



## Implementation of AETCOM Module 1.5 in Dissection Hall for Better Understanding of Ethical Values to Phase 1 Students

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### Abstract

**Background:** Anatomy is basic foundation of medical field. Dissection plays crucial role in learning Anatomy even in these days of advanced technology. The reason being Dissection not only gives real body experience but also teaches ethics related it. AETCOM module 1.5 which is based on same concept hence can be used at 1st year of medical education to develop necessary attitude in students.

**Methods and Material:** The study was done on 120 MBBS phase 1 students. AETCOM module 1.5 was implemented in two sessions. Pre-test, post-test and feedback were taken from students at the end. The data collected was statistically analyzed.

**Results:** Statistically significant difference was observed in both the tests in questions related to body procurement, preservations and disposal as well as ethical practices.

**Conclusions:** AETCOM 1.5 module session helps MBBS phase 1 students to understand importance of human tissue, ethical practices related to it. It also helps to develop proper attitude in them.

**Keywords:** AETCOM; Anatomy, Dissection, Ethics

### INTRODUCTION

Every Medical student's 1<sup>st</sup> encounter is with the cadaver in Dissection hall as he enters the medical college. Anatomy, one of the basic science, forms the basic foundation for medical field. Though it is taught by various teaching learning methods, Dissection plays very crucial role in it.<sup>[1]</sup> Dissection is still followed in learning Anatomy even in this era of newer technological advances like virtual dissection. This is because cadaver handling not only gives real human body experience, but also teaches ethics related to handling of human tissues.<sup>[2]</sup> Hence to inculcate the ethical values needed for a Doctor the AETCOM module 1.5 can be used starting from phase 1 of medical education.<sup>[3]</sup> It is not just helpful from exam point of view but this will help the

students to develop attitude needed in medical profession specially in this period where respect and belief on doctors is reducing.

### AIMS AND OBJECTIVES:

1. To sensitize students about importance of biologic tissues and cadavers in the learning.
2. To make students aware about body donation and values related to it.
3. Sensitization of students about safe and clean handling and disposal of biologic tissue.
4. To inculcate the humanity values in students by involving them with the help of interactive session.

## MATERIAL AND METHODS:

The study included 120 Phase 1 students of M.B.B.S. After approval from ethical committee and consent from students, this AETCOM module was introduced.

1<sup>st</sup> session was conducted as opening session for 2 hrs on 1<sup>st</sup> day in Anatomy department.

Pre-test was conducted about the knowledge of students regarding the ethical issues of handling cadaver and human tissues. It was followed by introductory session which covered topics like history of Anatomy, Anatomical act. After that Cadaveric oath was taken by students in dissection hall.

It was followed by Small group session which covered following topics.

1. Importance of biologic tissues and cadavers in learning.

## PRE-TEST/ POST TEST

1. Do you think Dissection is essential for learning Anatomy?  
a) Yes                      b) No                      c) Can't Say
2. Do you feel Dissection will be better in understanding Anatomy than virtual Dissection?  
a) Yes                      b) No                      c) Can't Say
3. Do you ever think that the cadaver you are going to dissect was once a living human being like you?  
a) Yes                      b) No                      c) Can't say
4. Do you know how the bodies are procured for dissection?  
a) Unclaimed body      b) body donation      c) don't know      d) any other
5. Do you know after procuring the bodies, how the bodies are preserved?  
a) Yes                      b) No                      c) Can't Say      if Yes, how?
6. Do you know how the bodies are disposed after dissection is over?  
a) Yes                      b) No                      c) Can't Say      if Yes, how?
7. Which do you think are the advantages of dissection?  
a) Practice of handling human tissues.                      b) Exposure to anatomical variability  
c) Apprehension of 3D structure of human body.      d) Instilling respect for human form.  
e) Training for a team work.                                      f) Skill of thinking in logical manner.  
g) Gives long term cognitive memory about anatomy.      h) Any other
8. Do you feel that paying respect to the body while dissection is of utmost importance?  
a) Yes                      b) No                      c) Can't Say

2. Procedure to procure cadavers- unclaimed bodies, body donation.
3. Respect for cadavers, donor families, biologic tissue.
4. Safe and clean handling and disposal of biologic tissue.

2<sup>nd</sup> session for 2 hrs was conducted as closing session at end of phase 1. It was done online by a zoom meeting due to COVID 19 pandemic. Post- test was also conducted with the help of Google forms. Reflections by students were noted about how cadaver helped them in learning and their experience with dissection. These presentations from students were in form of small talk or poem or as a letter to cadaver.

Students' feedback was also taken at the end.

9. Do you think using ethical practices followed during dissection will help you in dealing with the patients in clinics which is the need of the hour?

- a) Yes                      b) No                      c) Can't Say

10. Do you think cadaver is the 1<sup>st</sup> teacher in learning Anatomy?

- a) Yes                      b) No                      c) Can't Say

## RESULTS:

Method of statistical analysis – Data obtained was entered and sorted in Microsoft Excel (v.2013). Statistical analysis was performed using Statistical package for social sciences (SPSS) software (v.21.0). Frequency and Descriptive statistics was performed for all the questions. Chi-square test of proportion was used to determine significant differences within the responses of each question. Paired samples t-test was used for pre and post comparison of responses of all questions amongst the participants. All statistical tests were performed at 95% confidence intervals; keeping p value of less than 0.05 as statistically significant.

According to responses from students, it was observed that most of them were aware that Dissection is essential for Anatomy and it is better than virtual dissection.<sup>[Table 1,2]</sup> They also considered that cadaver was once a living thing, as no significant difference observed in pre and post test.<sup>[Table3,11]</sup> However, many of them got the knowledge about procurement, preservation and disposal of bodies after the implementation of module as statistically significant difference<sup>[Table7,8,9,11]</sup> observed in pre and post test.

Many students agreed about different advantages of dissection by the end of year.<sup>[Table10]</sup>

They felt that paying respect to cadaver is of utmost importance and it's a first teacher in learning Anatomy.<sup>[Table4,6]</sup>

Students agreed that ethical practices followed during dissection will help them in future practice as statistical significance seen in pre and post test.<sup>[Table5,11]</sup>

## DISCUSSION:

AETCOM Module 1.5: The cadaver as our first teacher; discussed AETCOM Competencies for the Indian Medical Graduate, 2018 to inculcate humanitarian values in students from 1st year itself.<sup>[3]</sup>

Tulsi S discussed various ethics related in cadaveric dissection like professional behaviour of students and teachers in dissection hall, cadaveric oath, disposal of body parts etc in 2017.<sup>[4]</sup>

In 2011, Dr. Abu SMN et al discussed ethical concerns in dissection, rules and regulations and safety in dissection, preservation of organs.<sup>[5]</sup>

In 2002, Rizzolo et al discussed inculcation of humanistic values during dissection and teaching of Anatomy.<sup>[1]</sup>

Pampilly et al discussed about procurement of bodies for dissection and different laws, Anatomical act related to it.<sup>[6]</sup>

Abu Sadat MN et al discussed about ethics in dissection of cadaver in teaching and learning of Anatomy. They described ethical concerns in dissection of cadavers, rules and regulations for working in dissection hall like care of cadavers, laboratory access and safety, preservation of the tissues and organs.<sup>[5]</sup>

Anne D Souza et al implemented a module called Cadaver as a First Teacher( CrAFT Module), in 3 sessions. It included sensitizing students, individual and group activities, thanksgiving and reflections. According to that this module nurtured in students values of professionalism, human values, and empathy.<sup>[7]</sup>

Shagupta shaikh discussed about ethics and cadaver dissection, dissection hall etiquettes, care of cadavers, preservation of organs.<sup>[2]</sup>

Andreas Winkelmann et al discussed Cadaver as teachers: the dissecting room experience in Thailand which included Thailand's approach to body donors offers a good model for resolving the ethical difficulties associated with student dissection.<sup>[8]</sup>

A. Domma Ropmay in her article, The Cadaver as our first Teacher discussed how dissection hall is ideal place to overcome fears and learn to strike

balance between empathy and detachment in any situation.<sup>[9]</sup>

Prakash, Prabhu L V et al in review article- Cadaver as teachers in medical education: knowledge is the ultimate gift of body donors, discussed Anatomical gift programme of western world, Thailand's approach to body donors, barriers related to cadaveric teaching.<sup>[10]</sup>

Asma N Khan, Salman Baig, Syeda Zain discussed Importance of Cadaveric Dissection in Learning Gross Anatomy by a cross sectional study on graduate and postgraduate doctors with the help of a Questionnaire.<sup>[11]</sup>

In our study apart from statistically significant results in pre and post test as discussed in results, we also got valuable feedbacks from students in closing session in form of poems or small talks. They found cadavers help in long lasting memory and learning for them became easier and realistic. Some students thought about its family and got sense of responsibility and confidence while holding the scalpel. Many agreed that it taught them values like empathy, selflessness, trust.

Some of the feedbacks were like, 'While dissecting your body, I wondered what plight did these eyes have to see, what challenges did this brain have to face, what pain has this heart been through, despite all these, thank you for sacrificing your body for the purpose of medical study.' 'Watching the vast network of an artery and a vein, With your help I have so much to gain.'

'Oh cadaver! Oh cadaver! You've taught me a lot! Sacrificed your body for students who ought to learn and to honour the exceptional human being! Thank you, we say, while our hearts are aching! Now that we have come to an end of this journey, we see them take you away on the gurney'

'A heartfelt goodbye and the promise to never forget, the lessons you've taught us and the targets we set! One fine day, when you awaken as a doctor, I guarantee that you will not remember, My name, face or gender But the anatomy I taught you will stick to you for a lifetime, In disguise of your patients lifeline. Thus, all I expect, Is a little respect, For what I leave behind after my life, Is a subject full of curiosity, knowledge and wonder, starting with the cut of a knife.'

These thoughts of students at the end of phase 1 totally reflect the attachment developed with cadaver by them throughout the year.

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**Table NO. 1- Q1- Is dissection essential for learning Anatomy?**

	Pre		Post	
	Frequency (n)	Percent (%)	Frequency (n)	Percent (%)
<b>Yes</b>	118	98.3	120	100.0
<b>No</b>	2	1.7	-	-
<b>Total</b>	120	100.0	120	100.0

**Table NO.2- Q2- Is dissection better than virtual dissection?**

	Pre		Post	
	Frequency (n)	Percent (%)	Frequency (n)	Percent (%)
<b>Yes</b>	119	99.2	119	99.2
<b>No</b>	1	.8	1	.8
<b>Total</b>	120	100.0	120	100.0

**Table 3 NO.-Q3- Do you think cadaver was once a living thing?**

	Pre		Post	
	Frequency (n)	Percent (%)	Frequency (n)	Percent (%)
<b>Yes</b>	115	95.8	119	99.2
<b>No</b>	3	2.5	-	-
<b>Cant say</b>	2	1.7	1	.8
<b>Total</b>	120	100.0	120	100.0

**Table 4 NO.- Q8- Do you think paying respect to cadaver is important?**

	Pre		Post	
	Frequency (n)	Percent (%)	Frequency (n)	Percent (%)
<b>Yes</b>	117	97.5	120	100.0
<b>No</b>	2	1.7	-	-
<b>Cant say</b>	1	.8	-	-
<b>Total</b>	120	100.0	120	100.0

**Table NO.5-Q9- Will ethical practices in dissection hall will help in future?**

	Pre		Post	
	Frequency (n)	Percent (%)	Frequency (n)	Percent (%)
<b>Yes</b>	108	90.0	118	98.4
<b>No</b>	3	2.5	1	.8
<b>Cant say</b>	9	7.5	1	.8
<b>Total</b>	120	100.0	120	100.0

**Table NO. 6-Q10-Is cadaver first teacher in learning anatomy?**

	Pre		Post	
	Frequency (n)	Percent (%)	Frequency (n)	Percent (%)
<b>Yes</b>	118	98.4	120	100.0
<b>No</b>	1	.8	-	-
<b>Cant say</b>	1	.8	-	-
<b>Total</b>	120	100.0	120	100.0

**Table 7 NO.-Q 4- How bodies procured for dissection?**

	Pre		Post	
	Frequency (n)	Percent (%)	Frequency (n)	Percent (%)
Unclaimed body	4	3.3	5	4.2
Body donation	56	46.7	48	40.0
Dont know	5	4.2	-	-
Other	4	3.3	1	.8
Unclaimed, donation	51	42.5	66	55.0
<b>Total</b>	120	100.0	120	100.0

**Table 8 NO.- Q 5-How bodies are preserved?**

	Pre		Post	
	Frequency (n)	Percent (%)	Frequency (n)	Percent (%)
Yes	89	74.2	95	79.2
No	23	19.2	20	16.7
Cant say	8	6.7	5	4.2
<b>Total</b>	120	100.0	120	100.0

**Table 9 NO.- Q 6-How bodies are disposed?**

	Pre		Post	
	Frequency (n)	Percent (%)	Frequency (n)	Percent (%)
Yes	6	5.0	89	74.2
No	108	90.0	31	25.8
Cant say	6	5.0	-	-
<b>Total</b>	120	100.0	120	100.0

**Table NO. 10- Q 7-What are Advantages of dissection?**

	Pre		Post	
	Frequency (n)	Percent (%)	Frequency (n)	Percent (%)
<b>All options</b>	45	37.5	75	62.5
<b>a</b>	27	22.5	6	5.0
<b>b</b>	14	11.7		
<b>c</b>	8	6.7	1	.8
<b>h</b>	9	7.5	3	2.5
<b>g</b>	3	2.5	3	2.5
<b>a,b,c</b>	6	5.0	6	5.0
<b>a,b,c,g</b>	5	4.2	8	6.7
<b>a,b,c,e,g</b>	2	1.7	11	9.2
<b>a to g</b>	1	.8	7	5.8
<b>Total</b>	120	100.0	120	100.0

**Table NO.11- Pre and post comparison of responses of all the questions**

		t	df	p value
Pair 1	Pre Q1 - Post Q1	1.420	119	.158
Pair 2	Pre Q2 - Post Q2	.000	119	1.000
Pair 3	Pre Q3 - Post Q3	1.295	119	.198
Pair 4	Pre Q8 - Post Q8	1.645	119	.103
Pair 5	Pre Q9 - Post Q9	2.789	119	.006*
Pair 6	Pre Q10 - Post Q10	1.346	119	.181
Pair 7	Pre Bodies procured for dissection - Post Bodies procured for dissection	-2.464	119	.015*
Pair 8	Pre bodies preserved - Post bodies preserved	2.789	119	.006*



Pair 9	Pre bodies disposed - Post bodies disposed	15.430	119	.000*
Pair 10	Pre Advantages of dissection - Post Advantages of dissection	-1.414	119	.160

**GRAPHS –**





