

Research Article**Impact of Dissection on Under Graduate and Post Graduate Study in Medical Colleges****H P Sarma^{1*}, M Islam²**¹Assoc Prof, ²Asst Prof, Department of Anatomy, AGMC & GBP Hospital, Agartala, Tripura, India***Corresponding author**

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Abstract: Traditionally teaching of anatomy is based on cadaver dissection and hand on experience and practical demonstration classes. Recent trends of computer based education and power point presentation in classes and recent introduction of problem based learning has led to false belief that dissection is of no more help in understanding anatomy. The objective of the study was to access the views of post and under graduate students whether dissection sessions done at undergraduate level have helped them in better understanding anatomy and whether computer can be used in place of dissection. Questionnaires were distributed among 120 postgraduate medical students and 120 undergraduate students. It comprised questions in relation to the experience of dissection for postgraduate students who have done dissection during their undergraduate classes. Statistically significant percentage of students found that dissection is beneficial for post graduation. Dissection should be a part of study in medical curriculum and computer based education can be additive to the dissection.**Keywords:** Dissection, Questionnaires, Medical students.

INTRODUCTION

Anatomy as a subject has been overly didactic, traditional and archaic [1]. Traditionally, in medical education, teaching of anatomy is based on dissection of human dead bodies [2]. In all parts of the world dissection has been a part of medical education. Most people recognize dissection as the most universal and universally recognizable step to be learned to become a doctor [3]. The knowledge gathered during the dissection is used by a doctor throughout his life by remembering the structure he has dissected. The only experience is gained by a new surgeon is by way of dissection only.

Dissection rooms are available in the department of anatomy in all the medical schools. These rooms are a source of curiosity for students on first day in medical schools [4]. The cadaver dissection used to be revered as the very "essence of anatomy". Due to the vast advances in technology, information and imaging techniques, the resources for teaching anatomy have made giant leaps in the education system [1].

Because of many reasons dissection has become a question mark for its continuance. There was no problem with this idea, till the modern medicine has been introduced to the Medical communities. Dissection of the dead bodies for learning and teaching

human anatomy and for research education and treatment has raised queries about the permissibility its use for such purposes [5].

Large number of methods and instruments available that seem as real human body part, ranging from computers, to live body scans, virtual three dimensional images, plastic models, plastinated, prosections and synthetic simulators [1].

Adaptation of problem based learning has raised the suspicion that dissection is no more of help in studying medicine [6]. In some medical schools dissection has been purposely abandoned the dissection and instead students are asked to use models and anatomy specimens [7, 8].

Studies done in many Medical College have revealed that by performing dissection regularly anatomy can be learned in a better way [2]. Keeping this in view a study was conducted to see role of dissection in studying medicine. A questionnaire was distributed among the students currently undergoing their post graduation i.e. M.D and MS and also to the MBBS student.

Objectives

The objective of the study was to access the views of post and under graduate students whether

dissection sessions done at undergraduate level have helped them in better understanding anatomy and whether computer can be used in place of dissection.

MATERIALS AND METHODS

A Pre tested Questionnaire was prepared and distributed among students who are currently undergoing their post graduation courses and undergraduate student of various semester of AGMC & GBP Hospital. The study was conducted over a period of one year i.e. September 2013-August 2014. Data was analyzed using chi-square test.

RESULTS

It was noticed that 70% of the post graduate students agreed that dissection was of help to them (Table 1). 75% agreed that models and specimen cannot be an alternative to the dissection. However, 30% said that text books, models and specimens can be used as tool for teaching.

85% undergraduate students found dissection helpful in understanding anatomy (Table 2). 20% thought that books and models can be replacement for dissection. 20% thought that books and models can be a replacement for dissection.

Table 1: Correlation of dissection and post graduation

Total no of post-graduate student	Did dissection done in first/second year helped them in postgraduate studies		Models and specimen can be alternative to dissection	
	Yes	No	Yes	No
120	84 Nos (70%)	36 Nos (30%)	30 nos (25%)	90 Nos (75%)

Table 2: Correlation between dissection and undergraduate student

Total no of under-graduate student	Did dissection done help in understanding human body		Models and specimen can be alternative to dissection	
	Yes	No	Yes	No
120	102 Nos (85%)	18 Nos (15%)	20%	80%

DISCUSSION

Results of present study show that dissection is essential for both undergraduates and post graduate medical student. 70% of the post graduate students agreed that dissection was of help to them (Table 1). 30% said although it was not helpful to them. 25% of the post graduate trainee said that models and specimen can be alternative to dissection. Few post graduate trainees said that they remember the course of vessels and their adjacent structures even now just by remembering their dissection. Some of them said that, they are doing effective surgery only because they did the dissection nicely which helped them building their confidence in doing surgery in living body. The easy availability of dissection videos and images through internet has led to decrease interest in dissection among students.

It is clear that in the cases of necessity for life-saving educations, researches or treatments, use of human dead body is allowed, encouraged and even recommended [22].

These modern teaching techniques are durable, clean, odor less, aesthetical and hassle free. Unlike traditional dissection session the students are not required to undergo training. Thus anatomists have polarized into two belief systems. The modernists regard the dissection as obsolete and dispensable and the traditionalists regard dissection as the keystone of anatomy education. This transformation in the perceptions needs to be analyzed in a greater light because it deals with the process of education and training our future health professionals [1].

Results of present study show that 85% undergraduate students found dissection helpful in understanding anatomy (Table 2). The students who are regular in dissection they can memorize the structure and their relationship with the neighboring viscera then those who are not doing the same regularly.

Past studies have emphasized dissection as an important tool for learning anatomy. Many authors have emphasized the importance of dissection for undergraduates and have shown it as a major tool for enhancing their memory regarding the body parts and their relationship [9].

The introduction of a problem-based learning system (PBL) has resulted in + reduction in the number of lectures and limited the use of dissection in teaching anatomy. In the new curriculum, students learn the anatomy by using models and dissected specimen [10]. But the same students are not learning the anatomy as effectively as the students who are doing dissection regularly as evident from the present study.

Some authors have discussed the effect of the availability of step-by-step dissection videos on student practical examination scores and have reported that video resource availability did not enhance student performance in anatomy and radiology. It has stressed that learning anatomy is most efficient and highest retention is observed when learning is combined with the dissection experience [11, 12].

Anatomy is taught by using textbooks, plastic models, and multimedia illustrations, but human cadavers are the primary tool for human anatomy education. Dissection would enhance students' understanding of anatomy [12, 13]. This concept again is proved by the present study where it has been seen that students understand better anatomy by dissection methods only.

Anatomy is essential for all branches of medicine. As the methods of education are undergoing a metamorphosis, anatomy seems to have fallen below a safe level [1]. Thus, anatomical errors in general surgery with accidental damage to associated structures have found to be increased [1, 14]. The shift from "cadaver oriented anatomy" to a "clinically trimmed, computer oriented anatomy" may not be good in acquiring and nourishment of core knowledge [1, 15].

Many educationalists hold the view that lessons learnt from the actual feel of human flesh are incomparable [1, 16, 17]. Computers, though advanced, will remain an artificial synthetic medium. It can never equate with the complex and miraculous reality of a human body [1, 18]. A cadaver dissection laboratory allows aspiring future physicians the first visual and tactile experience of "human body and life" [18]. Dissection prepares the medical students to face the picture of death confidently which is important in treating life [19]. The cadaver provides an appreciation of human life through an understanding of death and dying [20].

Dissection helps a student to paint the whole picture in his mind. A model is like the picture in a book [2]. It is suggested that dissection should be done in under graduate years so that a 3D model of human body is printed on their mind.

Students agreed that dissection enhanced their understanding of anatomical structures, provided them with a 3D perspective of structures and helped them recall what they had learnt [21]. Thus it is clear that dissection performed at undergraduate level is of help not only at that level but in future it helps them at postgraduate level to understand anatomy [2].

CONCLUSION

Dissection done at undergraduate level helps in postgraduate studies. Regular dissection sessions aid in understanding anatomy at undergraduate level. Dissection cannot be taken off and others teaching tools and computer and models can be used along with the dissection.

Dissection is important in medical education and is supported by many students, clinicians, anatomists and the general public. The dissected cadaver remains the most captivating means to present

anatomy. Dissection allows specialists in safe practice and also helps in progress of clinical developments [1].

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