



Feelings Of First Year MBBS Students With Human Cadavers In The Dissection Hall

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Abstract

The study of regional anatomy through cadaveric dissection is considered to be a unique feature of medical teaching. Cadaveric dissection is an ancient yet powerful learning tool for medical students which help in providing real-life experience to students about the human body & its internal structures. Somehow, this experience can stress the students emotionally as well as physically. Many students express several concerns related to cadavers. Physical impact such as pungent smell affecting breathing, nausea, irritation of the eye can be observed in many students. Psychological symptoms such as depression, anxiety, panic attacks can also be noted. First-year medical students usually experience a lot of emotional reactions and mixed feelings when they encounter human cadavers for the first time. The aim of this study, conducted on students, is to evaluate the psychological effect of dissection on their delicate minds and how these cadavers sbecome an important tool in their learning of anatomy. We prepared a questionnaire to assess the impact of anxiety and physical symptoms related to the dissection hall experience of male and female medical students.

The present study was conducted on 135 newly admitted first professional medical students of 2021 academic sessions at SAMC & Post Graduate Institute, Indore, MP. The questionnaire was prepared in English based upon a review of similar studies. Various emotional reactions and views towards cadaveric dissection among participated students were collected. The data thus obtained was analyzed.

Keywords: Cadaver, Dissection, Formalin, medical students, Feelings.

Introduction:

Medical curriculum has become more and more **challenging**, as medical care has become more **technical** and medical education has become more centred on procedures.

Dissection still plays a key role at the beginning of the medical curriculum as a means of learning the human anatomy. The study of regional anatomy through cadaveric dissection is considered to be a unique feature of medical teaching. Human anatomy

is a science which deals with the structures of the human body, and is one of the first, most fundamental and essential subjects studied by medical students in their medical education career. ^[1,2] Cadaveric dissection is an ancient yet powerful learning tool for medical students which helps in providing real-life experience to students about the human body, its internal structures, palpations as well as dealing with the human body during surgeries and forensic testing. Somehow, this experience can stress students emotionally as well as physically. ^[3]

Cadaver-based anatomical education is unavoidable for optimal training and is necessary for establishing the primary of the patient, apprehension of the multidimensional body, anatomical variability, learning the medical language, and touch-mediated perception of the cadaver or the patient.^[4]

Dissection not only provides anatomical knowledge but also offers other relevant, positive learning opportunities to reinforce the talents, and attitudes of budding doctors. Many students expressed several concerns related to cadavers. They feel if they touch the cadavers they will hamper their ethnicity and cultural background. Some students find it very important for embarking on their medical degree and consider it as an essential component of pre-clinical training. Mixed responses were observed.^[3] Physical impact such as pungent smell affecting breathing, nausea, irritation of the eye can be observed in many students. Psychological symptoms such as depression, anxiety, and panic attacks can also be noted.^[3]

The dissection hall would be a logical starting point for humanistic education, which helps in developing a spatial and tactile appreciation for the fabric of the human body.^[5] The sensation of touch between physician and patient is essential, and is best learned early in the dissecting room. Dissection brings the students to the closest and most comprehensive encounter with human mortality.^[5] Emotional experiences of students and self-reflection during the dissection course play an important role in their professional identity formation.^[6]

First-year medical students usually experience a bunch of emotional reactions and mixed feelings when they encounter human cadavers for the first time.^[7, 8]

The aim of this study, conducted on students with no previous cadaver dissection experience, is to evaluate the psychological effect of dissection on their delicate minds and how these cadavers become an important tool in their learning of anatomy. We prepared a questionnaire to assess the impact of anxiety and physical symptoms related to the dissection hall experience of male and female medical students.

Material And Methods:

Place of Study - The study was carried out at the Department of Anatomy at SAMC & PGI Indore MP.

The dissection course runs in parallel with the theoretical anatomy class from the month of January to April 2021, giving the students the opportunity to instantly apply their knowledge to practice. The practical session of the anatomy course consists of 2 hours of dissection 4 times a week. The study was undertaken after 3 months of dissection classes during lockdown when online teaching was going on. **Study Population** - The present study was conducted on 135 newly admitted first professional medical students of 2021 academic sessions at SAMC & Post Graduate Institute, Indore, MP. A cross-sectional, descriptive study was conducted among all first year M.B.B.S students. Students who were absent and not willing to participate were excluded. Anonymity and confidentiality were also ensured to them. After obtaining formal permission from the college, the participants were told about the objectives and relevance of the study before they filled out the questionnaires containing 35 items. The questionnaire was prepared in English based upon a review of similar studies.

Data Collection- Out of 150 students, 135 medical students participated in the study. Data was collected by questionnaires administered sequentially during the lockdown when online teaching was going on. Students were also asked about their opinion regarding the utilization of alternative digital methods for understanding the human body. The students were asked to answer with either “Yes” or “No” option.

Data Analysis -Various emotional reactions and views towards cadaveric dissection among participated students were collected. The data thus obtained was analyzed. Descriptive statistics like the percentage and frequencies of the replies was determined for each item of the questionnaire. The results were discussed in the light of available literatures (Table 1, 2 and Chart 1, 2, 3).

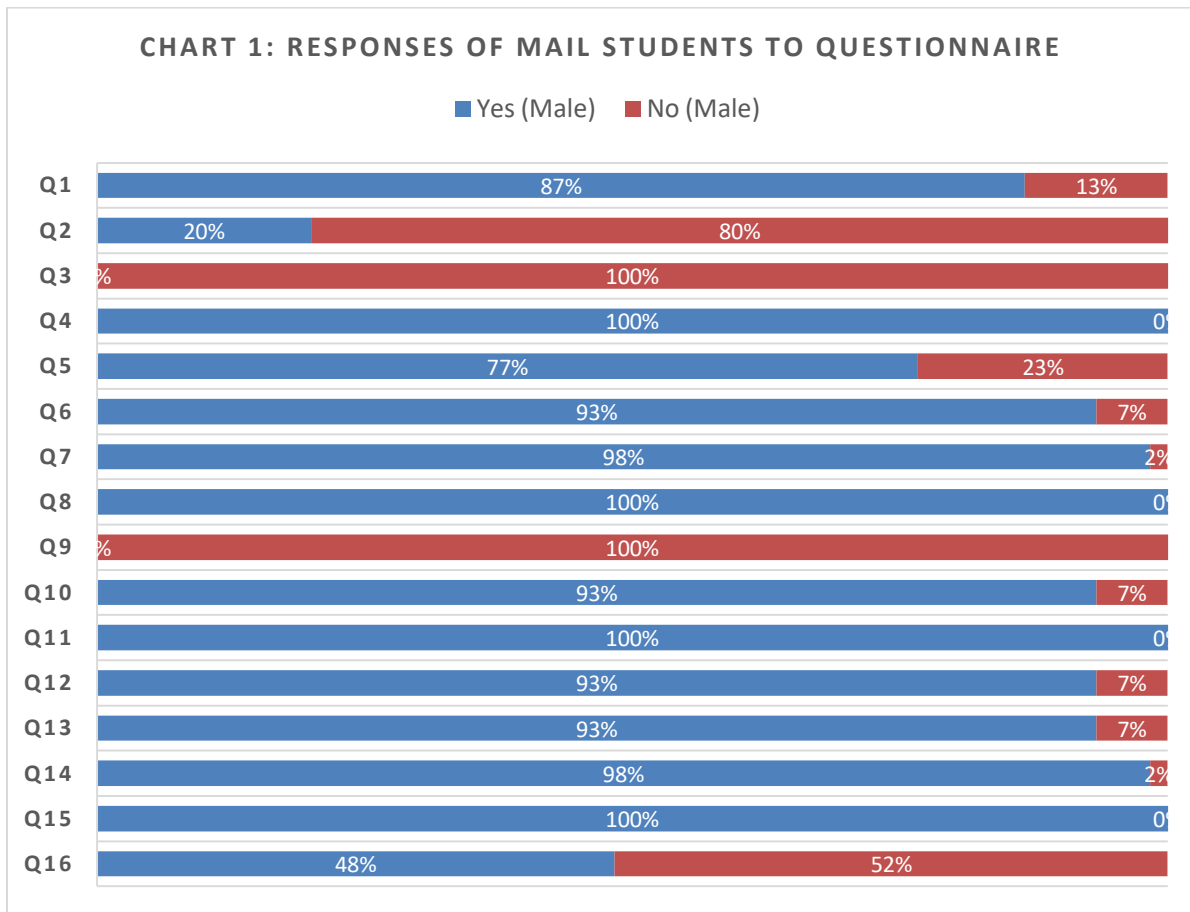
Results:

The results obtained from the present study have been tabulated in Table 1, 2 & Chart1, 2, 3.

Table 1: Questionnaire and student's responses

S.NO	QUESTION	Yes (Male)	Yes (Female)	NO (Male)	NO (Female)
1	Have you ever seen the dead body before?	86.66 %	69.33 %	13.33 %	30.66 %
2	Were you shocked to see the cadaver for the first time?	20 %	20 %	80 %	80 %
3	Did you get nightmares about the body?	0 %	10 %	100 %	90 %
4	Did you find dissection exciting?	100 %	100 %	0 %	0 %
5	Do you prepare mentally for dissection of human cadaver?	76.66 %	90 %	23.33 %	10 %
6	Did you think that cadaver was once a living being?	93.33 %	90 %	6.66%	10 %
7	If so, do you ever have any sympathy and respect for cadaver?	98.33 %	98.66	1.66 %	1.33 %
8	Does cadaver dissection made anatomy easier to understand?	100 %	97.33 %	0 %	2.66 %
9	Should cadaver dissection be replaced by better modalities like plastic models?	0 %	2.66 %	100 %	97.33 %
10	Do you feel that doing dissection your self is better than demonstration on prosecuted parts	93.33 %	93.33 %	6.66%	6.66%
11	Is cadaver dissection important for learning anatomy?	100 %	100 %	0 %	0 %
12	Did you assume to apply knowledge to heal the living after dissection of human body?	93.33 %	94.66 %	6.66%	5.33 %
13	Did you find human body intricate and complex?	93.33 %	96 %	6.66%	4 %
14	Do you think that cadaveric oath has a role in developing empathy for cadaver as silent teachers?	98.33 %	100 %	1.66 %	0 %

15	Do you think that dissection enhances the skill of thinking in a logical manner?	100 %	98.66 %	0 %	1.33 %
16	Would you like to choose anatomy as a career?	48.33 %	56 %	51.66 %	44 %



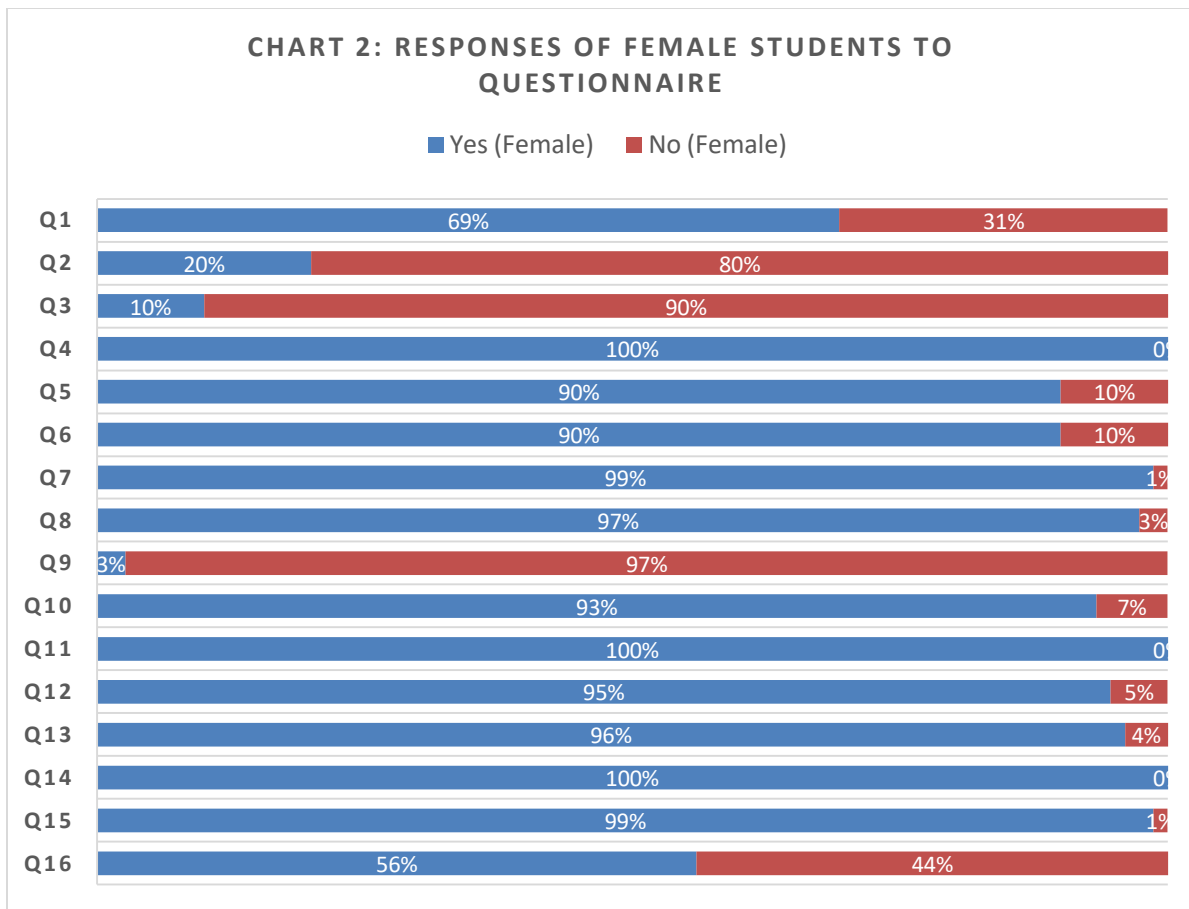
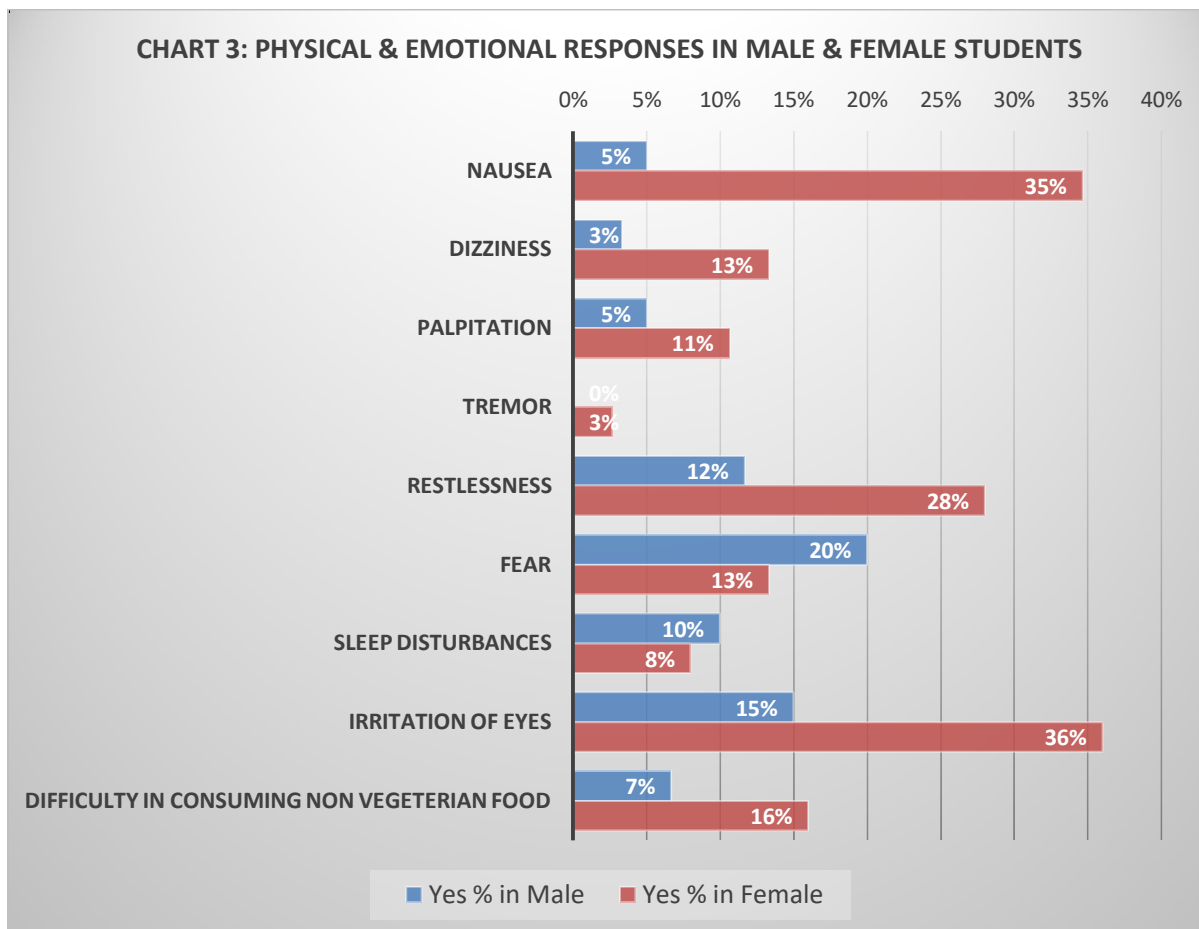


Table 2: percentage of Physical and emotional responses of the students in the present study (2021)

S. NO	Particulars of questions	Yes (Male)	Yes (Female)	NO (Male)	NO (Female)
1	Nausea	5 %	34 .66 %	95 %	65 .33 %
2	Dizziness	3.33 %	13.33 %	96.66 %	86.66 %
3	Palpitation	5 %	10.66 %	95 %	89.33 %
4	Tremor	0 %	2.66 %	100 %	97.33 %
5	Restlessness	11.66 %	28 %	88.33 %	72 %
6	Fear	20 %	13.33 %	80 %	86.66 %
7	Sleep disturbance	10 %	8 %	90 %	92 %
8	Irritation of eyes	15 %	36 %	85 %	64 %
9	Difficulty in	6.66 %	16 %	80 %	77.33 %

	consuming non-vegetarian food			13.33% Vegetarian	6.66% Vegetarian
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Discussion:

It is an accepted fact that medical students learn anatomy from the dead. Students who participated in the study had exposure to the dissection room. In the present study, 86.66 % of male students and 69.33 % of female students had seen a dead body before. Malay N et al.^[3] reported 20.8% had prior experience with a dead human body but they didn't differentiate between male and female statistics. In our study, 78% of students had prior experience with a dead human body, so they were not traumatized by the cadaver experience.

Anatomy is highly important because we can see the structures with our naked eyes. The best way to learn anatomy is dissection of a cadaver and examination of dissected specimens.^[9]

Students' attitudes towards the dissecting room remained consistently positive for the duration of the study. There are varying reactions with regards to the attitudes, emotions and views of medical students towards cadaver dissections. In the present study, 5 % of male & 34.66 % of female students complained about nausea, 3.33 % of male & 13.33 % of female students complained of dizziness, 5 % of male & 10.66 % of female students had Palpitation, 2.66 % of female students had tremors whereas none of the males presented with tremors, 15 % of male & 36 % of female students complained of Irritation of eyes. Singroha R et al.^[5] reported nausea in 6.9% of male & 9.1% in female students, tremors were observed in 5% of males, whereas none of the females presented with tremors. Percentages of female symptoms are more in the present study. Biswas R et al.^[1] stated

66.4% had experienced irritation of the eyes, 18.2% had nausea, and 6.6% had fear. Malay N et al.^[3] described eye irritation in 31.8%, nausea in 24.5%, & fear in 12.5%, which is close to our study. Our study showed eye irritation in 25.5 %, nausea in 19.83%, & fear in 16.6 % of cases. In our study, 11.33% of students reported difficulty consuming non-vegetarian food after seeing the cadaver. However, Malay N et al. described that 6.4% of students reported that after seeing the cadaver they stopped eating non- vegetarian food.^[3]

Irritation of the eyes was the most common symptom. Kaundal et al. also corroborated this fact that formalin odor and eye watering emerged as the main symptoms observed by the students.^[10] These symptoms like nausea, dizziness, tremors, palpitation were decreased over a period. This is in agreement with previous studies done by Agnihotri et al.^[11] who found that symptoms like nausea, weakness, fright and lack of concentration were decreased over a period of 6 weeks.

91.66 % of the students realized that the cadaver was once a living being and they had empathy and sympathy for the body and 98.49 % had respect for the person who donated his dead body for them to learn, this is higher than the studies done by Lalit et al.^[4] & Sharma S. et al.^[7] Lalit et al.^[4] reported 80.06% of students agreed that cadavers were once living humans like them, while 95.66% had sympathy and respect for them. Sharma S. et al.^[7] stated 82% of students realized that the cadaver was once a living being and 60% had respect for the person who donated their bodies for learning purposes. Kaundal et al.^[10] also mentioned 100% of students had a sense of gratitude to people and/or relatives who donated their bodies. Students' understanding and empathy, is important in subsequent medical practice.

The cadaveric oath emphasizes on proper handling of the cadaver, paying tribute to the soul and to knot the idea of empathy in young medicos minds. 99.16 % of students realized that the oath has a role in developing empathy for the cadaver, as silent teachers, which is in concordance with the work done by Lalit et al. who stated 100% respondents appreciated that the cadaveric oath has a role in developing concern for cadaver.^[4]

Anatomy dissection is an important part of the medical curriculum. An analysis of the questionnaire

also showed that a majority of the students (98.66%) considered cadaver dissection made anatomy easier to understand and this is consistent with the view held by many anatomists. According to Lalit et al. 96.37% of respondents agreed that dissection remains the best method of learning anatomy.^[4]

Biswas R et al.^[1] described that more than 80 % of students thought dissection is an important part of the medical curriculum and it helps in critical thinking. In our study, 99.33 % of students think that dissection enhances the skill of thinking in a logical manner, which is higher than study done by Biswas R et al.^[1] Hassan A et al. described 100% of students agreed that dissection is an integral part of a medical degree, which is close to our readings.^[12]

Sharma et al.^[7] cited the work of Rajkumari and Singh, 2007 and reported that 95% of students prefer dissection than demonstration on prosecuted specimens, as it enhances understanding of the objectives of the course. They also cited the work of Parker (2002) who reports that cadaver dissection confers better three dimensional appreciation of human anatomy as opposed to plastic models. In our study, 93.33 % of students felt that doing dissection is better than demonstration on prosecuted parts. This is in concordance with the study done by Sharma et.al.^[7]

Apart from teaching, cadaveric workshops are useful accessory tool when teaching operative skills.^[13]

In the present study, only 2.66% of female students prefer cadaver dissection to be replaced by better modalities like plastic models, which is lower than the findings of Lalit et al.^[4] who described a 15.94% preference.

Medical students generally like anatomy as a subject. In the present study, 48.33 % of male and 56% of female students like to choose anatomy as a career, which is much higher than work done by Lalit et al.^[4] who reported that only 8.69% of students were willing to pursue anatomy as a career.

Financial consideration is a major criterion for career selection in preclinical subjects.^[14] But now, with upcoming new medical colleges, job opportunities and, increasing research work, students are willing to choose anatomy as a career.

Conclusion:

The findings suggest that most of the students were keen to study anatomy with dissection method. Exposure to dissection hall is an intriguing and challenging experience which they perceive as a memorable event in their medical education and life. For many medical students, the psychological impact of exposure to cadavers was significant. However, the impact reduced markedly over time. Student-teacher interactions, pre-education sessions will help in improving the outlook of the students towards

cadaveric dissection which in turn will help in improving their psychological status to handle the maximum level of stress and anxiety in their medical carrier. Symptoms like eye irritation, nausea and, fear and stress are being experienced by medical students. It is, therefore, very essential that anatomy teachers bring up new ideas/approaches to reduce such complications in the dissecting room. It was also concluded that cadaveric dissection for learning anatomy is still considered essential and indispensable and cannot be substituted by any other tool and technique.

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