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Impact Of Dissection On First Year MBBS Students: A Descriptive Study.

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ABSTRACT

Anatomy is a very important subject of MBBS course. Learning Anatomy through the dissected cadaver is very essential in understanding various parts of human body and their relations. When the students are first exposed to the sight of cadaver dissection, it has the potential to be an actual stress or that can cause psychological trauma like anxiety, stress, fear, depression or excitement. Physically also it can cause nausea, vomiting, lacrimation or head ache.

Objective: To analyze both physical and emotional impact of dissection on first year MBBS students.

Method: First year MBBS students from batch 2019-2020 comprising of 150 candidates were taken for this study. Students were given questionnaire in 2 sets, one at the first week and another at the last week. The answers were collected in "yes" or "no" form. It was analyzed and compared with other's studies.

Result: 91.3% of students were excited to see the cadaver for the first time. The fear was reduced to 2% at last week of dissection. For 84.7% students it was first exposure to cadaver. For 50 % of them it was irritable due to formalin in the initial week, later it was reduced to 29.3%. 78% students were seen the skeleton before coming to medical college. Physical symptoms like nausea, vomiting and giddiness were reduced in the last week. 78% of students felt that the dissection is helpful. 72% of them understood the topic better by doing dissection.

Conclusion: Cadaveric dissection is an indispensable teaching method to study the gross anatomy. The students learn better from this method. The symptoms which were seen in the beginning gradually disappeared. Students were adapting to the untoward situations of dissection and learning anatomy in a better way.

Keywords: Cadaveric dissection, teaching method, questionnaire, impact.

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INTRODUCTION

Anatomy is the important subject of MBBS which will be studied in the first year. Practicing Medicine by the Medical students requires the knowledge of Anatomy. The actual structures of human body can be visualized by dissection [1]. The detailed organization of the human body can be studied by different methods including models and cadaver [2]. From many centuries, dissection is the effective method of teaching Anatomy and it has been labeled as royal road and the cadaver first patient. Study of human body by dissecting a cadaver layer by layer remains the pillar and integral part of teaching medical students by teachers [3]. For many medical students the dissection hall is the place where they are exposed to the dead body for first time. This first exposure of cadaver in dissection hall will create different types of impact on the medical students. That may be in the form of Physical or Mental stress. Physical effects like nausea, vomiting, giddiness or irritability of eyes etc. Mentally they may be excited or there may be a fear. These factors can impact effect on their learning Anatomy. The negative perception will result in detachment. This leads to lack of interest in learning and understanding the structure of human body. If the basic foundation is not given properly in the first year, there will be difficult in learning of clinical aspects in future. We being teachers should help them to overcome all the negative impacts and help them understand the structure and organization of human body through cadaveric dissection. Many studies have been done to know the psychological effect of dissection on first year students. We wanted to explore some more insights in our students and to know the impact of dissection on them so that in future we can take some measures to reduce their effects like anxiety, fear, etc.

MATERIAL AND METHODS

It was a descriptive study done in The Oxford Medical College Hospital & Research Center, Yadavanahalli, Bengaluru, Yadavanahalli. 150 students of first year MBBS 2019-2020 batch were taken for this study. They were belonging to the age group between 18 to 22 years. The study was done from September 2019 to August 2020. It was questionnaire-based study. The questions were prepared by the anatomy staff and taken feedback from the Medical Education Unit of our institution. The ethical committee clearance was taken. The consent of the students was taken after explaining in detail about the study. Two sets of Questionnaire were given to them. Both Physical and Psychological related questions were included in the questionnaire. One set was given at the first week of dissection. Second set was given at the last week of dissection. The opinion has to be given in the form of “yes” or “no” pattern. The following questionnaire was given to each one of them and percentage was taken and both parameters were compared. It was analyzed and compared with study done by other authors with same parameters.

Inclusion criteria: First year students of only 2019 – 2021 batch.

Exclusion criteria: The students who belong to previous batches.

Table 1: Questionnaire given at the first week of Dissection

SL NO	Questions
1.	Are you excited to see the cadaver?
2.	Do you have fear of seeing cadaver?
3.	Is this the first exposure to cadaver?
4.	Did you have any idea about dissection?
5.	Is the formalin smell irritable to you?
6.	Did you feel like doing dissection?
7.	Do you want to touch the cadaver?
8.	Have you seen a human skeleton before?
9.	Do you want to touch the human skeleton?
10.	Are you feeling Nausea? Vomiting? Giddiness? Any other symptoms?

Table 2: Questionnaire given at the Last week of dissection

SL NO	Questions
1.	Do you have fear of cadaver dissection?
2.	Do you have irritability to formalin?
3.	Did you do the dissection?
4.	Did you feel elated after doing dissection?
5.	Did you get nightmares about the cadaver?
6.	Do you come prepared before doing dissection?
7.	Do you think dissection is helpful?
8.	Do the group dissections help you in understanding the topic?
9.	Did you approach Anatomy staff to lessen the fear of dissection?
10.	Are you feeling Nausea?
	Vomiting?
	Giddiness?
	Neutral?

RESULTS

Table 3: Percentage of student's perception at the first week of dissection

SL NO	Questions	Yes	Yes %	No	No %
1.	Excitement to see the cadaver	137	91.3	9	6
2.	Fear of seeing cadaver	21	14.0	126	84
3.	First exposure to cadaver	127	84.7	19	12.7
4.	Idea about dissection	25	16.7	123	82
5.	Irritable formalin smell	75	50.0	69	46
6.	Felt like doing dissection	103	68.7	42	28
7.	Want to touch the cadaver	103	68.7	43	28.7
8.	Seen a human skeleton before	117	78.0	35	23.3
9.	Want to touch the human skeleton	130	86.7	18	12.0
10.	Nausea	23	15.3	130	86.7
	Vomiting	13	8.7	0	0
	Giddiness	6	4	0	0
	Any other symptoms	5	3.3	0	0

Table 4: Percentage of student's perception at the last week of dissection

SL NO	Questions	Yes	Yes %	No	No %
1.	Fear of cadaver dissection	3	2.0	115	76.7
2.	Irritability to formalin	44	29.3	75	50.0
3.	Did the dissection	111	74.0	7	4.7
4.	Elated after doing dissection	84	56.0	34	22.7
5.	Got nightmares about the cadaver	5	3.3	113	75.3
6.	Came prepared before doing dissection	64	42.7	54	36.0
7.	Dissection was helpful	117	78.0	1	0.7
8.	Group dissection help you in understanding the topic	108	72.0	9	6.0
9.	Approach Anatomy staff to lessen the fear of dissection	18	12.0	99	66.0
10.	Nausea	3	2	94	62.7
	Vomiting	0	0	0	0
	Giddiness	4	2.7	0	0
	Neutral	1	0.7	0	0

DISCUSSION

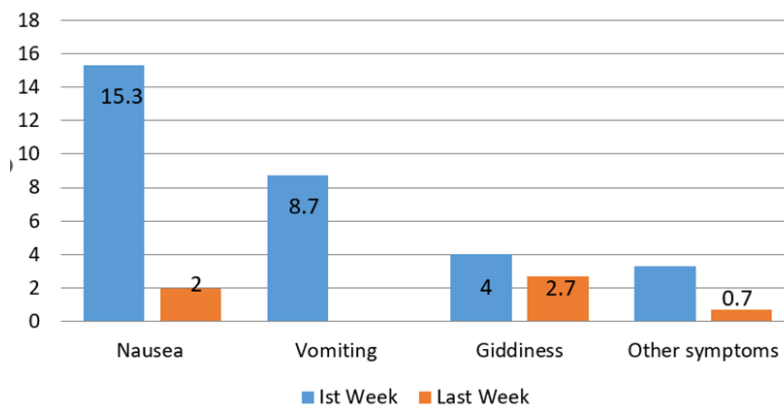
Anatomy is one of the subjects in first year along with Physiology and Biochemistry. The meaning of anatomy in Greek is “cutting up”. In first year MBBS the students will have various type of anxiety regarding the learning pattern of new subjects. Anatomy is very important subject to understand the structural arrangement within the human body.

Several teaching resources are used to enhance the learning of anatomy. The dissection is the main tool of teaching Anatomy. Cadaveric dissection of complete body has been recognized as a universal method of teaching Anatomy which is traditionally based around the use of human cadaveric specimens [1].The students can appreciate the normal arrangement of the gross structures, also they can study the variations through this method. Even though many other modalities of teaching Anatomy has come, like through the non-cadaver models, plastinated specimen’s computer images, the dissection of cadaver remains the best method. In the present study 84.7% of the students were exposed to the cadaver for the first time. In Ruchi Ratnesh’s study it was about 13.89%, in Umesh Choudari’s study it was 50%. In the first week of dissection 91.3% students were excited to do the dissection in our study, 14% of the students had fear but it is reduced to 2 % at the last Week. Gradually there was decrease fear and increased excitement among students towards the dissection. It is better to sensitize the students about the dissection before their exposure to cadaver [1]. The sensitization should be done both mentally and emotionally before entering dissection hall which will reduce their anxiety [4].Many medical students experience stress when they are exposed to the cadaver for the first time that may cause positive or negative impact on them [5].Only 16.7 % had the idea about the dissection. 50% of them were irritable because of formalin smell.

Reinforcement and elaboration of knowledge that is acquired in lectures and tutorials can be done by dissection [4]. In our study 78% of the students agreed that dissection is helpful in understanding Anatomy. In Gaurav Agnihotri’s study 83.66% felt that cadaver dissection gave better results than demonstration of prosected specimen and increased the confidence [4]. 72% opined that group dissection was helped them in understanding the related topic. Human cadaver dissection is not only important as an educational strategy but also play an important role as a professional training tool in technical and emotional skill training.74 % of them did the dissection and were very excited to learn the skill. In Ruchi Ratnesh’s study 90% of the students were excited [8]. The dissection can teach Anatomy as well as, it helps to handle emotions and to learn how to carry doctor patient relationships [6]. It should have a positive effect on their clinical attitudes. The dissection plays a unique role in assisting students to understand the complexities of the human structure and function [7].

The teacher student interaction will help in improving the mental status of students to handle the highest level of stress in clinical carrier [8]. In our study only 12% of the students approached Anatomy staff to lessen the fear of dissection. It is always better to sensitize everyone before entering the dissection hall that will reduce their fear and anxiety. Ritu et al suggested that the stress of the students can be reduced by organizing orientation programs by clinical psychologist along with anatomist, doing Group discussions with faculty members regarding their problems and by better teacher-student interaction [9].

Chart 3 : Comparision of physical symptoms between first & last week of dissection



The chemical odour and eye irritations were the leading factors creating discomfort in the dissection room. Physically also most of the students will experience many symptoms. In our study initially 15.3 % had nausea but at the end it was reduced to 2%. At the first week 8.7% of the students experienced vomiting but at the last week no one had this. Giddiness and irritability of eyes are also reduced significantly. The physical and emotional symptoms suffered by the students decreased gradually. The initial problem of nausea, vomiting and giddiness are reduced as they are involved in dissection. 23% of the students had nausea in the initial week; it was reduced to 3% at the last week. Most of the students preferred the cadaveric dissection for understanding the concept of Anatomy.

When we compared the Physical symptoms of students with studies of other authors, we found the following findings as shown in table 5 [Table 5].

Table 5: Comparison of physical symptoms observed in others study.

Sl no	Studies done by various authors	Nausea %	Vomiting %	Giddiness %	Irritability to formalin%
1	Anju Partap Kaundal and Purshottam K. Kaunda	23	4	-	84
2	Dr Gaurav Agnihotri, Mandeep Gill Sagoo	45	-	3	-
3	Ritu Singroha , Usha Verma , Preeti Malik , Pankaj Chhikara , Suman Yadav	7	-	2	-
4	Biswas R, Bandyopadhyay R	18.2	-	-	-
5	Vinay Kumar V, Martin Lucas A, Vishal Kumar, Pradeep Kulal.	5	-	4	95
7	Our's study	15.3	8.7	4	50

Every good clinician needs to have a sound knowledge of anatomy besides the clinical specialties. Dissection is important for Gross anatomy learning particularly the three-dimensional aspect of human anatomy. It enhanced the student's skill of logical thinking which helped them in better understating other medical subjects [8, 10]. Anatomical dissection being an active, student-centered and exploratory way of learning can be considered harmonious with current trends in medical education. Computer and multimedia should be complementary but not a substitute to dissection [11]. So the students should overcome the unpleasant symptoms that occur due to cadaveric dissection. The benefits of dissection are memory enhancement, peer teaching, three-dimensional anatomy and spatial association [12]. Paucity of cadavers and cost also shifted in developing alternative methods like virtual dissection programme. Student's attitudes towards the dissecting room remained consistently positive for the duration of the study with only a few in numbers of respondents report negative symptoms. Majority of students preferred dissection as the most useful tool to learn anatomy than any other method [13]. Visualization is an important tool in the procurement of Anatomical knowledge [14]. Students can learn better by seeing. The Knowledge of Anatomy that they learned through dissection will help in their future clinical practice in locating the organs as well as in identifying anatomical variations. All the symptoms were reduced gradually. In the beginning if the teachers sensitize the students properly, the symptoms can be reduced in the earlier stage only. This study helped us to concentrate on the measures that have to be taken before the first entry of students into the dissection hall.

The physical and psychological problems encountered by the MBBS students associated with cadaveric dissection can be reduced by orientation programme, group discussion and better teacher-student interaction [9, 12]. The dissection hall experience can be made more pleasant by counseling the student's physical, mental and emotional problems repeatedly [10]. Taking the guidance of teaching staff related to human cadaveric material, the students can get the added value to the learning process of anatomy [14]. Realizing the importance of sensitization of students National Medical Council (NMC) has introduced topics under AETCOM related to body donation and cadaver handling for I MBBS students. In the first few weeks these topics should be completed so that the students will be aware of cadavers, it's importance and how to handle the cadaver during dissection. Along with the body donation we can explain about the preservation of cadaver by embalming. By doing this we can increase the respect towards the donated body and also we can reduce their fear in approaching the cadaver.



CONCLUSION

Even though there was stress and anxiety among students on first exposure of the cadaveric dissection, in the subsequent days they overcame from all these and learned Anatomy and enjoyed their participation. All the physical and emotional symptoms were reduced gradually and they preferred dissection for better learning of Anatomy. Dissection method still remains the best tool of learning Anatomy. If the students are sensitized during foundation course before starting the dissection will be of helpful in coping up with their problems.

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