

July - December 2022

Volume 31

Issue 2

PRINT ISSN: 2277-1867

ONLINE ISSN: 2277-8853



JOURNAL OF FORENSIC MEDICINE SCIENCE AND LAW

Official Publication of Medicolegal Association of Maharashtra

Editor-in-chief

Dr Ravindra Deokar

Associate Editors

Dr Sadanand Bhise

Dr Sachin Patil

**MULTISPECIALITY, MULTIDISCIPLINARY, NATIONAL
PEER REVIEWED, OPEN ACCESS, MLAM (SOCIETY) JOURNAL
Indexed with Scopus (Elsevier) & Index Copernicus (Poland)**

Editorial Office Address

Department of Forensic Medicine & Toxicology, Third Floor, Library Building, Seth G S Medical College & KEM Hospital, Parel, Mumbai, Maharashtra, India. Pin-400 012. Email id: mlameditor@gmail.com Phone: 022-24107620 Mobile No. +91-9423016325.



JOURNAL OF FORENSIC MEDICINE SCIENCE AND LAW

(Official Publication of Medicolegal Association of Maharashtra)

Email id: mlameditor@gmail.com

PRINT ISSN:

2277-1867

ONLINE ISSN:

2277-8853

Original Research Article

Knowledge, Attitude & Perception of 2nd year Medical students about Medicolegal Autopsy.

SV Dhoble^a, SS Dhoble^{b*}, BW Ramteke^c, SG Dhawane^d, NK Tumram^e

^aAssistant Professor, ^cMedical Officer, ^eProfessor, Department of Forensic Medicine, Government Medical College & Hospital; ^bAssistant Professor, Community Medicine, Ramnagar, Chandrapur, Maharashtra, India. ^dProfessor, Department of Forensic Medicine, Government Medical College, Nagpur, Maharashtra, India.

Article Info

Received on: 30.06.2022
Accepted on: 10.11.2022

Key words

Students,
Forensic medicine,
Post-test,
Medico legal autopsy.

Abstract

Background: Autopsy is an important procedure & search tool for not only to reach the cause & manner of death but also to find out identify of deceased and to catch criminal by collecting biological evidence at Post mortem examination. **Material & Methods:** The present study is Knowledge, Attitude & Perception (KAP) Study. The study was conducted in Department of Forensic Medicine of tertiary care institution. **Results:** Most of the students (48%-55%) knew that Inquest from investigating officer is must For Medicolegal autopsy. Most of the participants knew that PM examination on deceased body is duty of Registered Medical Practitioner. Students opined that Tissues for Histopathological Analysis are most commonly preserved in 10% Formalin. Majority of students (53%-55%) strongly agreed that Observation & demonstration of medico legal Autopsy in 2nd MBBS. While more of the students (54%-56%) agreed that More exposure to PM examination/ Medicolegal autopsy is required to handle Medicolegal question in future of Indian medical graduate. Students strongly agreed that Medicolegal autopsy plays an important role in administration of justice by providing significant information about death of deceased in Court of Law. **Conclusions:** Concept of students should be thoroughly clear to avoid repetition of same mistakes. Medical students should be encouraged and facilitated to watch more autopsies and their practical training of autopsies should be more effective to serve the purpose.

1. Introduction

Autopsy is an important research instrument to establish cause of death. In India, according to the curriculum of the Medical Council of India, a medical student should witness medico legal autopsies in the second year of Bachelor of Medicine & Bachelor of Surgery (MBBS). The aim of this study is to investigate the general attitude of

medical students of 2nd, years MBBS towards medico-legal autopsy.¹

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.²

How to cite this article: Dhoble SV, Dhoble SS, Ramteke BW, Dhawane SG, Tumram NK. Knowledge, Attitude & Perception of 2nd year Medical students about Medicolegal Autopsy. J For Med Sci Law 2022;31(2):50-55.

*Corresponding author Dr S S Dhoble, Assistant Professor, Department of Community Medicine, Government Medical College & Hospital, Ramnagar, Chandrapur, Maharashtra, India. Email id: shitalpsm@gmail.com

In India, according to the curriculum of the Medical Council of India, a medical student should witness a minimum number of medico legal autopsies in the second year so that they can observe and interpret various findings.³ Students are exposed to Autopsy Practice, the aim of which is to acquaint the students with the morphological changes of organs and tissues in diseases, to expose the students to forensic pathology and to equip the students with the knowledge of the importance of autopsy in research and auditing.⁴ The value of autopsy has been proven in its elucidation of the cause of death, clinical quality control, medical auditing and in medical education.^{5,6} Though medico legal autopsy is mandatory in most of the setup, the relatives of the deceased may have negative attitude towards autopsy.⁷ It is worth noting that, before the autopsy in cases of death by natural causes, verbal acquiescence from the family or person responsible is not enough. Thus, after the detail and careful reading of the text explaining how the procedure is performed, it is essential to formalize acquiescence through the signing of an informed consent term.⁸

Autopsy is important tool to find out the cause of death. Many of medical student before gaining medical knowledge they acquire information from surrounding or media as knowledge about post mortem examination. That should be upgraded through correct medical education so that every medical student should teach & upgrade people in society about importance of Autopsy or Post mortem examination.

Aim And Objectives:

Aim: To explore the knowledge, attitude & Perception of 2nd year medical students regarding post mortem examination at the very beginning of their Para clinical course study.

Objectives:

1. To assess the knowledge, attitude & perception regarding medicolegal autopsy in medical students.
2. To analyze the up gradation of knowledge of students in 2nd year regarding medicolegal autopsy.
3. To access the interest in medical students about medicolegal autopsy as part of undergraduate curriculum.
4. To access quality of medical education provided to student so as to improve in medical education teaching techniques.

2. Methods

The present study is Knowledge, Attitude & Perception (KAP) Study. The study was conducted in Department of Forensic Medicine of tertiary care institution. Medical students who had just entered to Second year of MBBS, & who gave consent to participate in project had been included in study. There was total 100 medical students who entered in 2nd year MBBS course, student who were willing to participate in study and after the approval of Institutional Ethics Committee (IEC) study had been started. Multiple choice questions type questionnaire was prepared in accordance with the study objective. Before administering questionnaire to the study participants, Authors explained study procedure to Participants in terms of:

- a. They would be questioned twice during the study, first as Pretest before teaching topic relating to Autopsy and second as Posttest would be after completion of same topic.
- b. Basic knowledge, attitude & perceptions about Post mortem examination would be noted.
- c. If anyone wants to withdraw from study, they could withdraw.
- d. The collected data would be used only for study purpose and would be confidential.

Multiple choice questions type questionnaire administered to the study participants and the obtained data tabulated in Microsoft excel. Teaching session including theory and practical classes on Autopsy had been conducted as per University Syllabus. After the teaching sessions, post-test be conducted immediately containing the same questionnaire and the data collected. Data entered using Microsoft Excel 2010 Software. All the response tabulated and Graphical representation made wherever necessary. Data analyzed by using Statistical Package for the Social Sciences (SPSS) Software version 17.0. Statistical tool used as percentage and non-parametric test.

3. Results

Age and sex wise distribution of subject participated amongst medical students as mentioned in **Table 1** observed that most common age group as 20 yrs (43%) nearly equal in gender followed by 19 yrs (31%) of age. Most of them are males (55%) followed by female (45%). **Table 2** shows that Most of student considered that Medicolegal Autopsy (PM examination) is necessary for deaths where cause of death is unknown in Pre (71%) & Posttest (72%). Most

Table 1: Age & sex Wise distribution of Participants (Number Denote percentage as N=100).

S. No.	Age	Sex		Total
		Male	Female	
1	18 yr	0	2	4
2	19 yr	15	16	31
3	20 yr	22	21	43
4	21 yr	12	6	18
5	22 yr	4	0	4
Total		55	45	100

of the students (48%) in pretest knew that Inquest from investigating officer is must For Medicolegal autopsy, which increased in posttest (55%) after teaching of Autopsy Topics. Most of the participants knew that PM examination on deceased body is duty of Registered Medical Practitioner (Indian medical graduate) (91%) in pre posttest (92%). In pretest Students answered that Dead body preserved in at temperature -5°C (66%) while in posttest only half (50%) of subjects answered same. Majority of students (98% in Pretest & 94 % in posttest) knew

that During Post mortem examination both external & Internal examination is must. About (79%) of participant opined in pretest that Tissues for Toxicological Analysis are most commonly preserved in 10% Formalin while in posttest only (63%) participant opined same. Only half (49%) of participants opined in pretest that Tissues for Histopathological Analysis are most commonly preserved in 10% Formalin while in posttest it increased up to 2/3rd (75%) participants opined same.

Most common student (37%) suggested that PM examination is done by / conducted by A doctor with Doctor of Medicine (MD) in Forensic Medicine only in pretest while in Posttest same answer of the question was given by a greater number of medical students (48%). In both pre & Posttest, the Main reason for Post mortem Examination is answered to find out the cause of death (92%) & about half of the students came to know about Post mortem examination (Autopsy) from TV & Media in majority of the cases (53-52%).

Table 2: Knowledge, Attitude & Perception of Medical Students about Autopsy (Number Denote percentage as N=100).

Que. no.	Questions	Most Common Answer by Students-Pre test		Most Common Answer by Students-Post test	
		option	%	option	%
1	Medicolegal Autopsy (PM examination) is necessary for	(b) Deaths where cause of death is unknown	71	b	72
2	For Medicolegal autopsy, following is must	(b) Inquest from investigating officer	48	b	55
3	PM examination on deceased body is duty of	(a) Registered Medical Practitioner(Indian medical graduate)	91	a	90
4	Dead body preserved in at temperature	(a) -5°C	66	a	50
5	During PM examination	(c) Both external & internal examination is must	98	c	94
6	Tissues for Toxicological Analysis are most commonly preserved in	(b) 10% Formalin	79	b	63
7	Tissues for Histopathological Analysis are most commonly preserved in	(b) 10% Formalin	49	b	75
8	PM examination is done by / conducted by	(b) A doctor with MD in Forensic Medicine only	37	b	48
9	The Main reason for Post mortem Examination is	(a) To find out the cause of death	92	a	92
10	From where did you know about Post mortem examination (Autopsy)	(a) TV & Movies	53	a	52

Table 3: Knowledge, Attitude & Perception of Medical Students with Agree , Disagree with Medicolegal Questions (Number Denote percentage as N=100).

Que. No.	Answers- Pretest					Answers- Post test				
	(a) Strongly agree	(b) Agree	(c) Not sure	(d) Dis-agree	(e) Strongly disagree	(a) Strongly agree	(b) Agree	(c) Not sure	(d) Dis-agree	(e) Strongly disagree
11	53	41	5	1	0	55	40	5	0	0
12	36	54	6	3	1	31	56	10	3	0

13	55	42	2	0	1	64	35	1	0	0
14	41	48	6	5	0	46	41	10	3	0
15	28	37	26	5	4	33	50	10	5	2
16	12	41	33	14	0	11	47	27	12	3
17	15	21	29	25	10	7	18	30	32	13
18	16	34	37	11	2	14	33	29	22	2
19	40	55	3	2	0	40	53	2	3	2
20	3	6	6	41	44	7	5	5	37	46

Questionnaire no. 11 to 20:

11. Observation & demonstration of medico legal Autopsy (PM examination) in 2nd MBBS is necessary for clearing medico legal issues & proper understanding of subject.
12. More exposure to PM examination/ Medicolegal autopsy is required to handle Medicolegal question in future of IMG(Indian medical graduate).
13. Medicolegal autopsy plays an important role in administration of justice by providing significant information about death of deceased in Court of Law
14. Actual Demonstration of Medicolegal autopsy provides an opportunity to the students to discuss with their teachers the Medicolegal issue related to autopsy
15. Advanced equipment during PM examination can reduce disfiguration of body.
16. It emits foul smelling due to PM examination
17. Organs can be donated before autopsy even if body is posted for PM examination.
18. Virtual autopsy should be done as much as possible in present era of technology.
19. Autopsy chapter required to be discussed in details in the under graduate Forensic Medicine course.
20. Study of post mortem examination & observation of Autopsy should be completely removed from the course medical curriculum.

Interpretation of **table 3** showed that Majority of students (53%-55%) strongly agreed that Observation & demonstration of medico legal Autopsy (PM examination) in 2nd MBBS is necessary for clearing medico legal issues & proper understanding of subject. While more of the students (54%-56%) agreed that More exposure to PM examination/ Medicolegal autopsy is required to handle Medicolegal question in future of IMG (Indian medical graduate). In pretest about (55%) students strongly agreed that Medicolegal autopsy plays an important role in administration of justice by providing significant information about death of deceased in Court of Law, which increased in posttest about (64%). Majority of students (48%) agreed in pretest for Actual Demonstration of Medicolegal

autopsy provides an opportunity to the students to discuss with their teachers the Medicolegal issue related to autopsy which changes to Strongly agreed (46%) in posttest.

Only one third (37 %) of the students in Pretest advised that Advanced equipment during PM examination can reduce disfiguration of body while half of the students (50%) IN Posttest. 41 % participant in pretest agreed that it emits foul smelling due to PM examination while in Posttest 47% participant agreed same. Majority of students (29%) Not sure in pretest about Organs can be donated before autopsy even if body is posted for PM examination, while most of students disagreed (32%) in posttest. More of students not sure (33%) that Virtual autopsy should be done as much as possible in present era of technology in pretest, while majority of students agreed (37%) for virtual autopsy. More than half of the students (55%) agreed in pretest that autopsy chapter required to be discussed in details in the under graduate Forensic Medicine course, while in posttest also more students (53%) agreed for same. About half of the students strongly disagreed that Study of post mortem examination & observation of Autopsy should be completely removed from the course medical curriculum in pretest (44%) & in Posttest (46%).

4. Discussion

Autopsies allow students to grasp pathology in clinical contexts. There are many factors that affects learning and they are beyond the control of educators, such as prior life experience, cultural or religious beliefs, and psychological predispositions.¹ In this study Majority of subjects were students of age 19- 20 yrs (74%) this is because the common group of students admitted in MBBS course belong to age group 17-21 yr. Most of them are males (55%). This finding coincides with studies of Ravi Rautji et al³ where participants belong to 17-20 yrs (81.3%). In study of Ekanem VJ et al⁴ most common age group is 21-25 yr (56.7%) and most of them were males

(55.8%). In study of Nuwadatta Subedi⁷ also most common (72.31%) were male participants. Our findings also compare favorably with the findings of Brieger WR⁹ in 1980 and Ekanem VJ et al⁴ in 2006.

In present study Most of students considered that Medicolegal Autopsy (PM examination) is necessary for deaths where cause of death is unknown, which coincides with study of Shamshuddin R. Kakkeri et al¹ & Ahmad M. et al² where most of the participants (78%), (76.52%) required autopsy to know cause of death respectively. In our study Most of the students (48%-55%) knew that Inquest from investigating officer is must For Medicolegal autopsy which is contradictory findings with study of Shamshuddin et al¹ where only few (1.7 %) subjects opined that inquest is must Before conducting medico-legal autopsy.

In our study Most of the participants knew that PM examination on deceased body is duty of Registered Medical Practitioner (Indian medical graduate) (91-92%) and many Students answered that dead body preserved in at temperature -5⁰ C (50%-66%). This suggests fruitful academic teaching and better intelligence of medical students because of new era of post graduate entrance exam-oriented students almost everywhere in medical colleges. Our study showed Majority of students (96%) knew that During Post mortem examination both external & internal examination is must which is similar findings in Shamshuddin¹ study where both internal & external examination is required in Medicolegal autopsy (83.4%).

In this study Participants opined that Tissues for Toxicological Analysis are most commonly preserved in 10% Formalin in pretest (79%) which reduced in posttest (63%) this is also similar findings in Shamshuddin¹ study where participants (93%) replied that Tissues for Toxicological Analysis are most commonly preserved in 10% Formalin. Similarly in our study Students opined that Tissues for Histopathological Analysis are most commonly preserved in 10% Formalin Only (49%) in pretest which increased (75%) in posttest. This may be due to correct teaching exposure to students who confused in pretest but corrected in posttest. While in study of Ahmed M² many participants (60.87%) answered that Formalin is preservative for collection of the Viscera samples. This study reflected that Most of the students suggested that PM examination is done by / conducted by a doctor with MD in Forensic Medicine

only while in study of Ravi Rautji³ many participants (21%) suggested that there should be More involvement of autopsy surgeon during autopsy.

The Main reason for Post mortem Examination is answered To find out the cause of death (92%) which is same consideration in study of Shamshuddin et al¹ where (78%) participants replied that Medico-legal postmortem examination is mandatory in all unnatural and sudden unexpected and suspicious death cases & same findings noted in study of Ahmad M et al² (76.52%) & in study of Nuwadatta Subedi et al⁷ (98.46%) & in present study about half of the students came to know about Post mortem examination (Autopsy) from Television (TV) & Media in majority of the cases (53-52%), this is contradictory findings with study of Ahmad M² where student knew about autopsy from Medical Curriculum books (35.65%). In our study Majority of students (53%-55%) strongly agreed that Observation & demonstration of medico legal Autopsy / Post Mortem (PM) examination in 2nd MBBS is necessary for clearing medico legal issues & proper understanding of subject. Similarly in study of Shamshuddin et al¹ students (87.8%) answered that Students should watch more postmortem Examination.

In present study many of the students (54%-56%) agreed that more exposure to PM examination/ Medicolegal autopsy is required to handle Medicolegal question in future of Indian Medical Graduate (IMG). Many of our Students strongly agreed that medicolegal autopsy plays an important role in administration of justice by providing significant information about death of deceased in Court of Law. There should be compulsory training sessions for dealing with medicolegal issues especially medicolegal autopsy.¹⁰ In study of Ekanem VJ et al⁴ most of participants, i.e., about 2/3rd students recommended that medical student should watch medicolegal autopsy (74%) and student should actively participated in performing Autopsy (76%). In this study Majority of students (48%) agreed for Actual Demonstration of Medicolegal autopsy provides an opportunity to the students to discuss with their teachers the Medicolegal issue related to autopsy. In our study the students advised that advanced equipment during PM examination can reduce disfigurement of body while half of the students (50%) In Posttest which was also same findings in study of Ravi Raoutji³ that participants

suggested Replacement of primitive instruments with modern ones in the autopsy room (74%). About half of students agreed that it emits foul smelling due to PM examination. Majority of students disagreed (32%) in posttest about Organs can be donated before autopsy even if body is posted for PM examination.

In present study students agreed (37%) in posttest that Virtual autopsy should be done as much as possible in present era of technology. Similarly in study of Shamshuddin et al¹ students (92.1%) preferred virtual autopsy while in study of Ahmad M² Most of students (58.26%) Knew that virtual autopsy is new form of Post mortem examination. More than half of the students agreed that autopsy chapter required to be discussed in details in the under graduate Forensic Medicine course. This finding coincides with study of Ahmad M² almost all participants (100%) told that autopsy chapter required to be discussed in details in the under graduate Forensic Medicine course. About half of the students strongly disagreed that Study of post mortem examination & observation of Autopsy should be completely removed from the course medical curriculum which is similar findings in study of Shamshuddin et al¹ that (80%) participants said No to Post Mortem examination should be scrapped from medical education and in study of Ahmad M² many participants (93%) told that autopsy should not be scrapped from medical education.

Limitations

More of participants are students from Government Medical College, and cannot be taken as consideration for whole population systemic sample method of all students in Maharashtra Medical Colleges which also have Private medical college & autonomous universities. Many of student prepared well before online classes because of Pandemic Covid-19 so there may be chance of error in answers given in Pre & Posttest by the participants.

5. Conclusions

Medical students came prepared for classes in medical education. Concept should be thoroughly clear to avoid repetition of same mistakes. Actual demonstration of autopsy procedure with its importance in medicolegal scenario is to be taken practically than online classes because of Pandemic

Covid-19. Medical students should be encouraged and facilitated to watch more autopsies and their practical training of autopsies should be more effective to serve the purpose.

List of Abbreviations:-

MBBS	: - Batchelor of Medicine & Bachelor of Surgery
MD	: - Doctor of Medicine
KAP	: - Knowledge, Attitude & Perception
IEC	: - Institutional Ethics Committee
SPSS	: - Statistical Package for the Social Sciences
TV	: - Television
PM	: - Post mortem
IMG	: - Indian Medical Graduate

Ethical Clearance: IEC approval is taken from the Institutional Ethical committee.

Contributor ship of Author: All authors equally contributed.

Conflict of interest: None to declare.

Source of funding: None to declare.

References:

1. Kakkeri SR, Ahmed KM, Ahmad SR, Khan R. Knowledge and attitude of medical students toward medico- Legal autopsy. *IP International Journal of Forensic Medicine and Toxicological Sciences*. 2018;3(1):8-11.
2. Ahmad M, Rahman MF, Rahman FN, Rahman MA. Knowledge and Attitude of 3rd Year Medical Students regarding Post Mortem Examination. *JAFMC Bangladesh*. 2016; 12(2): 9-14.
3. Rautji R, Kumar A, Behera C. Attitudes of Medical Students towards Medico-legal/Clinical Autopsy. *J Indian Acad. Forensic Med*.2013; 35(4): 358-61.
4. Ekanem VJ, Akhigbe KO. Attitudes of Nigerian Medical Students Towards Autopsy. *Turk J Med Sci*.2006;36: 51-6.
5. Teo CE. The autopsy. *Singapore Med J*. 1997; 38:71-5.
6. Diegbe IT, Idaewor PE, Igbokwe UO. Autopsy audit in a teaching hospital in Nigeria & the Benin experience. *West Afr J Med*.1998; 17:213-6.
7. Subedi N, Paudel IS, Kandel D, Chudal A. Knowledge and perception of public towards medical legal autopsy in Nepal. *Journal of Lumbini Medical College*. 2018;6(1):6-10.
8. Luiz Otávio Savassi Rocha. Autopsy and medical education. *Rev Med Minas Gerai*. 2014; 24(1): 103-110.
9. Brieger WR. Attitudes of Nigerian medical students towards rural practice. *Journal of med Edu*. 1980; 54: 427-29.
10. Deokar R B, Patil S S, Bhise S S, Medicolegal Cases in Hospitals. *J For Med Sci Law*. 2018;27(2):1-2.