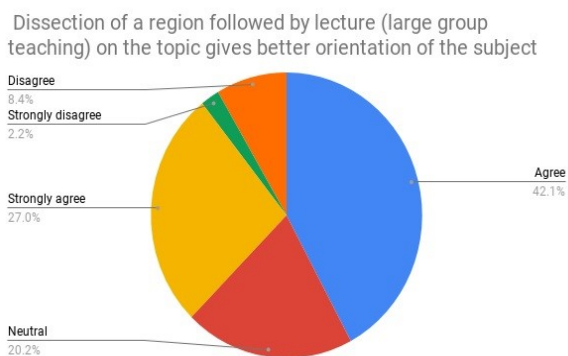


Fig. 7: Pie chart showing results of the question: My understanding of the subject is better using this method of teaching.

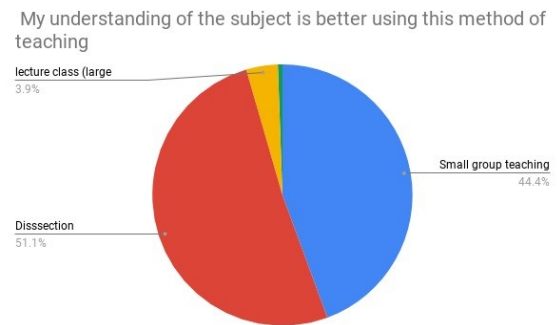
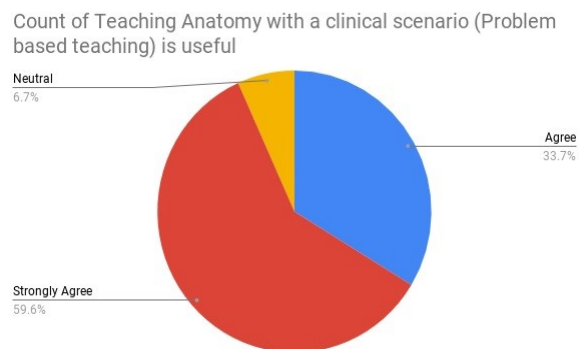


Fig. 8: Pie chart showing results of the question: Teaching Anatomy with a clinical scenario (Problem based teaching) is useful?



DISCUSSION

The responses obtained from this study have concluded the effective teaching methodology to be adopted for anatomy.

47% of the students have agreed and 20% of the students have strongly agreed that PowerPoint presentation helps in better understanding of the subject. A study by done in Longwood university United states also states that students actively involved in the learning process when they see are taught using power point slides rather than just listening to orations.[4] 55% of the students have strongly agreed and 40% of the students have agreed that teaching anatomy with wet/dry specimen in small groups help in better understanding due to the individual attention that they obtain. At St. Matthew's University (SMU) on Grand Cayman a study small group teaching with anatomy specimens concluded that it has a positive impact on the academic achievement of the undergraduate students.[5] 90% of the students felt that the time allotted for dissection(2 hours) is sufficient. 50% of the students strongly agree and 35% of the students agree that when a lecture is given and when

the same region is dissected in small groups it gives better orientation to the subject.

27% of the students strongly agree and 42% of the students agree that dissection of region in small groups followed by a lecture (large group teaching) gives better orientation to the subject. Cadaveric dissection has been considered to be the best method of teaching (52%) which ascertains the view of Dinsmore C E et al [6], followed by small group teaching with dry/wet specimen (44%). 66% of the students strongly agree and 30% of them agree that PBL (Problem Based Learning) is effective and helps in various clinical interpretation.

A similar study was conducted by Nagaswamy S. Vasan, David O. DeFouw, Scott Compton.[7] The survey was mainly conducted to come to a conclusion as to which method of teaching is more effective. TBL (Team Based Learning) was adopted. Lectures were replaced with small group discussion. When survey was conducted medical students irrespective of grades favored TBL. Since 2009 students prefer TBL. One of the small group learning method is dissection. In a study which was a review of various teaching methods, concluded that in comparison to other methods, traditional dissection proved to be more advantageous.[8] The concept of introducing the students to the method of dissection was considered very useful by the students. About 40% of them expressed a desire for repeated discussion. The results were obtained through a questionnaire which was responded by the students.[9]

CONCLUSION

From the results obtained and detailed comparative analysis of the previous studies it can be concluded that the age old method of teaching Anatomy through cadaveric dissection still stands out as the best teaching modality. The clichéd saying 'Cadaver is the best teacher' is proved correct again and will stay correct for years to come. The modern methods of Anatomy teaching like virtual anatomy or any other technically advanced teaching modality cannot replace cadaveric dissection. Hence more time and manpower should be channelled towards procuring cadavers and teaching Anatomy through dissection.

Conflicts of Interests: None

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