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# PERCEPTION OF CADAVERIC DISSECTION AMONG BASIC SCIENCE MEDICAL STUDENTS

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## ABSTRACT
**Background:** Dissection is a conventional and leading method of anatomy education, but nowadays scheme of teaching has been modified and includes inspection of prosected specimens, didactic teaching, problem based workshops, use of 3D models and radiological anatomy. Such modification has resulted in reduced emphasis for dissection. Therefore this study was conducted to determine perception of basic science medical students to dissection. **Methods:** This was a descriptive cross-sectional study using structured questionnaire conducted in Department of Anatomy, School of Medicine (SOM), PAHS, Lalitpur, Nepal. A questionnaire was administered to first and second year basic science medical students. For each question, the students have to choose one of the three possible responses: "yes", "no" or "undecided". **Results:** In present study 97.2% of the students considered cadaver dissection is still considered important and indispensable in anatomy learning. Almost all the students (99.1%) feel dissection provides the best method for learning. 89.9% agreed that dissection is better than demonstration of prosected specimen and majority of students opined that dissection should not be replaced by alternative scheme of teaching. Likewise, 97.2% of students found their first visit to dissection room exciting and same percentage of students was in the agreement that dissection enhanced their skill of thinking in a logical manner. **Conclusion:** Cadaver dissection is important and indispensible means of learning anatomy. Dissection is still the most preferred method of anatomy learning among medical students despite technological advancements. Plastic models and computer assisted program should be complementary but not a substitute to dissection.

**KEYWORDS:** Perception, Cadaver dissection, medical students.

## INTRODUCTION
Anatomy, the study of structure of human body is one of the first, most basic and most important subjects studied by medical students when they begin their medical career**.** A sound knowledge of anatomy obtained through dissection is an indispensable part of education of health care professionals. Thus, anatomy is considered as backbone of medical sciences.[1] Cadaver dissection as an effective learning experience that reinforces lecture and textbook material and provides a better understanding of the complexity and variability of the human body.[2] Dissection of cadaver is integral part of anatomy learning and research. It gives practical, real feel, hands on experience for students thus reducing the pitch for virtual dissection.[3]

Cadaver dissection has been called "sharp-end" of medical education. Dissection is labelled as "royal road and cadaver as "first patient".[4] Dissection is a conventional and leading method of anatomy education, but nowadays scheme of teaching has been modified and includes inspection of prosected specimens, didactic teaching, problem based workshops, use of 3D models and radiological anatomy.[5] Such modification has resulted in reduced emphasis for dissection and even some Universities have abandoned dissection.[6] Therefore this study was conducted to determine perception of basic science medical students of Patan Academy of Health Sciences (PAHS) to dissection. This study helps to obtain suggestions for improvement in learning human anatomy.

## METHODS
This was a descriptive cross-sectional study using structured questionnaire conducted in Department of Anatomy, School of Medicine (SOM), Patan Academy of Health Sciences (PAHS), Lalitpur, Nepal. This study was conducted among first and second year basic science medical students of SOM, PAHS from 1st Feb 2018 to 30th April 2018. All the first and second year students

were involved in the study except those who were involved in the pretest were excluded from study.

**Study questionnaire:** A structured questionaire specially designed for the purpose was used based on review of similar study.[7] Face validation of questionnaire was done by four content experts. Pretesting of questionnaire was done among ten basic science medical students of PAHS. Among them five students were selected from 1st year and five students were from 2nd year. Pretesting was done to adjust the questionnaire by removing redundant and ambiguous areas. A questionnaire has 2 sections: In first section, socio-demographic profile. In second section, 14 questions regarding perception to cadaver dissection which consisted about reaction of first visit to dissection room, previous encounters with death and its impact on coping mechanism, respect for the cadaver, the possible alternatives for replacing cadaver dissection by prosected specimen, plastic models, computer assisted programs and its importance and indispensability. For each 14 question, the students have to choose one of the three possible responses: "yes", "no" or "undecided".

Students were explained about the objective of the study then questionnaire was distributed to students to express their view, which took around 20-30 min to fill the questionnaire. A total of 109 students were included in the study among them 67 students were from first year and 42 students were from second year.

**Ethical approval:** This study was conducted after obtaining permission from Institutional review committee (IRC- PAHS). Informed verbal consent was obtained from the participants with full explanation of purpose of the study and students name were not recorded to keep anonymity.

**Duration of study**: 3 month (Jan 2018- Mar 2018).

**Inclusion criteria:** All the first and second year undergraduate basic science medical students of PAHS present during day of data collection were included in this study.

**Exclusion criteria:** Those students who were involved in pretest were excluded from the study.

**Data Analysis:** The data obtained from each students was entered in Microsoft excel sheet and was analyzed using statistical package social science (SPSS) for the production of descriptive statistics in which the frequency of the replies was determined for each item of the questionnaire.

## RESULTS

A total of 109 students participated in study. Among them 63 (57.8%) were male and 46 (42.2%) were female. The mean age of the students was 20.37± 1.27 years (ranged between 18 -25). Socio-demographic characteristics of students are shown in the table 1 below. The response of basic science medical students regarding their perception to dissection is shown in Table 2.

**Table 1: Socio- demographic characteristics of basic science medical students.**

| Characteristics | | No. of participants (%) |
|---|---|---|
| Gender | Male | 63 (57.8%) |
| | Female | 46 (42.2%) |
| Religion | Hindu | 100 (91.7%) |
| | Buddhist | 5 (4.6%) |
| | Christian | 2 (1.8%) |
| | Muslim | 2 (1.8%) |
| Food habit | Non vegetarian | 98 (89.9%) |
| | Vegetarian | 11 (10.1%) |

**Table 2: Response on perception to dissection among basic science medical students.**

| SN | Questions | Yes (%) | No (%) | Un-decided (%) |
|---|---|---|---|---|
| 1. | Did you find your first visit to dissection room exciting? | 106 (97.2) | 2 (1.8) | 1(0.9) |
| 2. | Did you experience emotional shock upon first being exposed to cadaver? | 29 (26.6) | 75 (68.8) | 5(4.6) |
| 3. | If so, whether the shock decreased gradually? | 29 (100) | - | - |
| 4. | Do you have any fear of touching the cadaver directly? | 10 (9.2) | 94 (86.2) | 5(4.6) |
| 5. | Do you ever think that dissected cadaver was once a living human being like you? | 104 (95.4) | 2(1.8) | 3(2.8) |
| 6. | If so, do you ever have any sympathy and respect for him/her? | 103(99) | - | 1(1) |
| 7. | Did you have any prior experience of dead human body before entering the dissection room? | 47 (43.1) | 62 (56.9) | - |
| 8. | If so, does the prior experience help you in developing a better coping mechanism to adjust to cadaveric dissection? | 36 (76.6) | 4 (8.5) | 7 (14.9) |
| 9. | Do you feel dissection provides the best method to learn anatomy? | 108 (99.1) | - | 1(0.9) |
| 10. | Do you think that dissection enhance skill of thinking in logical manner? | 106 (97.2) | - | 3 (2.8) |
| 11. | Do you think that cadaver dissection is better than demonstration of prosected specimen? | 98 (89.9) | 3 (2.8) | 8 (7.3) |
| 12. | Do you think dissection can be replaced by computer assisted learning programme? | 17 (15.6) | 88 (80.7) | 4 (3.7) |
| 13. | Do you think dissection can be replaced by plastic models? | 8 (7.3) | 98 (89.9) | 3 (2.8) |
| 14. | Do you think dissection is still considered important and indispensable means of learning anatomy? | 106 (97.2) | 2 (1.8) | 1 (0.9) |

## DISCUSSION

The present study revealed a favorable outcome to cadaver dissection and vast majority of students (97.2%) considered cadaver dissection as important and indispensable means of learning anatomy. This finding is in accordance with the findings from previous study conducted by Sharma et al in Nepal which showed 93% of respondents considered cadaver dissection as important and indispensable in studying human anatomy.[8] Similar findings were also reported by Izunya et al[9] Mulu et al[10] and Somnath et al[7] from Africa, Ethiopia and India respectively. On the preferred method of learning anatomy, it was observed that almost 100% of the students agreed that dissection provides the best method to learn anatomy. This obtained finding is consistent with previous study conducted by Somnath et al., Isunya et al. and Patel et al.[7,9,11] In present study 97.2 % of the students agreed that dissection enhanced their skill of thinking in a logical manner which is in concordance with findings of Sharma et al where 98% of the students agreed that dissection enhanced their skill of thinking in a logical manner.[8] Similar finding was also reported by Somnath et al. in India.[7] It has been ascertained that the manual skills learnt in the dissection room are essential in almost every branch of the medical profession.[12]

Furthermore, majority (89.9%) of the students preferred cadaver dissection than demonstration of prosected specimen. This finding is in accordance with study of Mulu et al. which showed 90.5 % of students preferred dissection than prosection.[10] Similar finding was also reported by Patel et al. and Karau et al.[11,13] Majority of students thought that cadaver dissection technique should not be replaced by plastic models (80.7%) and computer assisted training (89.9%). This may be due to poor awareness of the students towards use of plastic models and computer assisted training programme during anatomy learning. Findings of present study is comparable to study conducted by somnath et al.[7] in India but contradictory to finding of Isunza et al. where half of students (47%) favoured replacement of cadaveric dissection with plastic models.[9]

Regarding the reaction of students to their first visit to dissection room, majority of student (97.2%) found their first visit was exciting. Likewise in present study only 26.6% of students experience emotional shock upon first exposure to cadaver. While 68.8% did not experience any emotional shock which is in agreement with similar studies conducted by Karau et al. in Kenya where 85.3% of students find their first visit exciting and only 30.7% feel emotional shock whereas 64% didnot.[13] The result of present study is contrary to finding of Isunya et al. where only half of the students (59%) found their first visit exciting and around half of the students (53%) expressed emotional shock at initial exposure.[9]Rajkumari et al. reported that most medical students found their first visit to the anatomy dissection room exciting and suffered very little or no stress at all on their first visit.[14]

In present study only 9 % of students feel fear of touching the cadaver directly whereas, 86.2% of students did not. These obtained finding contradicts to that of Isunya et al. where one-third (35%) of the students expressed apprehension to handle cadaver directly, while 46% did not.[9] Rajkumari et al. also, reported that about one-third (32.5%) of the students expressed apprehension to handle cadaver directly, whereas 53.75% did not. [14]95.4% of the students realized that the cadaver was once a living human being and 99% had sympathy and respect for them. Similar findings were obtained by Isunja et al. and Karau et al.[9,13] 43.1% of students had prior experience with a dead body before entering dissection room, and out of these, 76.6% reported that the experience conferred them better coping mechanism to cadaver exposure which is in accordance with finding reported by Isunza et al. and Karau et al.[9,13] Parker et al. reported that students with prior exposure with a dead body will be better equipped to deal with issues surrounding death and are more aware of medical uncertainties which will make them better clinicians.[15]

## CONCLUSION

The present study has shown that most students found their first visit to the dissection room exciting. Majority of students agreed that cadaver dissection is important and indispensible means of learning anatomy and dissection enhanced their thinking skills. A study done by Patel and Moxham showed 98% of professional anatomists believe that dissection is important for gross anatomy learning.[16] Majority of students also agreed that cadaver dissection is better than demonstration of prosected specimen. Dissection should not be replaced with other alternative scheme of teaching such as demonstration of prosected specimen, plastic models and a computer assisted program. Cadaver dissection is considered as an essential requirement in learning gross anatomy particularly the three-dimensional aspect of human anatomy.[17] Cadaveric dissection is still the most preferred method of anatomy learning among the medical students despite technological advancements. Plastic models and computer assisted program should be complementary but not a substitute to dissection. Therefore, medical curriculum developers and policy makers should consider dissection as an important teaching modality in medical school for anatomy learning.

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**REFERENCES**


1. Rajkumari A, Singh Y. Body donation and its relevance in anatomy learning: A review. J Anat Soc India, 2007; 56: 1–6.
2. Kraszpulska B, Bomkamp D, Collin J B. Benefits of Traditional Cadaveric Dissection in a Digital World: Medical and Dental Students'Perspectives Med Sci Educ, 2013; 23(1): 27-34.
3. Stimec BV, Drasik M, Fasel HD. Cadaver procurement for anatomy teaching: legislative channel in a transtition related environment. Med Sci Law, 2010; 50: 45-49.
4. Newel RLM. Follow the royal road; the case for dissection. Clin Anat, 1995; 8: 124-27.
5. Kerby J, Shukur ZN, Shalhoub J. The relationships between learning outcomes and methods of teaching anatomy as perceived by medical students. Clin Anat, 2011; 24: 489-97.
6. Azis MA, Mckenzie JC, Wilson JS, Cowie RJ,Ayeni SA and Dunn B.K. The human cadaver in the age of biomedical informatics. Anat. Rec, 2002; 269(1): 20-32. DOI:10.1002/ar.10046.
7. Somanath D, Srivastava S, Rajasekar S. Experience in anatomy Lab-An analysis in Preclinical students. International J. of Healthcare and Biomedical Research, 2015; 3(2): 117-21.
8. Sharma N, Subedi S, Pandit R. Medical students' attitutude toward anatomy dissection: A study from Nepal. Journal of Universal college of Medical Sciences, 2017; 5(2): 16.
9. Izunya AM, Oaikhena GA, Nwaopara AO. Attitudes to cadaver dissection in a Nigerian Medical School. Asian J Med Res, 2010; 2: 89-95.
10. Mulu A and Tegabu D. Medical students' attitudinal changes towards cadaver dissection: A Longitudinal Study. Ethiop J Health Sci, 2012 Mar; 22(1): 51–58.
11. Patel B, Jadav J, Parmar A, Trivedi B. Attitude of medical students to cadaver dissection in Ahmedabad city. Int J Cur Res Rev, 2012; 4(22): 54-58.
12. Prakash, Prabhu LV, Rai R, D'Costa S, Jiji P J. and Singh G. Cadaver as teachers in medical education: knowledge is the ultimate gift of body donors. Singap. Med. J, 2007; 48(3): 186-90.
13. Karau PB, Wamachi A, Ndede K, Mwamisi J, Ndege P. Perception to cadaver dissection and views on anatomy as a subject between two pioneers cohorts in a Kenyan medical school. Anatomy Journal of Africa, 2014; 3(2): 318-23.
14. Rajkumari, AB, Das K, Sangama GT, Singh YL. Attitudes and views of first year medical students towards cadaver dissection in anatomy learning. Calicut Med. J, 2008; 6(4): e2.
15. Parker LM. What's wrong with the dead body? Use of the human cadaver in medical education. Med. J. Aust, 2002.176(2): 74-76.
16. Patel KM, Moxham BJ. The relationships between learning outcomes and methods of teaching anatomy as perceived by professional anatomists. Clin Anat, 2008; 21(2): 182–89.
17. Older J. Anatomy: A must for teaching the next generation. Surg. J. R. Coll. Surg. Edinb. Irel, 2004; 2(2): 79-90.