

**COMPARISON OF CADAVERIC DISSECTION VERSUS OTHER METHODS TO LEARN ANATOMY BY FIRST PROFESSIONAL MEDICAL STUDENTS**Rachna Magotra<sup>1</sup>, Nusrat Jabeen<sup>2</sup>**HOW TO CITE THIS ARTICLE:**

Rachna Magotra, Nusrat Jabeen. "Comparison of Cadaveric Dissection versus Other Methods to Learn Anatomy by First Professional Medical Students". Journal of Evolution of Medical and Dental Sciences 2015; Vol. 4, Issue 29, April 09; Page: 4993-4996, DOI: 10.14260/jemds/2015/727

**ABSTRACT:** Robert liston has said that "The foundation of the study of the art of operating must be laid in the dissection room." Hundred medical students of first professional MBBS of Government medical college Jammu were asked to fill up a questionnaire Performa. Students appreciate diversity as all learn differently. By conducting this study we wanted to know about each students own personal view about dissection, their challenges, frustrations, rewards, experiences etc. Upon compiling the data it was inferred that although dissecting a cadaver is challenging but still this age old method is the most preferred method to learn anatomy, though they wanted the newer methods of teaching like learning from models, dissected specimens, etc. to supplement it.

**KEYWORDS:** Cadaver, Dissection, Anatomical Models.

**INTRODUCTION:** The word anatomy is derived from the Greek term 'anatomē' which means cutting up. Anatomy is a gateway course to medical schools, nursing and other medical fields. It has always been a corner stone in medical education.<sup>(1)</sup> Cadaveric dissection offers an active hands on exploration of human structures, provides deep insight into the meaning of human embodiment and mortality and represents a profound rite of passage into the medical profession. By learning gross anatomy, medical students get a first impression about the structure of the human body, which is the basis of understanding clinical and pathological problems. In ancient Egypt, dissection was a religious ritual, required as a rite of passage to the kingdom of the dead, even if the procedure was resembling more a crude autopsy than an anatomical dissection as we intend today.<sup>(2)</sup> Now a days due to the mushrooming of newer medical colleges having varied degrees of medical facilities, the dissection is either minimized or eliminated from the teaching curriculum. In these colleges anatomy is taught by computer simulation models, dissected specimens, peer examination computer based imaging etc. Keeping this in view a lot of debate is going on whether cadaveric dissection should or should not be a part of teaching curriculum of medical colleges. The objective of our study was to find out from the students, what they considered as the ideal method of learning anatomy i.e. whether the age old tradition of cadaveric dissection should be the method of teaching, or teaching by models, dissected specimens, peer examination etc. should be there.

**MATERIAL AND METHODS:** We conducted the study on hundred medical students of first professional MBBS of G.M.C. Jammu. The mean age of the students was 20 years, the range being 18-20 the male and female students were of equal number that is fifty each. All of them were asked to fill up a pre prepared questionnaire Performa comprising of fourteen questions. Verbal consent for participation was taken and aim of the study was explained to them. The questions were based on previous studies. The students were promised full anonymity. They were given half an hour to answer the questions. On completion of the Performa the data was organized, tabulated and analyzed. The result was tabulated as follows;

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Questions	Number of yes %	Number of no %	Number of can't say %
Have you ever seen a dead body	54	39	7
Are you comfortable with the sight of cadaver	68	30	2
Do you think that dissection is not religiously acceptable	5	48	47
Do you give the cadaver its due respect	87	3	10
Do you consider cadaveric dissection ethically acceptable	84	14	2
Is cadaveric dissection necessary for learning anatomy	94	2	4
Can alternative methods replace the cadaveric study-	10	86	4
Do you have any allergy to formalin	11	88	1
Do you have images of cadaver even after you leave the dissection hall	6	94	--
Do you like to dissect the dead body	83	12	5
Do you avoid dissection due to laziness	6	92	2
Do you like to watch when other students are dissecting	64	31	5
Does dissecting a body answers all your queries about the topic under consideration	77	12	11
Would you want the newer methods like models, dissected specimens, computer based imaging etc. to complement dissection	79	11	10

**TABLE 1**

**RESULT:** A total of hundred medical students of first professional participated in this study. The male and female students were equal in number. One hundred valid filled questionnaire performs were compiled. It was found that out of hundred students eighty four considered cadaveric dissection necessary for learning anatomy. Sixty eight students were comfortable with the sight of cadaver. Eighty seven students maintained the sanctity of the cadaver by giving it due respect. Eleven students were not interested in dissection due to allergic reactions to formaldehyde (Allergic conjunctivitis, allergic rhinitis etc.). Six students did not do dissection as they considered it cumbersome and did not want to do the effort. Sixty nine students were so much interested in dissection that they loved to watch their fellow students dissecting cadavers. Fear for the dead bodies was found in only six students. Ten students were of the opinion that alternate methods of teaching like learning with models, dissected specimens, and computer based imaging etc. can replace learning by cadaveric dissection. Seventy seven students were totally satisfied by learning through dissection as they considered cadaver as the best teacher. They thought that all their queries about anatomy were answered by dissecting the cadaver meticulously. Seventy nine students were of the opinion that age old dissection complemented by newer methods of learning like models. Dissected specimens, etc is the ideal method to understand the intricacies of anatomy.

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**DISCUSSION:** In the present study majority of the students i.e., 94 thought that the dissection is the best method of learning. This in agreement to the authors who try to compare alternate methods of teaching with the traditional method of learning through the dissection.<sup>(3)</sup> They stated that the traditional method of teaching obtained better result than the technologically supported group. In our study 36% considered dissecting the cadaver as unethical. This is in accordance to Winkelmann et al.<sup>(4)</sup> Only 11 students in our study did not like to dissect because of allergic problems. This is in accordance with Sakanioto et al.<sup>(5)</sup> Where 9.4% had allergic problems. Six students did not dissect the cadaver because of laziness. This is similar to the study of authors like Dotinga R.<sup>(6)</sup> who found the similar problem in 8.6%. A very small percentage of students in our study did not dissect due to emotional disturbances due to unpleasant sight and smell of cadaver. This is contrary to the study of Abu Hijleh et al where 46.5% had emotional problems.<sup>(7)</sup> Majority (94%) of the students were in favour of teaching through dissection and they preferred it well over the alternate study material as in the study of Johnson.<sup>(8)</sup> The same is also in accordance to Biasutto S N et al.<sup>(3)</sup> who were of the opinion that computers cannot replace dissection No religious belief could alter the enthusiasm of our students regarding the dissection of cadaver. 79% of our study group agreed to add the other teaching materials to the cadaveric dissection and only a small group (10%) substituted them to the cadaveric dissection. This is similar to Gutman G D et al.<sup>(9)</sup> In the present study more than 80% of students considered dissection ethically acceptable. About 79 % of students in our study were open to the addition of other study material to complement the traditional cadaveric study as in the study of Rizzolo et al.<sup>(10)</sup>

**SUMMARY:** Majority of students wanted cadaveric dissection to be a part of the teaching curriculum as dissection allows the development of three dimensional image of the different anatomical regions of the body. Dissection methods provide more clearance about the organs to the students and this helps them in clinical practice when they are able to remember the organs with their corresponding nerve and blood supply very clearly. It has been argued and agreed that no matter how much sophisticated a software package may be, images are still projected in a two dimensional screen whereas the cadaveric based study enhances a three dimensional image of human anatomy.<sup>(11)</sup> One needs to bear in mind that the students within the same course seek divergent learning experience.<sup>(4)</sup> Due to the great variability in the number of teaching hours, type of teaching methods, previous qualification of medical students and several other parameters it is impossible to assume one experience in an institution and country to be valid for others.<sup>(12)</sup> Over the last ten to fifteen years increasing attention has been drawn to the traumatic effect of dissection on some students and the implication of such trauma on subsequent education and practice.<sup>(13)</sup> But still dissection has not lost its charm among students. So we conclude that though dissection is expensive, time consuming, cumbersome, potentially hazardous etc. still it provides an opportunity to reflect on the feelings of mortality, humility and spirituality. Actual is always better than simulated, so cadaveric dissection is better than learning by computer multimedia programmers like videos, cadaveric plastination, non-cadaveric models, computer based images etc. The demerits of these newer methods are lack of touch, distraction from the topic, learning impairment etc. though they show three dimensional image with more possibility of exploration and are inexpensive, less time consuming and with lesser number of psychological and health hazards. So we conclude that dissection was, is and will be an important method to learn anatomy though newer methods can supplement teaching for better understanding as Medicine line is one where dead teaches the living.

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**FINANCIAL OR OTHER****COMPETING INTERESTS:** None**NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:**

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Date of Submission: 18/03/2015.  
Date of Peer Review: 19/03/2015.  
Date of Acceptance: 26/03/2015.  
Date of Publishing: 08/04/2015.