



A STUDY ON PERCEPTION OF ANDHRA MEDICAL COLLEGE 1ST YEAR MBBS PROFESSIONALS ON CADAVERIC DISSECTION OVER VIRTUAL DISSECTION

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ABSTRACT

In the prevailing pandemic scenario, information and communication technology has bridged mankind by connecting everything virtually. Medical professionals (MBBS students) also have gone on virtual environment. The present study is attempted to assess impact and effectiveness on the of traditional cadaveric dissection method over computer assisted virtual dissection method in learning gross anatomy unlike the other fields which can go virtual. A study was carried out on MBBS students exposed to both online classes and physical classes. Analysed perceptions of 1st year MBBS professionals of Andhra Medical College at end of the academic year by conducting a questionnaire survey. **MATERIALS AND METHODS:** First year students enrolled at the Andhra medical college were asked to fill an online questionnaire. Data gathered were analysed using Statistical Package for Social Sciences. **RESULTS:** One hundred eighty students MBBS students participated in the study. More than 70% of students agreed dissection was useful in learning anatomy rather than virtual. **CONCLUSION:** Dissection is an important resource for learning anatomy. Other teaching techniques should be used to supplement dissection rather than replace it.

KEYWORDS : anatomy, dissection, medical professionals

INTRODUCTION:

Study of the human body by dissecting a cadaver layer by layer from skin through subcutaneous tissue, muscles, organs, brain remains the pillar and an integral part of learning and teaching by a medical student and teacher. (1) Anatomical dissection is an essential integral component, and acts as a building block that provides essential knowledge required for the future doctors of 1st year MBBS students during the period of medical training. (1) Utilising cadaveric dissections in anatomy education allows various advantages: promotion of active and deep learning, preparation of students for clinical practice, exposure of students to death, practice of clinical skills, development of empathy and stress coping strategies, and correlation of patients' symptoms and pathology. (2) Although learning anatomy by cadaveric dissection is a traditional, time-proven method, it is not without negative aspects such as cost and exposure to formaldehyde. Cadaveric dissection is considered the "gold standard," (3,4) however, other methods such as skeletons, pro sections, mannequins, models, radiographs, plastinated specimens, and surface anatomy are frequently used in human anatomy education. Advancement of technology in recent years has yielded virtual cadaveric dissection, which allows for cadaver-less dissections. Anatomical virtual dissection tables incorporate digitalised images to provide a large scale "tablet like" interactive experience for teaching and learning. (5) This study aimed to investigate perception of cadaveric dissection over virtual dissection expressed opinions by 1st year MBBS professionals of ANDHRA MEDICAL COLLEGE, Visakhapatnam, Andhra Pradesh, India.

MATERIALS AND METHODS

The present survey study was enrolled in academic session of 2019-2020. 180 first-year MBBS students from the Department of Anatomy, Andhra Medical College, Visakhapatnam, Andhra Pradesh, India. All participants were informed about the type of questions and purpose of the study, questionnaire containing 15 questions with multiple choices was provided to them and they were asked to choose an option as follows...

1. Do you think cadavers have the ability to teach students?
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree.
2. Cadaveric dissection helps to learn how to use basic surgical instruments.
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree.
3. Do you think that cadaver dissection for anatomical learning is ethically acceptable?
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree.

4. Do you assume to apply knowledge to heal the living after dissection of cadaver?
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree.
5. Virtual dissection has ability to reconstruct and save dissections and provides visualisation to students.
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree.
6. Do you think that actual hands-on training on cadaver dissection gives better results than demonstration virtual specimen?
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree.
7. Do you think that cadaver dissection technique can be replaced by plastic models, CAT, etc., in the near future?
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree.
8. Do you think that virtual dissection enhances the skill of thinking in a logical manner?
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree.
9. Do you think that cadaver dissection is still considered important and indispensable in anatomy learning?
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree.
10. Do you think that cadaver dissection remains the best method of learning anatomy?
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree.
11. Do you feel cadaver dissection is an important part of medical degree?
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree.
12. With no manipulation of human tissues, virtual dissection prevents students from appreciating the feel and texture of specific anatomic organs
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree.
13. Students can perform virtual dissection with greater time efficiency and more seamless than cadaveric dissections
a) Strongly Disagree b) Disagree c) Neutral d) Agree e) Strongly Agree.
14. Do you ever think that the cadaver you dissected was once a living human being like you? If so, do you ever have any sympathy and respect for cadaver?
a) Yes. b) No.
15. By which dissection method spatial orientation and visualisation of relationship between structures is commonly cited.
a) Cadaveric dissection b) Virtual Dissection.

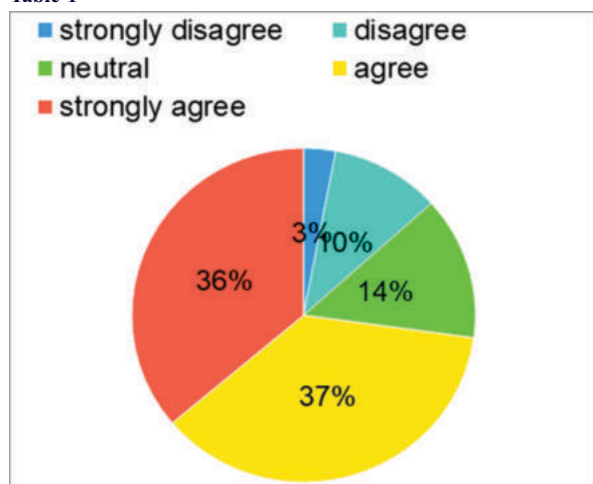
RESULTS

The results from the first data collection (Table 1) indicated that 59.1% of students were strongly agreed that cadaveric dissection is an important part of medical degree.

	Strongly disagree %	Disagree %	Neutral %	Agree %	Strongly agree %

Do you think cadavers have the ability to teach students?	1.2	0.6	0.6	27.5	70.2
Cadaveric dissection helps to learn how to use basic surgical instruments	1.2	1.2	2.3	41.5	53.8
Do you think that cadaver dissection for anatomical learning is ethically acceptable?		2.4	11.3	51.2	35.1
Do you assume to apply knowledge to heal the living after dissection of cadaver?		5.9	15.9	47.6	30.6
Virtual dissection has ability to reconstruct and save dissections and provides visualization to students	6.5	26.5	23.5	30.6	12.9
Do you think that actual hands-on training on cadaver dissection gives better results than demonstration virtual specimen?		0.6	4.1	37.4	57.9
Do you think that cadaver dissection technique can be replaced by plastic models, CAT, etc., in the near future?	13.5	39.2	25.1	17	5.3
Do you think that virtual dissection enhances the skill of thinking in a logical manner?	8.2	24	30.4	29.8	7.6
Do you think that cadaver dissection is still considered important and indispensable in anatomy learning?		1.2	3.5	45.9	49.4
Do you think that cadaver dissection remains the best method of learning anatomy?	0.6	1.8	7	36.8	53.8
Do you feel cadaver dissection is an important part of medical degree?	0.6	1.2	2.9	36.3	59.1
With no manipulation of human tissues, virtual dissection prevents students from appreciating the feel and texture of specific anatomic organs	2.4	7.1	15.3	48.2	27.1
Students can perform virtual dissection with greater time efficiency and more seamless than cadaveric dissections	4.8	22.8	37.7	27.5	7.2
	39	134.5	179.6	477.3	470

Table-1



About 57.9% of students were of opinion that actual hands-on training on cadaver gives better results than demonstration on virtual specimen. About 51.2% responded that it is ethical to have a cadaver for study.

Majority (70.2%) thought that cadaveric dissection have ability to

teach students..

About 53.8% students strongly agreed and 41.5% students agreed that cadaveric dissection helps to learn how to use basic surgical instruments.

About 39.6% students were disagreed and 13.4% strongly disagreed that cadaver dissection technique can be replaced by plastic models, CAT, etc. in the near future.

About 48.5% students were agreed, 27% strongly agreed that virtual dissection prevents students from appreciating the feel and texture of anatomical organ.

About 30.6% students strongly agreed, 47.6% were agreed that cadaveric dissection is helpful to apply knowledge to heal the living.

Majority of students (53.8%) perceived the real dissection experience to be more useful than the virtual dissection experience to learning anatomy.

89% of students were agreed that a spatial orientation and visualisation of relationship between structures commonly cited by cadaveric dissection method.

DISCUSSION

In present study one hundred and eighty 1st year MBBS professionals were exposed to virtual dissection through the online classes due to prevailing covid pandemic situation.

This study indicated that most students liked cadaveric dissection and even ranked it as the most important resource for learning anatomy.

Virtual cadaveric dissection enables the students to appreciate dynamic aspects such as how anatomy is influenced by different physiologic states (McLachlan, 2004; Miles, 2005; Swamy and Searle, 2012). Unfortunately, the use of these imaging techniques is limited by their cost, lack of the 3D touch sensation, and the need for understanding the radiologic principles of each technique.⁽⁷⁾

Cadaveric Dissection is a practical subject and therefore imparts to the student's basic surgical skills such as handling of surgical instruments (Granger, 2004; Moore, 1998). In the current study, majority of the students agreed that dissection taught them how to handle basic surgical instruments⁽⁸⁾

CONCLUSIONS

From the present study the following can be concluded

1. Majority of the students strongly agree that cadaveric dissection method can not be substituted simply by virtual dissection method
2. Also one-sidedly the survey proved spatial orientation and visualisation of relationship between structures commonly cited by cadaveric dissection method.

ACKNOWLEDGMENT

The authors would like to express their gratitude to the 1st year students who have whole heartedly gave the survey to carry out the study.

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