



## Original Article

## Dissecting cadaver in anatomy: Medical undergraduates' impression as they perceived

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## ABSTRACT

**Introduction:** Getting in the dissection hall remains the first-hand experience toward medical training. It is considered as the fundamental part in medical curriculum for centuries, too. Notably, trend of dissection by medicos is often bypassed due to multifaceted reasons, with stress being the main one. We aim to elucidate if any adverse consequence remains on the very first exposure to cadaver dissection and to describe the need of pre-dissection session for newly admitted students.

**Methods:** This cross-sectionally designed, descriptive study was conducted at the Holy Family Red Crescent Medical College, Dhaka, Bangladesh. Total 249 undergraduate medical students having at least six months of exposure on human anatomy were subjected to evaluate their primary perception on cadaver dissection employing a pre-tested self-administered, structured questionnaire. Recorded data were analyzed by using SPSS 16.

**Results:** Among all respondents, 229 (92%) found dissection exciting and 241 (96.8%) pretty interesting. However, certain negative feeling like agony was reported by 123 (49.4%) while 102 (41%) felt bit uncomfortable. Significantly more negative effect on day-to-day activities pertaining to cadaver dissection was reported by female students ( $p < 0.014$ ). Most participants positively evaluated the necessity of advanced explanation on dissection (95.6%) and on prior video-presentation (94.8%) before stepping into the dissection laboratory.

**Discussion:** To start the MBBS course, facing the cadaver suddenly may induce sort of negative reactions in student's mind. Since there is no substitute for cadaveric-lessons in medical education, the pre-dissection sessions should gradually be introduced to optimize the learning more productively.

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## 1. Introduction

Dissection is intensely introduced in the field of medicine which plays a significant role in the first 2 years of the undergraduate medical curriculum.<sup>1</sup> It provides the students with a true-life view of the body. Cadaver in the dissection hall is appreciated as the first patient for the future doctors. However, the trend of dissection by students has been changing lately, for multifactorial reasons.<sup>2</sup> Stress is pointed to be one of the main one since the medical education requires ample of time and dedication to coup up with this vast arena.<sup>3</sup> Health hazards, psycho-social issues, and lack of

resources have also contributed in this issue remarkably.<sup>4</sup> On the other hand, debates on developing newer anatomy teaching tools like virtual anatomy, computer assisted learning, etc. also remain optimistic.<sup>5</sup> We, therefore, engagingly opted to: (1) ascribe if any adverse event of such first exposure to cadaver requires any pre-dissection session for fresh medical students, and (2) gauge students' views if remain affected by variables like year of study, gender, ethnicity, and/or academic background.

## 2. Materials and methods

The qualitative study was conducted among the undergraduates of Holy Family Red Crescent Medical College (HFRMC), Dhaka, Bangladesh in December 2014. This was a descriptive, cross-sectional, questionnaire-based survey where the year 1 and year 2 medical students ( $n = 270$ ) who have at least six months of

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**Table 1**

Socio-demographic features of respondents.

Features	Respondent
Study year	130 Year 1, 119 Year 2
Mean age	19.89 ± 0.93 SD
Gender	52 Male, 197 Female
Religion	208 Muslim, 24 Hindu, 9 Christian, 8 Buddhist
Ethnicity	217 Bangladesh, 22 India, 10 Nepal
Academic background	202 SSC/HSC, 47 O/A Level

**Table 2**

Students' negative emotional and symptomatic reactions.

Symptoms	No of students	Percentage
Distress	123	49.4
Shock	77	31
Anxiety	61	24.5
Horrorific dreams	44	17.7
Nausea	27	10.8
Sleep disturbance	12	4.8
Frightening	07	2.8

exposure to anatomy were included. Ethical approval was obtained from institution ethics committee (Ref no: IERC-HFRCMC/001/DEC/2014). Consented participants were informed about nature and outcome of the study in detail. HFRCMC follows a curriculum which includes extensive sessions on anatomy in form of dissection, demonstration, and histology-based practical in addition to didactic theoretical lectures. The questionnaire was designed to collect information on demography, students' perception, and attitude toward cadaver dissection and their suggestions to ease any negative feeling. The students answered to

the questionnaire anonymously with a dichotomous key (yes or no) including a 5-point Likert scale responses according to the type of question. The recorded data were analyzed by employing SPSS 16. Mean with SD was calculated for quantitative variables. Frequencies and percentages were determined for qualitative data, which were further analyzed with Fisher's exact test (FET) and ANOVA.

### 3. Results

The response rates were 96.3% and 88% for first and second year students respectively. The socio-demographic characteristics are displayed in Table 1.

Among the respondents 96.8% were curious and interested to learn anatomy from dissection hall. Of all participants, about one third reported emotional shock (30.9%) and one half got distressed (49.4%) at the very first exposure to cadaveric dissection. Negative emotional and symptomatic reactions pointed by the students are summarized in Table 2.

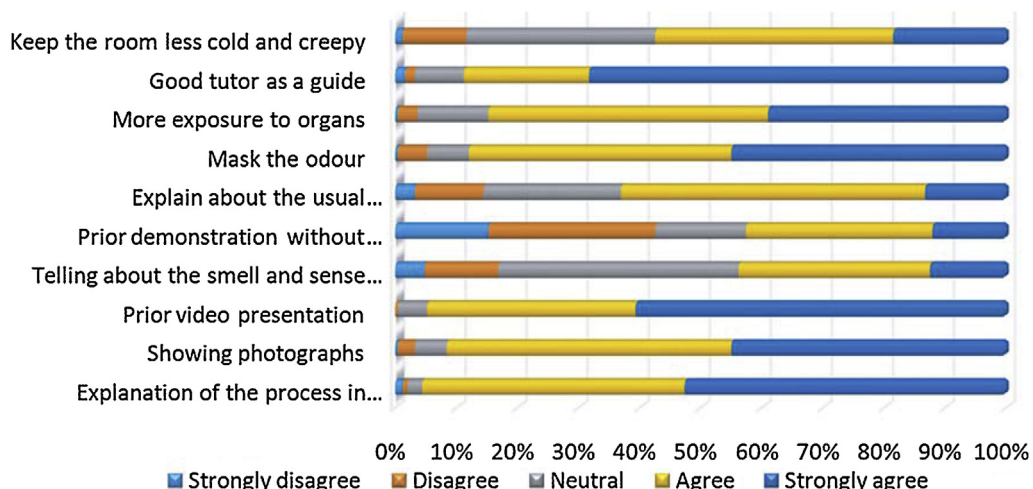
Most students (76.3%) agreed that dissection is the single best method of learning anatomy and 67% said that it cannot be replaced by computer aided learning. The effects of gender and year of study on respondents' attitude toward cadaver dissection are described in Table 3.

The need of pre-teaching session was highly recommended by the participants emphasizing mostly on visual tools including video presentations (95%) and photographs (91.5%) to acclimatize the fresh medicos with the creepy dissection rooms. Respondents' opinion regarding pre-dissection contacts has been depicted in Fig. 1.

**Table 3**

Association among students' perception on cadaver dissection with gender and level of study.

Effects	Male	Female	p-Value	Year 1	Year 2	p-Value
	Yes	Yes		Yes	Yes	
Did you find your first visit to the dissection room exciting?	44	185	0.042	121	108	0.642
Do you think that cadaver dissection for anatomical learning is ethically acceptable?	42	140	0.218	104	78	0.015
Do you favor hands-on training on cadaver dissection rather than demonstration of prosected specimen?	47	145	0.009	110	82	0.004
Do you think cadaver dissection as important and indispensable in anatomy learning?	45	176	0.622	124	97	0.001
Do you think that skill of logical thinking could be enhanced by dissection?	45	165	0.830	116	94	0.035
Do you prefer dissection as the best method for learning anatomy?	39	151	0.855	107	83	0.025
Do you think that plastic models, virtual tool and computer assisted program can replace the dissection method in recent future?	09	73	0.008	40	42	0.500
Did cadaver dissection have an effect on your daily activities?	11	79	0.014	38	52	0.025

**Fig. 1.** Students' recommendations to reduce anxiety and/or scary feelings.

#### 4. Discussion

Dissection has the potential to widen the spectrum of learning the basic language of medicine as well as touch-feel mediated perception of the human body. Apart from anatomical learning outcomes, dissection remains useful to the students for future clinical years and beyond. At the beginning, the medical students may have certain hesitation on 'cutting up' the dead, as do most of the lay people. Moreover, fainting episode of students during first dissection remains a frequent scenario in anatomy practical halls. This study demonstrates a considerable inclination to cadaver dissection in anatomy learning. Most of our respondents (92%) found their first visit to the dissection room quite exciting alike some previously conducted studies in Africa<sup>6,7</sup> and south Asia.<sup>8,9</sup> Emotional shock was reported by 31% respondents differing the findings of a recent report in India.<sup>8</sup> Another recently conducted study in Pakistan reported that dissection was thought to be unethical by 37.6% of their study respondent,<sup>10</sup> which was similarly reported by 27% of our respondents which differed significantly between the 1st and 2nd year students ( $p < 0.015$ ). In this study, cadaver dissection was reported to affect the daily activities by majority of female students. Interestingly, the same cohort affirmed to replace cadavers with plastic models or virtual tools, logically – which was differed by the male respondents, significantly ( $p < 0.008$ ). 'The logical thinking could enhanced by dissection', as stated by majority students in a study in Kenya<sup>6</sup> also remain consistent with our findings, although there was a significant disagreement by our respondents of 2nd year ( $p < 0.035$ ). Of major suggestions made by the students for coping up with reactions from cadaver exposure, the most common hint was on advance explanation of the process. This suggestion remained comparable with the description by other researcher.<sup>11</sup>

Moreover, projection of pre-recorded video clips showing relevant photographs and prior exposure to organs was also recommended by several respondents. We hypothesize this type of coping strategies may allow the students to confront the reality of dissecting room but in a less anxiety provoking manner than that of actual existing scary environment. We, therefore, recommend that related institutions should come up with the policies to install those facilities well ahead to let the students feel comfortable prior to face the hands-on real scenario. This survey was conducted in one medical school in Dhaka city, so all the findings should not be taken as generalized from all medical colleges from Bangladesh. Hence, the findings that we report here may not be widely applicable or totally replicable but this definitely remains important since it focuses on some vital academic issues for teaching-learning process.

#### 5. Conclusion

Cadaver centered anatomy teaching remains the leading approach to learn the basics of clinical medicine. The present study provides insights on students' perception along with the outlined stressors while encountering cadavers. In addition, the findings also evidences that the medical trainees of HFRCMC remain inclined to learn from the dead rather than modern tools and dummies. Re-defining the teaching strategies with preparatory sessions could foster the teaching-learning activities on human anatomy much more for the prospective doctors to come up in future.

#### Conflicts of interest

The authors have none to declare.

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