

**PERCEPTIONS OF FIRST MBBS STUDENTS TOWARDS ETHICAL ASPECTS  
RELATED TO ANATOMY****Onkar D. P.\***Dept of Anatomy, N.K.P. Salve Institute of Medical Sciences & Research Centre and Lata Mangeshkar Hospital,  
Hingna Road Nagpur-440019.**\*Corresponding Author: Onkar D. P.**

Dept of Anatomy, N.K.P. Salve Institute of Medical Sciences &amp; Research Centre and Lata Mangeshkar Hospital, Hingna Road Nagpur-440019.

Article Received on 07/02/2021

Article Revised on 27/02/2021

Article Accepted on 17/03/2021

**ABSTRACT**

**Introduction:** Anatomical dissection is a time honored part of medical education. Dissection helps the students to understand the structural organization of the human body. Cadavers are the silent mentors who were once living people. Hence it is important to respect cadaver. **Objectives:** 1. To sensitize faculty members regarding services of gratitude for cadavers 2. To sensitize the students about respecting cadavers. 3. To orient the students about organ donation and body donation. 4. To obtain students perception by feedback. **Methods:** Pretest was conducted with a predesigned questionnaire of ten open ended questions among 96 first year medical students. The students were sensitized regarding respecting cadaver, body donation and organ donation. Post test was conducted. Students' perception was collected by Feedback on 5 point Likert scale. Pretest and post test results were compared. Data was analyzed by qualitative method. **Result:** There was significant gain in knowledge on respecting cadaver, body donation and organ donation by first year medical students after sensitization ( $p < 0.001$ ). 95% students agree on actual hands on training on cadaver dissection gives better results. 89% students feel that services of gratitude to cadavers should be started in the Anatomy department. 90% students agree that apart from regular anatomy classes ethical issues should also be discussed as a part of curriculum. 45% students favor deceased organ donation & 51% students wish for voluntary body donation. **Conclusion:** The awareness regarding the respectful treatment to the cadavers should be stressed on student's mind.

**KEYWORDS-** Body donation, Cadaver, Ethics.**INTRODUCTION**

Anatomical dissection is a time honored part of medical education.<sup>[1]</sup> Since the Renaissance, dissection of cadaver has been central to medical education and the chief pillar for learning anatomy.<sup>[2]</sup> It is considered as essential requirements in learning gross anatomy, particularly the three-dimensional aspect of human anatomy.<sup>[3]</sup>

The currently described crisis in the process of teaching-learning anatomy generated two educative currents widely used around the globe. One, still based on cadaveric dissection, considered as a vital tool. The second, using mainly the wide range of tools that the advancing technology has enabled to develop. Both cadavers and virtual reality have been demonstrated to be motivating tools and it has been determined that a mix of those two tendencies shows better results than using single one.<sup>[4]</sup>

There is currently no other mode of learning that can replace the hands-on experience derived from working with cadavers. While computer-aided learning has its benefits, many pedagogical studies have shown that practical experience with cadavers remains superior.<sup>[5]</sup>

It should be ensured that the process of anatomy teaching and learning, whether it takes place using cadavers, their parts, alive individuals, or even materials obtained from them, takes place under a setting of respect and compliance with the ethical principles inherent to formative activities of the future doctors along with the utmost scientific values.<sup>[4]</sup>

Although body donation is extremely important for medical education, the number of persons who choose to donate body remains low. Currently there is shortage of donated bodies to teaching institute. Organized efforts are needed to raise the awareness about body donation and change the mindset of the society towards body donation.<sup>[6]</sup> Similarly deceased organ donation should also be promoted in order to save lives of many patients requiring organ or tissue transplantation.

**MATERIAL AND METHODS**

This institution based prospective, cross sectional and descriptive study was conducted in the Department of Anatomy, NKP Salve Institute of Medical Sciences & Research Center, Nagpur after institutional ethics committee permission. Informed Consent was taken

from participants with full explanation of the purpose of the study. Voluntary participating 1<sup>st</sup> MBBS students were included in the study. Students remaining absent on that day of study were excluded.

Faculty members of Anatomy department were sensitized regarding services of gratitude for cadavers. Pretest was conducted with a predesigned questionnaire of ten open ended questions among 96 first year medical students. The questionnaire was based upon a review of literature and various studies conducted elsewhere. The students were sensitized regarding respecting cadaver,

body donation and organ donation. Post test was conducted. Students' perception was collected by feedback on 5 point Likert scale. Pretest and post test results were compared. Data was analyzed by qualitative method and the result was discussed with available literature.

### OBSERVATIONS AND RESULT

Out of 100 students 96 students voluntarily participated in the study. There were 47 male and 49 female students. Pretest and post test results are given in Table 1.

**Table-1 Pretest and post test results.**

Sr. No.	Particulars of questions	Pretest N=96 Number of students answering correctly (%)	Post test N=96 Number of students answering correctly(%)
1	What is the main ethical concern about cadaver dissection?	43 (45%)	82(85%)
2	Which etiquettes will you follow while dissecting cadaver?	26 (27%)	70 (73%)
3	Name the two sources of cadaver.	84 (88%)	92 (96%)
4	Name any two services of gratitude practiced for cadavers in various countries.	30 (31%)	87 (91%)
5	How cadavers help you in learning process?	88 (92%)	90 (94%)
6	How to donate body to teaching institute?	38 (40%)	91(95%)
7	Within how much time after death donated body should be brought to the teaching institute?	4 (4%)	89 (93%)
8	Name any four tissues donated	35 (36%)	95 (99%)
9	What is brain death?	7 (7%)	71(74%)
10	In what way dissecting cadaver will help you in future while dealing with patients?	48 (50%)	79 (82%)

After sensitizing the students there was statistically significant gain ( $p < 0.001$ ) in knowledge about respecting cadavers, etiquettes, various services of gratitude, body and organ donation in most of the parameters as seen in

Table 1. Most of the students had prior information about sources of cadaver and learning through cadaveric dissection.

**Table-2. Students' feedback.**

Sr. No.	Particulars of feedback	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	Actual hands on training on cadaver dissection gives better results than demonstration on prosected specimen.	69(72%)	22(23%)	3(3%)	1(1%)	1(1%)
2	Services of gratitude to cadavers should be started in the Anatomy department of our institute.	65(68%)	20(21%)	9(9%)	1(1%)	1(1%)
3	Apart from regular anatomy classes ethical issues should also be discussed as a part of curriculum.	47(49%)	39(41%)	7(7%)	---	3(3%)
4	Deceased organ donation should be made compulsory in India.	20(21%)	23(24%)	30((31%)	18(19%)	5(5%)
5	I wish to donate my body	20(21%)	29(30%)	27(28%)	7(7%)	13(14%)

From table 2 it is revealed that 95% students agree on actual hands on training on cadaver dissection gives better results than demonstration on prosected specimen.

89% students feel that services of gratitude to cadavers should be started in the Anatomy department of our institute. 90% students agree that apart from regular

anatomy classes ethical issues should also be discussed as a part of curriculum. 45% students favors deceased organ donation in our country. 51% students wish for voluntary body donation.

## DISCUSSION

Findings of the present study show that there is significant gain in knowledge regarding respecting cadaver, body donation and organ donation by first year medical students after sensitization.

Cadaver is the first teacher of a medical student. These are the silent mentors who were once sentient, living people. More than a book dead body teaches us.<sup>[5]</sup> The main ethical concern of cadaver dissection lies in respect to human life.<sup>[7]</sup> A cadaver has a fundamental moral-ethical value that necessitates a reverential attitude towards it. The use of the cadavers for dissection must be done with profound respect for the deceased person.<sup>[8]</sup>

Anatomy is a rigorous course requiring great dedication and devotion. Just as dissection remains an essential technique to teach three-dimensional concepts, the cadaver dissection hall is an ideal place to introduce concepts of humanistic care.<sup>[9]</sup> It plays an important role in shaping the medical students attitudes to life and death.<sup>[1]</sup> Hence it is important to follow etiquette during dissection. The students should not make fun or criticize, should not take selfie with cadaver or post photos of cadaver on social media and should not take photos of any dissected part without permission. The first year students of medical professions need to be trained regarding the handling of the cadavers in a dissection hall.<sup>[10]</sup> The various services of gratitude for cadavers are practiced all over the world. They include taking oath at the beginning of the course, daily prayer before dissection or keeping 2 min silence. At the end of the course thanks giving to donors family members, lighting a candle, offering flowers etc. In Thai schools and universities, the respect is formalized in a ceremony called wikhru (honor the teacher), which takes place annually.<sup>[11]</sup> In the present study 89% students feel that services of gratitude to cadavers should be started in the Anatomy department of our institute.

Anatomy is where students learn the basic language of medicine, learn to develop understanding through experimentation, and develop skills in solving problems in a three-dimensional space.<sup>[12]</sup> The students learn all the structures of human body by visual impression, touching and feeling which forms the basis of all surgical and clinical skills. It teaches more than technology based teaching modalities. The students are taught to have respect and the highest regard for cadavers and understand that these cadavers wanted to assist them in learning anatomy in order to ultimately help others in medical need.<sup>[11]</sup> In the present study 95% students agree on actual hands on training on cadaver dissection gives better results than demonstration on prosected specimen similar to Study by Rajkumari et al.<sup>[2]</sup>

Body donation is considered to be the highest level of charity. However the awareness about it is very less and teaching institutes has to rely on unclaimed bodies. Majority of the students mentioned about the sources of cadaver as donated and unclaimed bodies but at the same time only 51% students agree for voluntary body donation. This can be due to some unpleasant experiences in dissection hall.<sup>[10]</sup> Other reasons can be inadequate knowledge, religious concern, misbeliefs and unease about body manipulation.

Brain death results from a severe, irreversible injury to the brain but vital body functions may be maintained by an artificial support system. Brain death has specific implications for organ donation with the potential for saving several lives.<sup>[13]</sup> At any given time, every major city would have 8–10 brain dead patients in various ICUs with 4–6% of all hospital deaths being brain death. In India, road accidents account for around 1.4 lakh deaths annually and of these almost 65% sustain severe head injuries as per a study carried out by AIIMS, Delhi, meaning that there are almost 90,000 patients who may be brain dead.<sup>[14]</sup> Nearly, 25 different organs (kidney, heart, lung, liver, pancreas, uterus, and ovary) and tissues including cornea, eardrum, bone and bone products, blood transfusion, blood vessels, Islets of Langerhans, heart valves, cartilage, bone marrow, hand, face, skin, nerve, and tendon can be donated after medical screening.<sup>[15]</sup> In countries like Singapore, Belgium and Spain organ donation is by default. 45% students in present study agree on deceased organ donation. Awareness on maintenance of the brain dead has increased over the last decade with the progress in the field of transplant but still it is less in our country.<sup>[13]</sup>

90% students in our study agree that apart from regular anatomy classes ethical issues should also be discussed as a part of curriculum. The study conducted by Bindu S<sup>[10]</sup> also finds the same. A natural starting point for humanistic education is the anatomy lab. According to the principal of detached concern, clinicians should show concern for their patients but should detach themselves from their own emotions. Dissection hall cultivate an attitude of humanistic care. Student experience first this in the anatomy lab where a total stranger has entrusted them with his or her remains.<sup>[12]</sup> It is through the anatomy lab that students gain personal insight regarding their ability to balance their emotions and professionalism with reference to the end of life.<sup>[11]</sup> The human body maintains, even in death, a recognizable form that inspires respect for the person's identity. Indirectly, the way we treat the human cadaver influences the way we treat the person alive.<sup>[16]</sup> The attitude of students towards cadaveric dissection influences with dealing complex situations in medical career.<sup>[17]</sup>

## CONCLUSION

The awareness regarding the respectful treatment to the cadavers should be stressed on each student's mind. The

practice of honoring the cadavers at commencement of dissection, by teachers and students should be entertained. The present study recommends including respecting cadaver, body donation and organ donation in medical curriculum at undergraduate level.

#### ACKNOWLEDGEMENT

Author is thankful to all the voluntarily participating students for their cooperation. Author also extends her gratitude to Dr. Suresh Chari and Dr. Shubha Gade for encouragement to conduct the observational study.

#### CONFLICT OF INTEREST

The author declares that there is no conflict of interest.

#### REFERENCES

1. Arraez-Aybar LA. Dissection as a modulator of emotional attitudes and reactions of future health professionals. *Med Educ*, 2008; 42: 563-71.
  2. Rajkumari A, Das BK, Sangma GTN, Singh YI. Attitude and views of first year medical students towards cadaver dissection in anatomy learning. *Calicut Med J*, 2008; 6: 550-4.
  3. Bertman SL, Marks SC Jr. Humanities in medical education: rationale and resources for the dissection laboratory. *Med Educ*, 1985; 19(5): 374-81.
  4. Rueda R, Hernández J. Human anatomy: science, ethics, development and education. *Rev. Fac. Med*, 2012; 20(2): 9-10.
  5. Huat BB. *Body of Work. Evidenc*, 2013; (2): 2-8.
  6. Rokade SA, Bahetee BH. Body donation a review. *Medical Journal of Western India*. 2013(41): 36-41.
  7. Abu Sadat MN, Shamim A, Mohsin K, Mansur K. Ethics in dissection of cadaver in teaching and learning of anatomy. *Bangladesh Journal of Bioethics*, 2011; 2(3): 10-15.
  8. Sawant SP, Rizvi S. Moral and Ethical values of cadaver procurement for dissection. *Sch. J. App. Med. Sci.*, 2015; 3(2): 1043-1045.
  9. Winkelmann A, Guldner FH. "Cadavers as teachers: the dissecting room experience in Thailand." *British Medical Journal*, 2004; 329: 1455-1457.
  10. Bindhu.S , Vasvani V. .Knowledge, Attitude, Perception Among Students, Teachers And Lay People Regarding Human Dignity And Assessment Of Barriers To Whole Body Donation-A Cross Sectional Study. *Indian Journal of Research*, 2016; 5(4): 119.
  11. Kzirian N, Bee M. Cadavers: touching lives after death. *Oakland university journal*, 2010; 19: 5-18.
  12. Rizzolo LJ. Human Dissection: An Approach to Interweaving the Traditional and Humanistic Goals of Medical Education. *The Anatomical Record*, 2002; 269: 242-48.
  13. Kumar L. Brain death and care of the organ donor. *Journal of anesthesiology and clinical pharmacology*, 2016; 32(2): 146-152.
  14. Organ Donation and Transplantation Provides Second Life. Press Information Bureau, Government of India, Ministry of Health and Family Welfare.
- Web link- [http:// www.employmentnews.gov.in/Organ%20Donation%20.pdf](http://www.employmentnews.gov.in/Organ%20Donation%20.pdf)
15. Sulania A, Sachdeva S, Jha D, Kaur G, Sachdeva R. Organ donation and transplantation: An updated overview. *Journal of Medical Sciences*, 2016; 2(1): 18-27.
  16. Silviu M, Dan PD, Adrian C. Ethical and legal aspects of the use of the dead human body for teaching and scientific purposes. *Romanian Journal of Bioethics*, 2008; 6(4): 75-83.
  17. Biswas R, Bandyopadhyay R. Attitude of first year medical students towards cadaveric dissection: a cross sectional study in a medical college of West Bengal, India *Int J Community Med Public Health*, 2019; 6(6): 2679-2683.