



Knowledge and Attitude of 2nd Year Medical Students Regarding Post Mortem Examination

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Abstract

Post mortem examination is a process which is required to establish the exact cause of death in sudden, suspicious or unnatural cases. It determines the mode, manner and time passed since death. There are aim and objectives of a postmortem examination. In India postmortem examination used to be conducted by graduate doctors. As per Competency Based Medical Education (CBME) curriculum for undergraduates provided by National Medical Commission-(NMC), autopsy is suggestive teaching learning method with autopsy is also a competency. The present systematic review was conducted to assess the knowledge and attitude of medical undergraduate students towards post-mortem as these traits will influence the quality of autopsy reports being prepared by them in their professional careers. It is very important that the emotions of the students have to be considered while training medical students but unfortunately it is bit neglected since the inception of medical curriculum. Study was carried out on second year undergraduate medical students. Questionnaires to be answered, were administered to the participating medical students in Google form. For compilation of data, tabulate formation prepared one by one. 162 undergraduate medical students took part in the study. The undergraduate medical students should be encouraged to observe more autopsies during their study course. Problem-based learning during practical training of autopsy must be incorporated, as a part of the medical curriculum and instead of elective, compulsory rotatory internship training should be there for Forensic Medicine.

Keywords: Knowledge, Attitude, Autopsy, CBME, NMC

Introduction

The word post mortem comes from “post” means “after”, “mortem” means “death”¹. It is also called “autopsy” which comes from the Greek words “Autos” means “self” and “opis” means “view” or “to see for oneself”. The other name of autopsy is necropsy. (“Necros” means “dead body”)^{1,2}. Post mortem is a special type of scientific examination of a dead body carried out under the law; in which all the body cavities are opened and all the organs are examined, because the evidence contributory to the cause of death may be found in more than one organ. It is usually performed in a case of sudden, suspicious, unnatural, medically unattended,

unexplained, litigious death. The objective of autopsy includes - identification of a dead body, estimation of the time past since death, identification of the manner and mode of death, interpretation of the significance and effect of injuries, determination of the presence of any disease, detection of poisons, even interpretation of the significance of medical or surgical treatments. Forensic medicine is a rare specialised branch that charms few medical graduates in India.³ Therefore, the burden of medico-legal work is on the shoulders of general medical practitioners. It is assumed that the autopsies will be demonstrated to them in their graduation course. However, many

medical students graduate without seeing an autopsy.⁴ This study was undertaken to know the knowledge of the future doctors, that is the undergraduate medical students, about the medico-legal autopsy and to ascertain the change in their attitude and perception for autopsy, if any, after passing the Forensic Medicine subject as per their medical curriculum.

Material and Methods

This study was carried out on 2nd year undergraduate medical students of a Government Medical College of Rajasthan. 2nd year undergraduate medical students were included in this study.

The objectives of the study were explained to them in detail. Google form based informed consent was taken before proceeding further. A questionnaire adapted to the study requirements from the published research was designed with some additional question set by the author to know the knowledge, attitude and perception of medical students toward autopsy.^{5,6} Questionnaires were administered to the participating medical students in google form. Students were asked to fill their responses in google form and were instructed to submit in 20 minutes of time provided during a lecture after obtaining the consent.

The data obtained from the answer sheet was evaluated and incorporated on Microsoft Excel sheet and descriptive analysis in terms of mean, standard deviation and the percentage was carried out. SPSS (Statistical Package for the Social Sciences) statistical software, version 24 (IBM Chicago) was used for comparing the mean among three groups using ANOVA test.

Observation & Result:

A total of 162 undergraduate medical students were the part of the study. Out of the 162 students 75.3% students replied that in all unnatural cases postmortem is required, the others aid that it is not essential to conduct a postmortem examination in all unnatural cases. (Table no.1). out of all students 147 students replied yes in reply of question Type of post mortem examination include medico legal and clinical 5 students said no and 4 students said directly that don't know about the types. (Table no. 2) Virtual autopsy is a new form of post mortem examination it was the third question in reply of this question 143 said yes and 6 replied that it is not the new form of

pm examination. 12 students did not anything about the virtual autopsy (Table no 3) whether we have to collect viscera in each and every case during pm it was the next question, 109 students replied that each and every case there is no need to collect the viscera, may be the answer given by 20 students and 29 students said yes for the viscera preservation in each and every question (Table no 4). 109 students replied that stomach, liver spleen and kidney preserved for the chemical analysis question was asked For Chemical analysis which organs are preserved, 45 students replied that stomach, liver and kidney preserved, in this question maximum variability observed (Table no 5). Next question was where sample for Chemical analysis should sent, 97 students give correct answer that was FSL and 51 students said that both FSL and pathology dept we can send the sample, 14 students replied that sample for chemical analysis use to send at dept of pathology. Question no 7 was that what sample collected for histopathology, most of the students replied that depends upon the disease and observation sample for histopathology used to be collected answer was given by 95.1 % students. Question no 8 was that whether they know which preservatives are used for collection of viscera samples and 119 students replied that it is saturated salt solution, 39 students replied formalin 5 students said it is salt water, next question no 9 is why we conduct postmortem, in this question other than option we provide open answer but most of the students, 158 said to find out the cause of death and next reply was given by 6 students that is for identification postmortem is conducted, next question no 10 is Do you think post mortem examination is harassment to victim's family and 93.8% students said no, rest said yes. Do you think autopsy is disrespect to a dead body was the question no 11, and 141 said big NO. Question no 12 was From where did you First know about autopsy, 46.7 % students heard about it from TV, newspaper, 20 % students heard about autopsy from our teaching and next 18.2% students heard it from the web series. Question no 13 was Do you think students should watch post mortem examination as their part of course curriculum 158 said yes, remanning said no. Question no 14 was regarding autopsy chapter required to be discussed in details in the under graduate Forensic Medicine course, 159 said yes and 5 said no. question no 15

was Do you wish to have autopsy of your relative if necessary, and we got same reply yes from 159 students. Next question no 16 was, have you watched any autopsy before your admission to medical college and most of the student did not see any autopsy before second year of MBBS, 144 said no and rest said yes. Question no 17 was that do you think there is disfigurement of the dead body by autopsy 58 said yes and 76 said no, 26 said may be the autopsy is disfigurement dead body, do you think post mortem is required in a putrefied body or mutilated body, it was the next question in which 125 said yes reply and 26 said no and rest 13 said may be. Last question which was asked to students that How the body is preserved after post mortem student replied that 26.1% said body preserved in cold room and it preserved in ice bar said by 6.1%, embalming is the preservation method which was answered by the most of the students which is 65.5% and 2.4% said that they don't know about it.

Discussion:

The autopsy is the heart of Forensic Medicine which is customarily taught to the medical undergraduate. As per the new changes provided by the National Medical Commission, now Forensic Medicine is taught from II MBBS to III MBBS (Part I), in which postmortem topic is very important. As per NMC undergraduate regulation a medical student should witness medicolegal autopsies in the both years. It is important to know that they can describe the medicolegal aspects and findings of autopsy examination in case of death due to common unnatural condition poisoning, so as to observe and interpret various findings at postmortem examination. The current study was undertaken in the Department of Forensic Medicine of a Government Medical College of a north-western state of India, where the second year medical students voluntarily completed a questionnaire. Second-year students were those who had been taught the chapter of a medico-legal autopsy but still doesn't look out a postmortem examination. Therefore, the objective of whether practical demonstration only able to increase the knowledge of postmortem or we need more new methods.

In this study 122(75.3%) students gave positive answer about the requirement of autopsy in unnatural death cases. Most of the students, 158 (96.9%)

answered that observation of post examination should be part of MBBS course curriculum and all gave positive response about utility of this chapter in their course studies. This result coincides with previous study done by Verma SK⁸ where students opted for compulsory attendance of post mortem examination as a part of undergraduate teaching. The previous study by Botega et al⁹ Brazil and Conran¹⁰ et al in Ohio, USA also showed that more than 85% students gave opinion in favour of mandatory autopsy observation. Joon Joon¹¹ in the study at Malaysia also showed that 77.5% students recommended for making autopsy session compulsory during undergraduate medical training. Victor James¹² in his study also showed that 88% students recommended for post mortem observation during their study period. Although the use of autopsy as an educational tool is in decline and there is evidence that many undergraduates and junior doctors it is shocking that many postgraduates have never attended an autopsy¹³. Result of same seen Hitesh Chawla et al where first year second year and third year undergraduates included for same question²². It is due to that knowledge of same question is updated to them while introduction to the medical subjects. But at the same time, the medical student's emotional reactions must be borne in mind. A bad memory during post mortem observation can affect them in future. Unfortunately this aspect is neglected in medical training. Literature reviewed had showed that the reaction of students to forensic autopsy procedure encompass psychological and emotional components¹⁴. In undergraduate course curriculum the training of post mortem examination on dead bodies might evoke strong emotional reactions in students that could counter act the intended learning goals¹⁵. In China medico legal autopsy has been squeezed out of the regular medical education curricula in order to accommodate increasing amount of modern medicine education during teaching technique reform¹⁶. Most of the students, 97 (59.5%) had right idea about the place for chemical analysis. Also 119 students rightly know about the preservative of viscera samples, some of them confused with formalin and saturated salt solution. In India most of the peoples don't know about the FSL, this laboratory is out of public view and an isolated/restricted establishment. Since pathology department is well approached by students for all required tests and can be found in all medical

colleges or hospitals, they had a misconception about the chemical analysis of viscera at this department. During 1st and 2nd year MBBS course, the students always see formalin is used to preserve viscera; this practical exposure gave them idea about formalin as preservative in mortuary. For practical purpose saturated common salt solution is used there, because it is cheap, easily available and a very good preservative. On the other hand, formalin is expensive and causes tissue hardening which is not suitable for poison detection procedure.

Post mortem is neither harassment to victim's relative answered by the 93.8% nor a disrespect to a dead body, 86.5% answered, this coincides with study done by Sanner in Sweden¹⁷ where 90% students gave positive opinion and also reflects the positive attitude of medical students towards the necessity of autopsy. Only 10(6.2%) students opted that post mortem examination is harassment to the relatives of the deceased and is disrespect to a dead body which coincides with the study done by Joon Joon¹¹.but study conducted by Hitesh Chawla et al observed that most of the students replied that they cant say about disrespect and disfigurement which is unanswerable²². Newly invented virtual autopsy procedure, which was developed by Richard Dirnhofer, former Director of Forensic Medicine, Berne and continued by his successor, Michel Thali and colleagues at the University of Berne's Institute of Forensic Medicine, Switzerland¹⁸⁻²⁰ is known to majority 67(58.26%) of the respondents. Probably a review article on Virtual autopsy²¹ written by this author played a positive role in this regards, which also indicates medical students of this college pass a lot of time reading articles and journals in college library. In our study 143 students know about the virtual autopsy, which is differ from the study conducted by Ahmad M et al²¹.

Conclusion:

Education is the only mean to elaborate one's knowledge and it can bring the change in perception and attitude of a learner. The data of present study supports the previous studies conducted with a quantitative methodology and recommend that forensic autopsy has great value. The undergraduates medical students should be encouraged to observe more autopsies during their study course. Teaching professionals should give more emphasis to make this

chapter more interesting to the medical students. At the same time the infrastructure for morgue in medical colleges needed to be improvised and modernized. Virtual autopsy, the new technology of forensic investigation, has already been started in our country on project basis with provision to include this chapter in medical teaching curriculum. Updating the education is the only mean to elaborate one's knowledge and it can bring the change in perception and attitude of a person. More observation of autopsy, interesting teaching will help them to change their perception and give a better way if required in future, when they complete the graduation and posted in Government hospitals. It is suggested that problem-based learning during practical training of autopsy must be incorporated, as a part of the medical curriculum and instead of an elective, a compulsory rotatory internship should be there for Forensic Medicine. Further, to curb the deficiency of Forensic Medicine specialists, measures should be taken at the state level to make this branch a lucrative one, so that more medical aspirants opt this speciality for their post-graduation course.

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Table no 1

Question no 1: Post mortem examination is required in all unnatural death cases –

Total	Yes	No
162	75.3% [122]	40.7%[40]

Table no 2

Question no 2: Type of post mortem examination include medico legal and clinical

Total	No	Don't know	Autopsy	Also includes pathological autopsy 3 types 1. Medicolegal 2. Clinical 3. Pathological	Nothing two types but yes these are types	Medicolegal autopsy	Yes
162	5[3.1%]	4[2.5]	2[1.2]	1[.6]	1[.6]	1[.6]	147[90.7]

Table no 3

Question no 3: Virtual autopsy is a new form of post mortem examination

Total	Yes	No	Don't know	By radiological Ct scan or other method
62	143 [88.3%]	6[3.7%]	12 [7.4%]	1[0.6%]

Table no : 4

Question no 4: whether we have to collect viscera in each and every cases during pm

Total	Yes	No	Don't know	In poison	In case of poison	May be	Only in poison
163	29[17.8%]	109[66.9%]	2[1.2%]	1[.6%]	1[.6%]	20[12.3%]	1[.6%]

Table no 5

Question no 5: For Chemical analysis which organs are preserved

STOMACH, LIVER,KIDNEY	45[27.3%]
STOMACH, LIVER , KIDNEY ,SPLEEN	109[66.1%]
ONLY STOMACH	3[1.8%]
ONLY LIVER	1[.6%]
ONLY INTESTINE	1[.6%]
EXACT NOT KNOWN	2[1.2%]

STOMACH, LIVER, KIDNEY, SPLEEN, INTESTINE	1[.6%]
LIVER AND KIDNEY[SOLID] IN ONE BOTTLE AND STOMACH, INTESTINE [HOLLOW] IN OTHER BOTTLE ARE PRESERVED	1[.6%]
STOMACH, LIVER, KIDNEY, INTESTINE	1[.6%]
ONLY KIDNEY	1[.6%]
TOTAL	165

Table no: 6

Question no 6: For Chemical analysis where the specimen are sent

TOTAL	PATHOLOGY	FSL	BOTH	DON'T KNOW	PATHOLOGY or FSL
163	14[8.6%]	97[59.5%]	51[31.3%]		1[.6%]

Table no: 7

Question no 7 For histopathological analysis which organ is collected

TOTAL	ONLY HEART	ONLY KIDNEY	ONLY SPLEEN	ONLY LIVER	DEPEND ON DISEASE AND OBSERVATION	NOT KNOWN
163	-	-	1[.6%]	7[4.3%]	155[95.1%]	-

Table no 8

Question no 8: Do you know which preservatives are used for collection of viscera samples

TOTAL	FORMALIN	ALCOHAL	SALT WATER	SATURATED SALT SOLUTIONS	DON'T KNOW
165	39[23.6%]	2[1.2%]	5[3%]	119[72.1%]	-

Table no 9

Question no: 9 why we conduct pm

TOTAL	DETECTION OF CAUSE OF DEATH	ONLY FORMALITY AS POLICE NEED IT	FOR IDENTIFY AND ARREST THE CULPRIT	DON'T KNOW
165	158[95.8%]	1[.6%]	6[3.6%]	-

Table no 10

Question no 10- Do you think post mortem examination is harassment to victim's family

TOTAL	YES	NO
162	10[6.2%]	152[93.8%]

Table no 11

Question no 11- Do you think autopsy is disrespect to a dead body

TOTAL	YES	NO	MAY BE
163	8[4.9%]	141[86.5%]	14[8.6%]

Table no 12

Question no 12 From where did you First know about autopsy

TOTAL	TV, NEWS PAPER	WEB SERIES	INTERNET	BOOK	TEACHING AT MEDICAL COLLEGE
165	77[46.7%]	30[18.2%]	19[11.5%]	6[3.6%]	33[20%]

Table no 13

Question no 13- Do you think students should watch post mortem examination as their part of course curriculum

TOTAL	YES	NO	DON'T KNOW
163	158[96.9%]	3[1.8%]	2[1.2%]

Table no 14

Question no14- Is the autopsy chapter required to be discussed in details in the under graduate Forensic Medicine course

TOTAL	YES	NO	DON'T KNOW
165	159[96.4%]	5[3%]	1[.6%]

Table no 15

Question 15- Do you wish to have autopsy of your relative if necessary

TOTAL	YES	NO	DON'T KNOW
165	159[96.4%]	5[3%]	1[.6%]

Table no 16-

Question no.16- Have you watched any autopsy before your admission to medical college

TOTAL	YES	NO
165	21[12.7%]	144[87.3%]

Table no 17

Question no.17- Do you think there is disfigurement of the dead body by autopsy

TOTAL	YES	NO	MAY BE
160	58[36.3%]	76[47.5%]	26[16.2%]

Table no 18

Question no18- Do you think post mortem is required in a putrefied body or mutilated body

TOTAL	YES	NO	MAY BE
164	125[76.2%]	26[15.9%]	13[7.9%]

Table no 19

Question no 19: How the body is preserved after post mortem

TOTAL	COLD ROOM	ICE BAR	EMBALMING	DON'T KNOW
165	43[26.1%]	10[6.1%]	108[65.5%]	4[2.4%]