

ORIGINAL ARTICLE

Knowledge and Attitude of MBBS Students Regarding Post Mortem Examination: A Cross-sectional Study in Chennai Region

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ABSTRACT

Background: An autopsy is a systematic examination of a dead body for medical, legal, or scientific purposes. A medicolegal autopsy is conducted to determine the cause, time, and manner of death, establish identity, and decide whether the death is natural or unnatural. In India, all unnatural deaths must undergo a medicolegal autopsy to ensure justice. For MBBS students, attending autopsy postings is essential for understanding real-life postmortem procedures and preparing them for future responsibilities as medical officers. However, many students hesitate to attend autopsies due to fear, misconceptions, or lack of exposure. This study aimed to assess students' knowledge, attitudes, and barriers related to medicolegal and clinical autopsies.

Objectives: The primary objective was to evaluate medical students' knowledge and attitudes toward postmortem examination and their interest in forensic medicine as a career. Secondary objectives included identifying associations with demographic factors (age, gender, prior exposure) and exploring misconceptions and barriers to attending autopsy postings.

Methods: A cross-sectional questionnaire-based study was conducted among Phase II to Phase IV MBBS students and interns at Chettinad Hospital and Research Institute, Chennai. A structured and validated questionnaire was administered to 205 participants. It assessed demographic details, knowledge, attitudes, practices, and perceptions regarding postmortem examination. Data were analysed descriptively.

Results: Most participants were Phase II students aged 19-20 years (mean age 19.6 years). Overall knowledge was satisfactory. About 87% knew that police

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or Magistrate requisition and an inquest report are required before medicolegal autopsy. Around 85% understood its purpose, and 93% knew partial autopsy is not allowed. Knowledge about organ preservation was limited (51.9%). Most students were aware of proper body storage (82.4%) and virtopsy (75.9%).

Regarding attitude, 69.9% supported compulsory autopsy exposure. While 78.5% were willing to handle a dead body, 60.7% were hesitant to appear in court. Interest in forensic medicine as a career was expressed by 65.4%.

Conclusion: Students showed good basic knowledge and a positive attitude, but practical skills and confidence, especially regarding court duties needs improvement through increased hands-on training and mock court sessions.

KEYWORDS

• Medical students • Medical education and Forensic medicine • Medico-legal autopsy

INTRODUCTION

Autopsy, [syn; necropsy, post mortem examination, sectio cadaveris, thanatopsy] refers to a systematic examination of the human body after death for medical and legal purposes.¹ Medico-legal autopsy refers to a systematic examination of a deceased individual conducted under the authority of legal agencies to investigate deaths that are sudden, suspicious, unnatural, or of medico-legal importance. The responsibility for authorising such examinations varies across countries and may involve coroners, medical examiners, magistrates, or law enforcement authorities.¹⁴

Postmortem examination remains a fundamental aspect of forensic practice, as it helps in establishing key details related to death, including its cause, manner, and approximate time since death. In addition to its legal relevance, it contributes meaningfully to medical education and supports public health by offering important epidemiological insights.

Although its role is significant, many medical students experience hesitation or discomfort when exposed to postmortem examinations. This response may arise from emotional sensitivity, apprehension about legal responsibilities, or limited practical exposure during their training. Such factors can shape their perceptions and may influence their willingness to participate in medico-legal duties in their future careers.

Exploring the knowledge, attitudes, and practices of medical students regarding postmortem examination is therefore important.

Gaining this understanding can help identify gaps in current training approaches and guide improvements in educational strategies, with the aim of fostering a more informed and confident outlook toward forensic medicine.

The present study seeks to assess the knowledge and attitudes of medical students toward postmortem examination and to evaluate their interest in forensic medicine as a career option. Evidence from previous research by Sreenivasan M indicates that a sound understanding of medico-legal principles is essential for medical graduates, as it directly supports their effectiveness in both clinical practice and legal responsibilities.⁹

OBJECTIVES

Primary Objective

- To assess the level of awareness and attitude regarding postmortem examination among undergraduate medical students.

Secondary Objectives

- To study the association between demographic factors such as age, gender, and prior exposure.
- To identify misconceptions and perceived barriers towards attending or participating in PM examinations.

MATERIALS AND METHODS

The present study was a descriptive cross-sectional questionnaire-based study conducted in the Department of Forensic Medicine and

Toxicology at Chettinad Health and Research Institute, Kelambakkam, Chennai. This study includes undergraduate MBBS students from Phase II, Phase III, Phase IV, and interns.

The total number of undergraduate students in the institution was approximately 1,000. Based on this population, the minimum required sample size was calculated to be 200, using a 95% confidence level and a 5% margin of error. Finally, 205 students participated in the study. A structured questionnaire was used for data collection. The questionnaire was adapted from earlier studies conducted by Patil A³, Bagga IS⁴, D. Ali⁵, Shamshuddin R⁶, and Ahmad M⁸.

The questionnaire consisted of four sections:

- Demographic details
- Knowledge about postmortem examination
- Attitudes toward attending autopsies

- Practices and willingness to choose forensic medicine as a career option

Data were collected over four weeks.

Questionnaires were administered either in person or digitally after obtaining informed consent. All responses were anonymous, and each participant completed the questionnaire within 10 to 15 minutes.

The collected Data were analysed using descriptive statistics such as frequencies and percentages with SPSS.

Inclusion Criteria

- MBBS students from Phase II to Phase IV and interns
- Students who provided written informed consent
- Students present during the data collection period

Exclusion Criteria: Students who are unwilling to participate

RESULTS

Table 1: Age and gender-wise Distribution of Participants (N = 205)

Age (years)	Female		Male		Total	
	N	%	N	%	N	%
18	0	0.0	5	2.7	5	2.7
19	15	7.3	107	54.6	112	54.6
20	31	15.1	35	17.1	66	32.1
21	1	0.5	12	5.9	13	6.3
22	2	1.0	3	1.5	5	2.4
23	1	0.5	3	1.5	4	1.9

A total of 205 participants were included in this study. The majority of participants belonged to the 19-year age group (54.6%, n=112), followed by 20 years (32.1%, n=66). Smaller proportions were observed in the age groups of 21 years (6.3%, n=13), 18 years (2.7%, n=5), 22 years (2.4%, n=5), and 23 years (1.9%, n=4). Gender-wise distribution

showed a predominance of male participants, particularly in the 19-year age group (n=107), whereas females were comparatively fewer across all age groups, with the highest number seen in the 20-year group (n=31). Overall, the study population was largely composed of younger medical students aged 19-20 years, with a male preponderance.

Table 2: Knowledge-Based Questions on Postmortem Examination

Q. No.	Question	Options Provided	Response	Purpose
Q1	A medicolegal autopsy can be conducted only after:	Consent from relatives/ Permission from the police or magistrate/ Permission from the hospital Superintendent/ Consent from the attending doctor	(125)61.2%-Permission from the police or magistrate (70)34.3%-Consent from relatives (8)3.7%-Permission from the hospital Superintendent (2)0.8%-Consent from the attending doctor	To assess students' basic knowledge regarding the legal authority required to conduct a medicolegal autopsy

Q. No.	Question	Options Provided	Response	Purpose
Q2	What constitutes the minimum mandatory documentation required before commencing a post-mortem examination?	Police requisition + Inquest report/ Only the death certificate/ Only hospital case sheet/ None	(178)87%-Police requisition + Inquest report (19)9.3%-Only the death certificate (8)3.7%-Only hospital case sheet	To evaluate knowledge of essential legal documents required before post-mortem examination
Q3	What is the purpose of a medicolegal autopsy?	To know the cause of death /To know the time since death/ To find out the postmortem interval / All of the above	(175)85%-All of the above (23)11.6%-To know the cause of death (4)1.9%-To know the time since death (3)1.5%-To find out the postmortem interval	To assess understanding of the objectives of a medicolegal autopsy
Q4	Who can order a medicolegal autopsy in India?	Police/Executive magistrate / Relatives of the deceased/Hospital superintendent/ Treating physician.	(186)90.7%-Police/ Executive magistrate (12)5.6%-Treating physician (6)2.8%-Relatives of the deceased (1)0.9%-Hospital superintendent	To assess awareness about authorized officials who can order a medicolegal autopsy
Q5	Can we do a partial autopsy by just opening 1/2 of the body cavities?	Yes/no	No-93%(191) Yes -7%(9)	To assess knowledge regarding the procedural completeness of medicolegal autopsy
Q6	Are you aware of Virtopsy?	Yes/no	(156)75.9%-yes (49)24.1%-no	To assess awareness of modern post-mortem techniques
Q7	Following an autopsy, which preservative is used to preserve organs and tissues for histopathological examination?	Formalin/Alcohol/ Rectified Spirit / Saturated Salt Solutions/Don't Know	Formalin-51.9%(107) Saturated Salt Solutions-33.3%(68) Rectified Spirit-9.3%(19) Alcohol-3.7%(11)	To assess knowledge regarding the preservation of organs and tissues after autopsy
Q8	Should the body be stored at 2-4 °C to delay decomposition before autopsy?	Yes /no/don't know	(170)82.4%-yes (29)13.9%-no (6)3.9%-don't know	To evaluate knowledge about the proper storage of bodies prior to autopsy
Q9.	Do you think postmortem examination is just to harass the relatives and to delay the handing over of the dead body to relatives?	Yes/no/don't know	(188)91.6%-no (14)6.8%-yes (3)1.6%-don't know	To assess students' perceptions and misconceptions about post-mortem examination
Q10	Is it necessary to conduct a postmortem examination on a putrefied or a mummified body?	Yes/no/don't know	Yes-76.4%(157) No -17.9%(37) Don't know -5.7%(11)	To assess the understanding of the importance of post-mortem examination in decomposed bodies

The majority of participants demonstrated good knowledge regarding medicolegal autopsy. A good proportion (61.2%) identified that an autopsy requires permission from the police or a magistrate. About 87% of the participants were aware of the mandatory documentation, the purpose of autopsy (85%), and authorised officials (90.7%). A large proportion (93%) correctly rejected the concept of partial autopsy, and 75.9% were aware of virtopsy. Knowledge regarding

body storage at 2-4°C (82.4%) and the need for autopsy in decomposed bodies (76.4%) was also satisfactory.

However, only 51.9% correctly identified formalin as the preservative used for the preservation of specimens for histopathological examination; this is mainly due to a lack of practical exposure. About 91.6% of participants demonstrated a positive attitude by disagreeing with the misconception that postmortem examination harasses relatives.

Table 3: Attitude of Students Toward *Postmortem Examination*

Q. No.	Question	Options Provided	Responses	Purpose
Q1	Performing/observing autopsies should be compulsory for UG students.	Yes/no	(143)69.9%-yes (62)31.1%-no	To understand students' attitudes toward autopsy exposure during undergraduate medical training.
Q2	I don't want to go to court for any evidence.	Yes/no	(124)60.7%-yes (81)30.3%-no	To understand how students feel about their medico-legal duties, especially when appearing in court cases to give evidence.
Q3	I would like to choose Forensic Medicine and Toxicology as my career option	Yes/no	(134)65.4%-yes (71)34.6%-no	To assess their interest in Forensic medicine as a career option.

In this study, **(143) 69.9% of students supported making autopsy exposure compulsory** during undergraduate training. This shows that students recognize the importance of attending autopsies in learning medico-legal and pathological aspects. However, **60.7% of students were hesitant to appear in court to give evidence**, indicating fear and lack of confidence in legal procedures, as reported in earlier studies. This hesitation is likely due to limited exposure to court proceedings and fear of cross-examination.

Encouragingly, 65.4% of students expressed interest in choosing Forensic Medicine and Toxicology as a career, reflecting a growing acceptance of the speciality. Such interest can be further strengthened through structured legal orientation and enhanced practical exposure, including increased opportunities for mock courtroom sessions, which may improve students' confidence in handling medico-legal responsibilities.

Table 4: Practice-based questions on postmortem examination

Q. No.	Question	Options Provided	Responses	Purpose
Q1	Are you willing to touch and dissect a body if you get a chance?	Yes/no	(161)78.5%-yes (44)21.5%-no	To understand their willingness to actively participate in autopsy or dissection procedures.
Q2	Have you ever explained the purpose of an autopsy to a patient's family?	Yes/no	(154)75%-yes (51)25%-no	To know how comfortable and confident students are when talking to grieving family members.

In the present study, **78.5% of students were willing to touch and dissect a dead body**, showing a positive attitude towards active participation in autopsy procedures. Such willingness is important for building practical skills and confidence in forensic medicine.

In addition, **75% of students reported that they had explained the purpose of the autopsy to the deceased's relatives**, indicating reasonable confidence in communicating with grieving families. However, some students still felt uncomfortable, highlighting the need for structured training in empathetic communication and medico-legal counselling during undergraduate education. Improved structured clinical postings, supervised participation in certification procedures, and communication skills training could enhance students' confidence and competence in real-world medico-legal scenarios.

DISCUSSION

The mean age of the study participants is 19.6 years, and most students were between 19 and 20 years of age. This reflects the usual age range of medical undergraduates in their clinical training period. Most participants were from Phase II, accounting for 63.4%, followed by Phase III, which accounted for 34.3% of the total sample, followed by students from Phase IV, and the group of interns. Similar demographic patterns have been noted in earlier studies by Bagga IS⁴ which indicates that the sample in this study is representative.

Findings demonstrate generally adequate knowledge among MBBS students regarding medico-legal autopsy procedures. Most of the participants correctly identified police or magistrate authorisation (61.2%) and mandatory documentation for conducting postmortem examination (87%); findings

are comparable to studies by Patil A.³ and D. Ali⁵, who reported satisfactory awareness of legal requirements. About 90.7% correctly identified the police or executive magistrate as the authority competent to order an autopsy. Knowledge regarding the purpose of medico-legal autopsy and the authority to order it was high, consistent with observations by Bagga IS.⁴ The majority of students (85%) recognised that the purpose of a medico-legal autopsy includes determining the cause of death, time since death, and post-mortem interval. Similarly, most participants (93%) were aware that partial autopsies are not acceptable.

Knowledge regarding preservation of organs and tissues was variable, with only 51.9% correctly identifying formalin for histopathological examination, reflecting gaps in practical understanding. Awareness of mortuary practices was satisfactory, as 82.4% knew that bodies should be stored at 2-4 °C to delay decomposition.

Awareness about newer concepts, such as virtopsy, was reasonably good, with **67% in the study by Ahmad M⁸ and 75.9% in this study** being aware of it. However, answers related to the preservation of organs showed gaps in practical knowledge, similar to those reported in earlier studies.

In this study, **91.6% of participants disagreed with the misconception** that post-mortem examination is performed to harass relatives or delay the release of the body, reflecting a largely positive attitude consistent with the findings of Ahmad M.⁸ Additionally, **76.4% of participants recognised the importance of conducting post-mortem examinations even in putrefied or mummified bodies.**

Although MBBS students exhibited adequate theoretical knowledge of medico-legal autopsy, the persistence of misconceptions and negative attitudes among a small number of subjects highlights the need for greater practical exposure (autopsy demonstration), improved sensitisation, and focused attitudinal training in forensic medicine.

The present study assessed MBBS students' knowledge and attitudes toward medico-legal autopsy. Overall, the findings demonstrate **adequate knowledge of legal authority and procedural requirements**, but **significant misconceptions and negative attitudes**

toward post-mortem examinations among a small proportion still exist.

CONCLUSION

MBBS students demonstrated adequate theoretical knowledge about medico-legal autopsy, particularly regarding legal authority, purpose, and procedural requirements. However, notable gaps in practical aspects, such as preservation of viscera, and the persistence of certain misconceptions and negative attitudes among a minority, highlight the need for enhanced practical training, autopsy exposure, and attitudinal sensitisation in forensic medicine education.

Implications and Recommendations

The findings of this study indicate that while MBBS students possess basic knowledge and generally hold positive attitudes toward postmortem examinations, notable gaps remain in advanced concepts, legal confidence, and practical exposure. Incorporating more interactive teaching-learning methods (TLMs), increasing the number of autopsy demonstrations, organising mock courtroom sessions, and enhancing exposure to medico-legal documentation can help bridge these gaps and enable them to become more competent and confident RMPs in their future practice.

Conflict of Interest: Nil

Funding: Nil

Limitations

1. The questionnaire assessed theoretical knowledge only. Practical competence was not evaluated.
2. As this was a study done in a single institution, the results may not apply to students from other institutions.

Institutional Ethics Approval: The study has been approved by the Institutional Ethical Committee, Ref No: IHEC-II/0973/25 dated 03/12/2025.

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