

PERCEPTION AND ATTITUDE TOWARDS CADAVERIC DISSECTION - A QUESTIONNAIRE-BASED STUDY IN A TERTIARY TEACHING HOSPITAL IN JHARKHAND, INDIA

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Abstract

Background: Although with development of newer techniques like immersive virtual reality experiences in 21st Century, the dissection still accorded a high position in the minds of Faculty. This study was an attempt on the part of researchers to understand student's perception and attitude of students towards cadaveric dissection while learning anatomy and exploring student choices about choosing anatomy as a career option. **Material and Methods:** A descriptive cross-sectional questionnaire-based study was conducted among the first-year medical students. **Results:** A total of 149 students participated in this study. Most of the students (85.9%) felt cadaveric dissection essential for medical education and 75.2% of students felt it helped them develop a clear concept and linkage between study material, lecture and actual anatomical body structures. 58.4% strongly agreed with dissection enhancing their experiential learning. About 52.3% of the students responded that they developed more respect towards human body after attending dissection session. About 55.1% of students felt the smell of formalin repulsive during the initial month and over 75% students complained of eye irritation. Only 4.7% reported that they were disgusted during the first month due to the first-time exposure. (61.1% of students strongly disagreed of skipping an anatomy class. 22.8% of students strongly agreed that they were comfortable with dissection performed on their close relative. Majority of the students (41.6%) strongly disagreed to replacement of dissection with technology enabled methods reiterating the importance of dissection. However, students were not keen on choosing anatomy as a career option since 46.3% gave neutral response, only 4% were interested to pursue a career. **Conclusion:** Lectures, VR simulation and multimedia methods can complement but not a substitute to dissection. Sensitization of students to cadaver with cadaver oath may reflect as respect and empathy towards dead body.

INTRODUCTION

From the time of Herophilus who is recognized as the first person known to have performed and reported a systematic dissection of the human body there has been a paradigm shift of anatomical knowledge passed down the generations.^[1]

The Anatomy Act of 1832 allowed for the legal dissection of unclaimed bodies of poor citizens from workhouses and charitable hospitals was introduced in England.^[2]

Earlier researchers have stated that the body has a clinically insightful story to tell. It is our willingness to listen to that story, however, bears a unique history grounded in the liminal and evolving thought-systems surrounding the body itself.^[3]

Dissection allows students to appreciate the complexity of the human body thereby enhancing the student learning experience which lead to development of ability to understand body structures and other clinical subjects. Thus, anatomy is being regarded as a founding bloc of medical education.

Although with development of newer techniques like immersive virtual reality experiences in 21st Century, the dissection still accorded a high position in the minds of Faculty. Cadaveric dissection imparts contributes to learning in all domains. Since there is always a gap between what Faculty perceive and what students perceive because of environment, exposure, experiences and environment and paucity of studies done in this part of the country, this study was an attempt on this part of researchers to understand student's perception and attitude of students towards cadaveric dissection while learning anatomy and exploring student choices about choosing anatomy as a career option.

MATERIALS AND METHODS

A descriptive cross-sectional study was conducted among the first-year medical students in Manipal Tata Medical College, Jamshedpur. The design of the study was cross-sectional in nature conducted in the department of Anatomy.

After appropriate permissions of the study protocol the study was initiated during the month of October-2023. The data collection tool was a questionnaire-based study and began with the section where participants had to express their willingness to participate and complete anonymity of the was maintained to abide by the ethical guidelines.

The data collection tool was a structured closed ended questionnaire consisting of 11 items with five-point Likert scale. It was prevalidated with subject experts and pretested on a small group before circulation.

It has three parts. Part 1 constituted four items which dealt with learning domain of the students.

Part 2 had three items which dealt with negative experiences of the student.

Part 3 consisting of four items regarding medical students' perception and attitude towards cadaveric dissection. The respondents

assigned 1 to strongly disagree with the statement and 5 to strongly agree with the statements. It was circulated to entire class in a google form.

A total of 149 student responses were obtained and entered in MS Excel. Descriptive statistics like simple frequencies, percentages and mean was calculated using SPSS version 22.0.

RESULTS

A total of 149 students participated in this study. Nearly 90% of the students were younger than 21 years of age. Nearly, half of the students were females (52.7%).

Most of the students (85.9%) felt cadaveric dissection essential for medical education and 75.2% of students felt it helped them develop a clear concept and linkage between study material, lecture and actual anatomical body structures. 58.4% strongly agreed with dissection enhancing their experiential learning. About 52.3% of the students responded that they developed more respect towards human body after attending dissection session. [Table 1]

About 55.1% of students felt the smell of formalin repulsive during the initial month and over 75% students complained of eye irritation. Only 4.7% reported that they were disgusted during the first month due to the first-time exposure. [Table 2]

61.1% of students strongly disagreed of skipping an anatomy class. 22.8% of students strongly agreed that they were comfortable with dissection performed on their close relative. Majority of the students (41.6%) strongly disagreed to replacement of dissection with technology enabled methods reiterating the importance of dissection. However, students were not keen on choosing anatomy as a career option since 46.3% gave neutral response, only 4% were interested to pursue a career. [Table 3]

Table 1: Positive attributes towards dissection

Sl no	Items	1	2	3	4	5
1	Cadaveric dissection is essential for medical education	1 (0.7%)	0 (0%)	3 (2%)	17 (11.4%)	128 (85.9%)
2	Dissection help in developing a clear concept	0 (0%)	2 (1.3%)	7 (4.7%)	28 (18.8%)	112 (75.2%)
3	Dissection help you to explore and enjoy experiential learning	0 (0%)	3 (2%)	16 (10.7%)	43 (28.9%)	87 (58.4%)
4	I have developed more respect towards human body after attending dissection session	1 (0.7%)	3 (2%)	15 (10.1%)	52 (34.9%)	78 (52.3%)

Table 2: Negative attributes towards dissection

Sl no	Items	1	2	3	4	5
1	The smell of Formalin was repulsive during first month	11 (7.4%)	22 (14.8%)	34 (22.8%)	60 (40.3%)	22 (14.8%)
2	There was eye irritation during dissection during first month	10 (6.7%)	12 (8.1%)	15 (10.1%)	62 (41.6%)	50 (33.6%)
3	The sight of dead body was disgusting during first month	53 (35.6%)	40 (26.8%)	31 (20.8%)	18 (12.1%)	7 (4.7%)

Table 3: Attitude and expectation attributes

Sl no	Items	1	2	3	4	5
1.	I shall skip a cadaveric dissection demonstration if I had a chance	91 (61.1%)	41 (27.5%)	9 (6%)	2 (1.3%)	6 (4%)
2	I shall be comfortable with cadaveric dissection conducted on a close relative.	37 (24.8%)	36 (24.2%)	42 (28.2%)	20 (13.4%)	14 (9.4%)
3	Cadaver dissection should be replaced by prosection, plastic models, digital anatomy table and Virtual Reality (VR)	62 (41.6%)	39 (26.2%)	28 (18.8%)	11 (7.4%)	9 (6%)
4	I would choose anatomy as a career option	28 (18.8%)	27 (18.1%)	69 (46.3%)	19 (12.8%)	6 (4%)

DISCUSSION

Most of the students felt cadaveric dissection essential for medical education and develop a clear concept and linkage between study material, lecture and actual anatomical body structures which was similar to the studies done in Germany, Ghana and Kenya where over 80% of students responded that dissection depends their understanding thus enabling them for better recall of concepts and providing a three-dimensional perspective of different anatomical structures and appreciating anatomical variations.^[3,4,5]

Dissection is a fundamental part of medical education, providing students with a hands-on opportunity to learn the intricacies of human anatomy. Understanding the structure of the human body is crucial for medical professionals to diagnose and treat patients effectively.

Dissection allows students to appreciate the three-dimensional complexity of the human body, contributing to a better understanding of variations and anomalies. This knowledge enhances a student's ability to empathize with patients, especially when dealing with medical conditions or undergoing surgical procedures.

Even our study reiterated the facts the students tend to develop more respect while they tend to explore complexities of human body similar to other researchers.^[4,5]

The studies done in India where over 96% of participants agreed that cadaveric dissection remains the best method of learning anatomy and is essential for curriculum point of view.^[6,7] Even the new competency based curriculum by National Medical Council in India is very specific about the dissection hours and small group discussions since they are the founding stone in medical education

The use of formalin as a fixative and disinfectant is essential for preservation but comes with a price owing to its eye irritant properties and toxicity which was reflected in our study which correlates well with other studies.^[3,6,8] The Hagen's Plastination and Thief Embalming methods were developed to restrict the quantity.^[9] However the acclimatization of the students with the dissection table occur after initial months of training.

Our study revealed although students were very much interested in learning anatomy and accorded it with an exalted position and dissection improvising their learning experience but they were not much

interested to pursue a career in anatomy even though it plays a foundational role in medical education and research.^[10]

With advancements in technology, alternative teaching methods such as virtual dissection tools have been developed. These methods aim to provide educational benefits while addressing concerns related to ethical, cultural, or religious perspectives on traditional dissection. The ability to navigate the emotional and ethical dimensions of dissection contributes to the overall professional development of medical students. It prepares them for the challenges and responsibilities they will encounter in their future medical careers.

CONCLUSION

Cadaveric dissection is extremely importance in medical education. Lectures, models, anatomage table, VR simulation and multimedia methods can complement but not a substitute to dissection. Sensitization of students to cadaver with cadaver oath may reflect as respect and empathy towards dead body. Contributing to the design and development of medical devices and technologies that have a basis in anatomy. This could involve creating surgical instruments, implants, or simulation tools.

Research and collaboration are essential to design and develop technologies that interface with the human body and could create interest in our discipline.

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