Medical Students Embarking On Their Career With Cadaver Dissection

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ABSTRACT
Objective: This study was initiated with an aim to recognize the various perspectives, attitudes and beliefs of the undergraduate medical students of Hayat Medical college to human cadaver dissection. Their physical and emotional responses for coping with cadavers were also recognized. Students were also asked for their opinion regarding utilization of alternative digital methods for understanding human body. A structured questionnaire was administered to 220 students (PC1, PC2, C1 and C2) all at the same time in August 2016. The mean age for males was considered as 23.9±0.9 and for females as 22.7±0.7 years respectively. Results: Out of 22(11.5%) students who did not perform dissection their reason was found to be low motivation in 3.6%, fear in 2.1% and the irritating odor of the preserving chemical in 1.6%. 39.1 percent of the subjects felt considerable anxiety and stress in the dissection room during their initial exposure. Many students did not report any abnormal reaction after being exposed to cadavers for the first time, however; eye irritation was a common symptom experienced. 133 students (69.3%) strongly supported cadaver dissection and refuted its role in hampering their ethnicity and culture. 71.9% students deny any benefits of other digital instructional materials like videos and models over cadavers. Conclusion: This study found that eye irritation, nausea and, fear and stress are some of the symptoms reported by MBBS students when they are first exposed to a cadaver in the dissecting room. It is, therefore, very important that anatomy instructors bring up new ideas/strategies to reduce such problems in the dissecting room. Pointing out such problems faced by students should also urge medical professors and tutors to indulge into new innovational strategies for teaching anatomy. (1)

Keywords: Dissection, cadavers, medical students.

1. INTRODUCTION

Human Anatomy is a very crucial subject for any medical students as they start embarking on their medical degree. To understand human body, dissection is one of the widely used method. It 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 the students emotionally as well as physically. (2)

STUDENT'S PHYSICAL AND EMOTIONAL EXPERIENCES
  DURING DISSECTION

Many students express a bunch of concerns related to cadavers. They feel that touching the cadavers will hamper their ethnicity and cultural background. While others find it very important for embarking on their medical degree and consider it as an essential component of pre-clinical training. Mixed responses are thereby, observed. (2)

Thus, it can be rightly said that performing on cadavers induce bot positive as well as negative experiences. Physical impact such as pungent smell affecting breathing, nauseated feeling, eye irritation (Conjuctivitis) can be noted in many students. Psychological symptoms such as Depression. Anxiety, stress, panic attacks can also be seen. A number of studies conducted in different parts of the world have documented reaction of medical students to human cadaveric dissection by examining experiences retrospectively through structured questionnaires. More recent studies have indicated that anatomy is only moderately or not very stressful and in fact generate considerable excitement and enthusiasm among the large majority of students (3).

Other studies of the anatomy dissecting room experience have reported that although the majority of their students expressed a positive attitude toward the initial encounter with the cadaver, a small percentage of students found it traumatic, 58% of their students suffer symptoms suggestive of posttraumatic stress disorder (4). Studies conducted in Nigerian revealed that few (a third) preclinical students identified the dissecting room as a very important stress while majority of them found it exciting (5).

One such study conducted in Ethiopia also concludes that 75% students report the dissecting room as being a little bit stressful, however, all the physical and psychological symptoms start declining along with students developing more and more interest and excitement for gathering new knowledge everyday by practicing on the cadavers. (1)

STATEMENT OF THE PROBLEM

Dearth of literature was found in the new private medical schools of Ethiopia regarding problems faced by students due to cadaveric dissection. Thus, making space for the research on this crucial topic , study was conducted at Hayat medical college to analyse the perspective of medical students in Ethiopia and the psychological & emotional symptoms felt by them. Data was also collected on methods used by students to cope up with these symptoms and accepting cadavers as an integral part of their preclinical training. Students were examined retrospectively through structured questionnaires. Students were also asked for their opinion regarding utilization of alternative digital methods for understanding human body.

OBJECTIVES

General objective

To assess the impact of cadaver dissection on the physical and psychological well- being of undergraduate medical students from Hayat Medical College students, AA, Ethiopia, 2016.

Specific objectives

- To identify symptoms or feelings experienced by students at confronting deaths/ cadaver, duration the symptoms, causes of the symptoms.
- To identify the coping mechanisms used by students to overcome the unpleasant feelings
- To identifies student's opinion regarding utilization of alternative digital methods for understanding human body

2. MATERIAL AND METHOD

Study design
A qualitative retrospective study design was used.

Study area.
The study was conducted at Hayat Medical College, which is the first private medical school in Ethiopia. It was established and started functioning in June 2005 G.C to educate and train medical doctors and nurses

Population
Source population
The source population will be Hayat Medical College students

Study Population
Preclinical 2, clinical 1 and 2 students
Sample size determination
Sample size (n) will be determined by using the following single population proportion formula.

$$n= [Z^2_{\alpha/2})(p\,(1-p)]\,/m^2$$

  Where:
    n is sample size
    z is confidence level
    p is Prevalence
    m is margin of error tolerated, (take it as 5%)
    (z=1.96 of 95%, p=0.5 and m=0.05)
Therefore, N=384
Since the source population is less than 10,100, we used the corrected sample size:
$N_c = n/\,(1+(n/N))N_c=$

where:

N_c is corrected sample size

   n is initial sample size

   N is source population

   N_c= 384/(1+(384/500)

   N_c= 217 {this is the corrected sample size that will be used in our study}

Sampling method
Simple random sampling (SRS) method will be used to select the the study participants.

Study Variables.
4.7.1 Dependent Variable
Medical students emotional and physical experience in the dissection room, their attitudes towards dissection.

Independent Variables
Age, sex

Data collection tool and procedure

A total of 217 medical students from preclinical one, preclinical two, clinical one and clinical two were included in the study. After obtaining formal permission from the college and consent from the participants, they were told about the objectives and relevance of the study before they filled out the questionnaires containing 36 items.

The questionnaire was based upon a review of similar studies which have been already described above in the Introduction. The basic components of the questionnaire were an introduction of the research, Socio-demographic characteristics of the respondents and questions about what they felt during their first exposure to the cadaver; whether touching the cadavers affected their ethnicity, religious beliefs and cultural background ;Mental preparation before dissection; history of any prior encounter with the dead body before dissection and its impact on tackling strategies with the cadaver. Students were also asked about their opinion regarding utilization of alternative digital methods for understanding human body**. In most of the questions the students were asked to answer in either 'Yes' or 'No' option.

Data Quality Assurance
The data was collected after clearance of the study and the questionnaire from the ethical committee of Hayat Medical College, Ethiopia which provided the best opportunities to researchers to ensure the quality of data.

Data analysis
After data collection, all collected data was checked for their completeness and consistencies by the principal investigator. Data was analysed with the help of SPSS version 16 (SPSS INC, Chicago) . Descriptive statistics (mean and frequency) and P value were used. The result was presented into tables, numbers and percent.

3. RESULT

Out of 217 students that participated in the study, 192 (88.5%) students completed the questionnaires correctly and returned. Eleven (5.7%) students were from first preclinical year, and 40 (20.8%) were from second preclinical year , 51 (26.6%) were from the first clinical year and 90 (46.9%) were from the second clinical year.

1) SOCIO-DEMOGRAPHIC CHARACTERISTIC
Socio-demographic characteristics have been displayed in Table **1** representing the age, gender, religion, marital status and educational level.

The majority of participants (110)(57.2%) were Christians out of which 83(43.2%) were orthodox; 2(1%) were catholic and 25(13%) were protestant. The remaining 82(42.7%) were muslims.

Table 1 Sociodemographic characteristics

Characteristic		Frequency	Percentage
Gender	Male	94	49
	Female	98	51
Religion	Orthodox	83	43.2
	Catholic	2	1.0
	Protestant	25	13
	Muslim	82	42.7
	Single	171	89.1

Marital status	Married	19	9.9
	Divorced	2	1
	Widow	0	0
Educational level	Pre-clinical 1	11	5.7
	Pre-clinical 2	40	20.8
	Clinical 1	51	26.6
	Clinical 2	90	46.9

All the students participated in study had the exposure to the dissection room, out of which 170 (88.5%) performed dissection, 22(11.5%) did not perform dissection. Out of those students who did not perform dissection their reason was found to be low motivation in 3.6%, fear in 2.1% and the irritating odor of the preserving chemical in 1.6%. (see the graph or table below). 75 students were very excited about their first experience in the dissection room (39.1%). Which is followed by 72 students (37.5%) who were scared. 39.1 percent of the subjects felt considerable anxiety and stress in the dissection room during their initial exposure. However, these feelings were found to be regressing gradually over time in 104 (54.2%) of respondants.

55.7 % of the students complained about being anxious about handling and touching cadavers. 70 students (36.5%) went through panic attack after touching cadavers, a majority of them (23.4%) attributed their emotional shock to their thought of human being dissected.
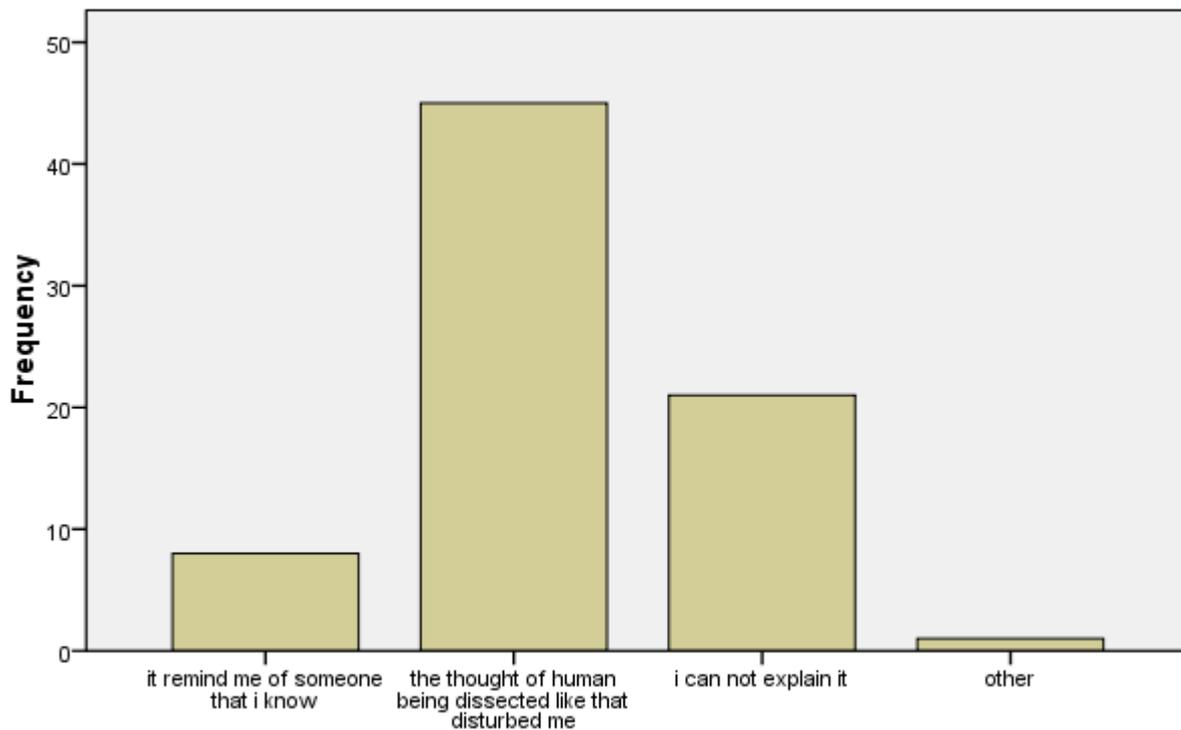
Causes of emotional shock in the Dissection Room

Fig.1 – Causes of emotional shock in the dissection room

The eye irritation caused by the volatile chemicals from the cadaver as reported by 31.8%, nausea (24.5%) and fear and horror (12.5%) were found to be factors that contribute for the feeling of anxiety and stress in the dissection room.
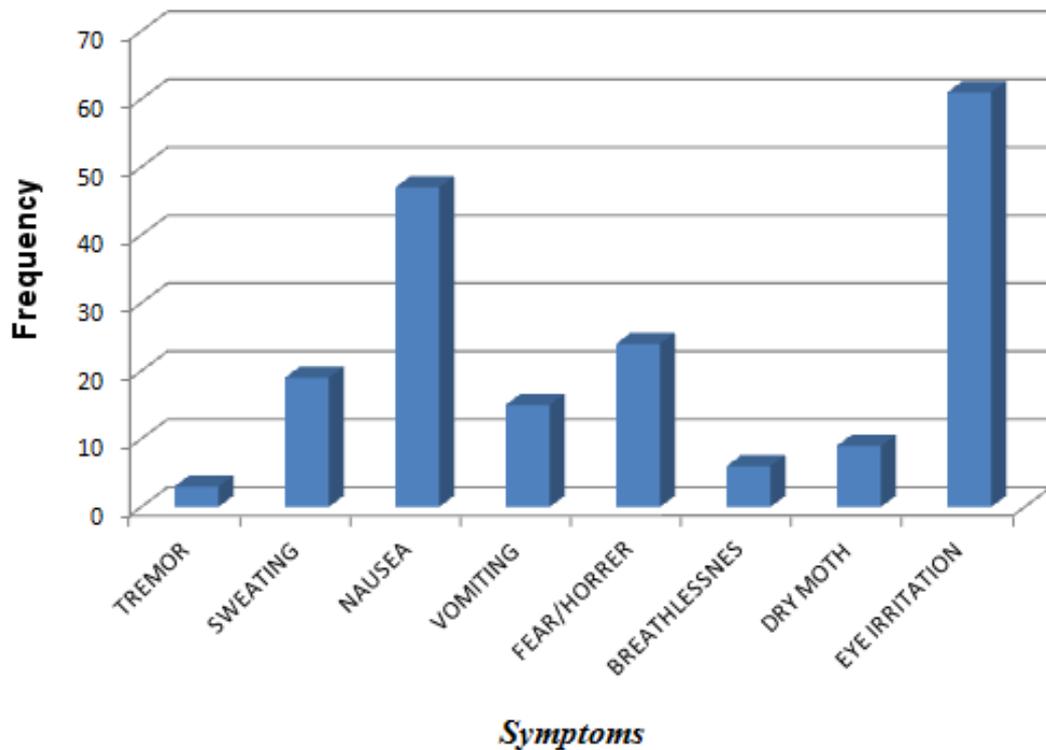
Fig.2- Physical and Emotional responses by respondants in the dissection room and outside of the dissection room

Regarding diet, majority of students (49.1%) reported that exposure to the cadaver did not change their appetite. However 6.4% of students out of the total respondants reported that after seeing the cadaver they stopped eating non-vegetarian foods

This study showed that no student experienced any of the above symptoms for prolonged duration. Out of the total number of students who stopped eating non vegetarian foods, 37.1% of the students stated that the symptoms disappeared on the very next day , in 22.8% of students symptom disappeared after repeated visits to dissection room.

Out of the total study respondents only 74 (38.5%) reported that they had prior training for mental readiness before attending the dissection room from the first time. Majority of these students (90.6%) reported that their prior training helped them to have a better copping mechanism to overcome their ethical concern.
152 respondents (79.2%) reported that they do not have prior exposure of dead human body. 40 respondents (20.8%) had a prior experience with the dead human body and reported that it helped them to develop a better coping mechanism.
133 students (69.3%) did not feel like it was violating their ethical or religious back ground.

Regarding the educational value of cadaver in anatomy teaching, 71.9% of respondents refute the capability of other instructional materials like videos and models to explain human anatomy better than cadavers.
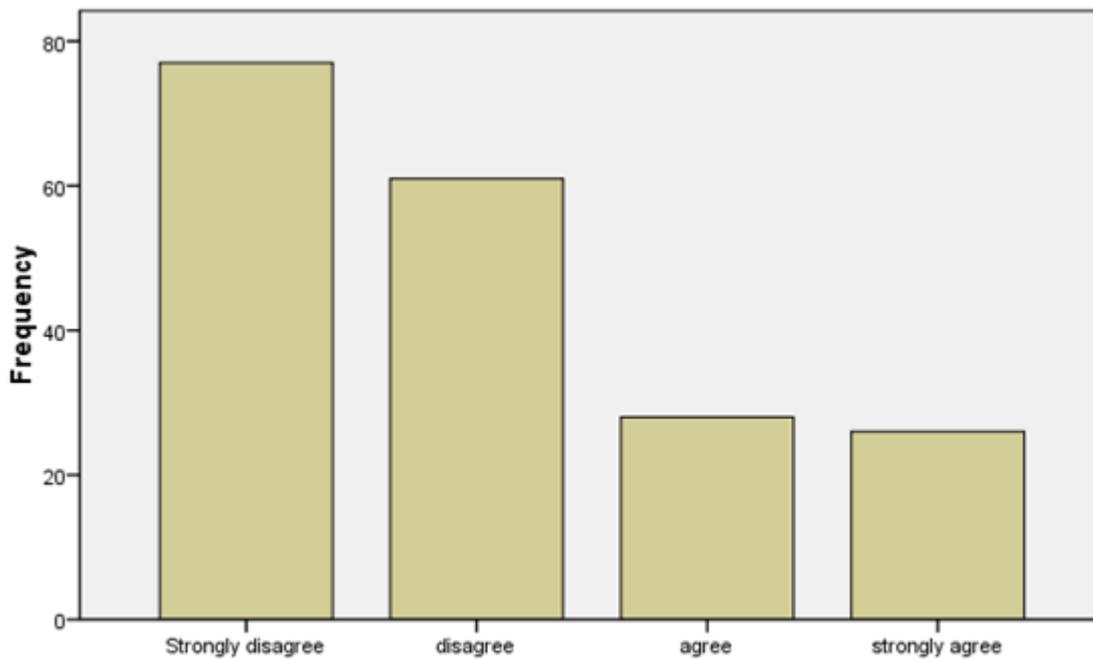
Fig 3- Number of respondents in support of cadaveric dissection

4. DISCUSSION

The student-cadaver-patient encounter is more important than any other thing in the medical profession because it gives a better appreciation of the three-dimensional anatomy and helps to remove the fear factor from the students. (4)

Previous studies show the various perspectives, emotions and opinions of medical students towards cadaver dissections. Medical students are enthusiastic to learn about the human body despite the physical and psychological effects of cadaveric dissection. (5).

This study tried to assess students' feeling during their first exposure to the cadaver and its effects on their ethnicity, religious beliefs and culture; mental preparation required before dissection; effects of any prior experience with dead bodies, strategies of tackling with the bodies and alternative methods to study anatomy such as videos, models, etc.
The observations and findings from the study shows positive response of the students towards the cadaveric dissections. Parker (2002) reports that cadaver dissection has been considered as essential requirement in learning three-dimensional aspect of human anatomy (5) and has remained universally recognizable step in becoming a doctor (3), which puts undergraduates at the sharp end of medical education.

5. CONCLUSION

To the best of our knowledge, this was the first study documenting students perspectives, emotions and opinions of medical students towards cadaver dissections in a newly established private medical college in Ethiopia, specifically Hayat Medical, the first private medical college in Ethiopia.

This study found that eye irritation, nausea and, fear and stress are being experienced by medical students. It is, therefore, very important that anatomy instructors bring up new ideas/strategies to reduce such problems in the dissecting room.

LITERATURE GAP
Our study allows us to infer that cadaver dissection is most preferred teaching tool for human anatomy, in spite of other alternatives. Students should be prepared, counselled and motivated to help them cope up in a better way with cadavers.

FUTURE SCOPE
- ➢ There may be a need to put emphasis on training and counseling before dissection sessions to make the experience a better one and hassle free for the students.
- ➢ Further studies in other newly established private colleges in Ethiopia are highly recommended to possibly replicate the findings in this study..

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