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Forensic Medicine and Autopsy: Knowledge and Awareness among 2nd Year Medical Students

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Abstract

Forensic medicine is being taught to Indian Medical Graduates during 2nd to 4th semesters as per undergraduate curriculum. *Aim:* To understand whether the 2nd *year* medical students know the basic aspects of forensic medicine, autopsy and if they are interested in choosing forensic medicine as their career. *Materials and Methods:* Study was conducted in Department of Forensic Medicine, 121 students participated. A pre-formulated questionnaire was circulated after taking verbal informed consent. The responses were evaluated. *Results and Conclusion:* Most of the students were aware of the basic principles of forensic medicine and principles of autopsy. Greater number of students did not want to choose forensic medicine as there career.

Keywords: Forensic Medicine; Autopsy; Awareness; Medical Students; Career.

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Introduction

Forensic Medicine/Legal Medicine/State Medicine is the application of Medical knowledge in administration of law and justice.[1–5] Forensic Medicine is presently being taught to the medical graduates of India in 3rd, 4th and 5th semester of their MBBS curriculum. One important part of this subject is performing autopsy.[6] Autopsy is performed to determine the cause of death, time since death, manner of death, identify a person if unidentified, determine the weapon used etc.[7] There is a shortage of Forensic Experts in India.[8,9] After MBBS, these medical graduates are posted in many peripheral areas where they may be required to perform autopsy. Therefore, they are required to know regarding the basic procedures of autopsy. This study was targeted towards medical students who are about to complete the course of Forensic medicine. The study had been undertaken to understand whether these students know the basic aspects of forensic medicine, procedure of autopsy and whether they are interested in choosing Forensic Medicine as their career.

Materials and Methods

The study was done in Department of Forensic Medicine involving students presently studying in 5th semester. A verbal informed consent was taken from students. Total 121 students participated in this study. A preformulated standardized questionnaire containing 10 questions was circulated, (**Table 1**). Questions consisted of multiple choice, True-False and Yes/No responses. The data was analysed using SPSS 16 and Microsoft Excel software.

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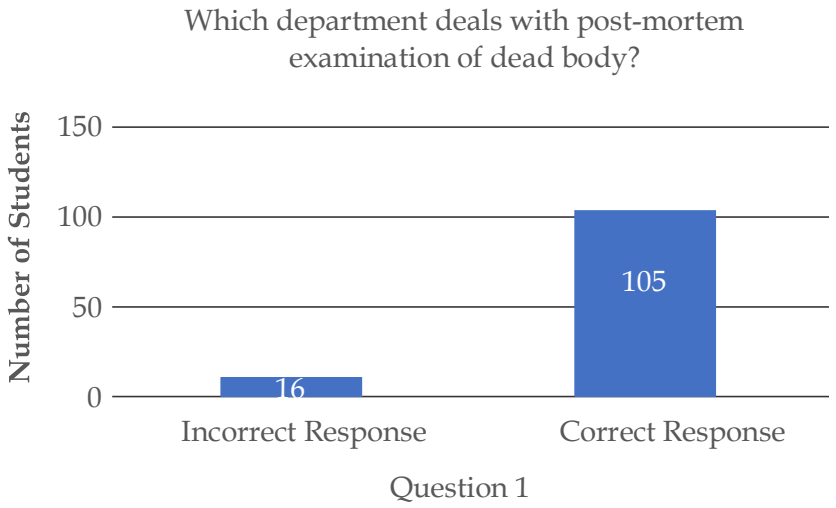
Table 1: Questionnaire used for the present study and students' responses

	Incorrect Response		Correct Response
1. Which department deals with post-mortem examination of dead body? a. Forensic medicine b. Pathology c. Both d. None	16 (13.23%)		105 (86.77%)
2. Which statement is correct: a. Forensic medicine is a part of forensic science b. Forensic science is a part of forensic medicine	4 (3.31%)		117 (96.69%)
3. Forensic medicine is a specialization of pathology. True/False	44 (36.37%)		77 (63.63%)
4. Viscera is preserved in all cases of autopsy. True/False	22 (18.19%)		99 (81.81%)}
5. Consent of relatives is taken before medico-legal autopsy. True/False	48 (39.67%)		73 (60.33%)
6. Autopsy is done mainly to determine the cause of death. True/False	13 (10.75%)		108 (89.25%)
7. Autopsy is done only in Homicide or suspected homicide cases. True/False	4 (3.31%)		117 (96.69%)
8. After medico-legal post-mortem examination, body is handed over to relatives or police. Relative/Police	55 (45.46%)		66 (54.54%)
9. Have you ever seen Hospital autopsy? Yes/no	Yes 0 (0%)		No 121 (100%)
10. Are you interested in pursuing Forensic medicine as your career? Yes/No	Yes 56 (46.28%)	Did not answer 1-(0.83%)	No 64 (52.89%)

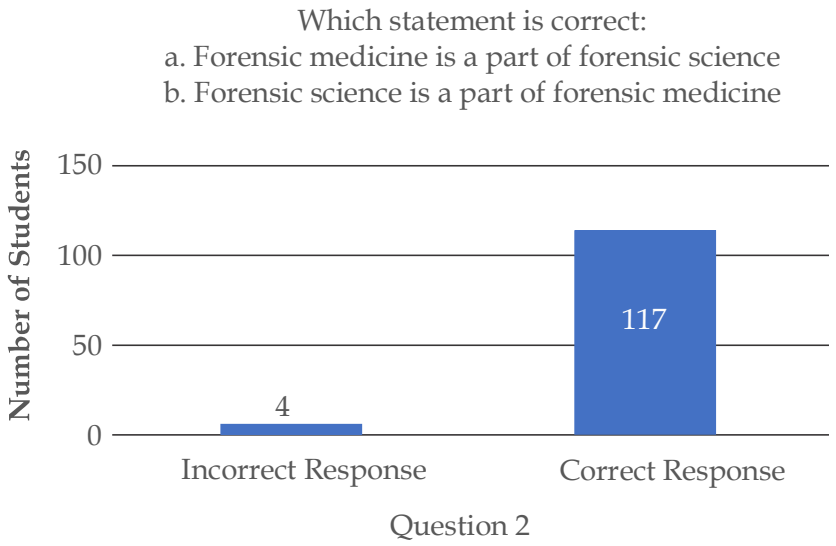
Results and Discussion

Forensic medicine is considered synonymous with post-mortem examination. Indian medical graduates are exposed to medico-legal post-mortem examination when they are posted in Department of Forensic Medicine. As per undergraduate curriculum it is necessary for the undergraduates to observe and document post-mortem examinations in their log book. However, another type of autopsy *i.e.*, hospital/pathological autopsy is also performed under Department of Pathology. In our study, we found that 105 (86.77%) students were aware of the fact that post-mortem examination is done in both departments *i.e.*, Forensic Medicine as well as Pathology (**Graph 1**).



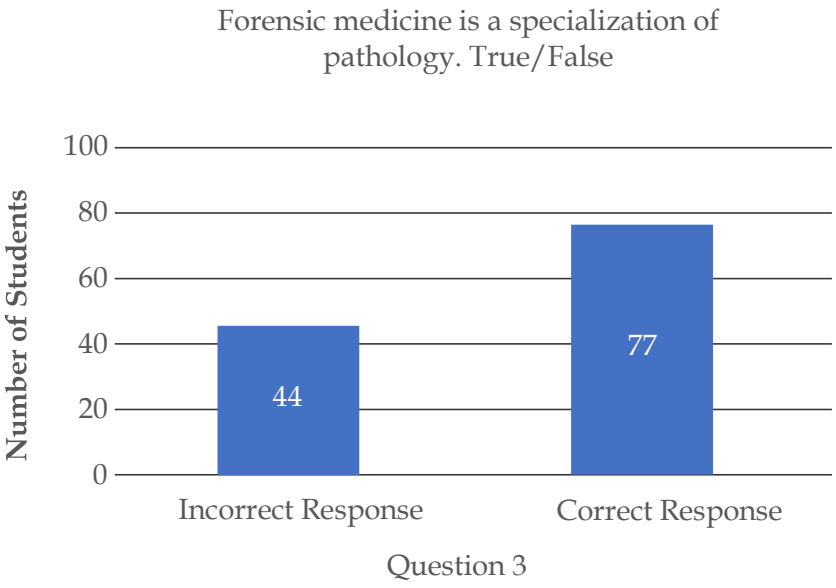
Graph 1: Response to Question 1

Forensic science is a wide discipline that covers many aspects like toxicology, ballistics, criminalistics, anthropometry, medicine etc.[10] 117 (96.69%) students were aware that Forensic Medicine is a part of Forensic Science, (**Chart 2**).



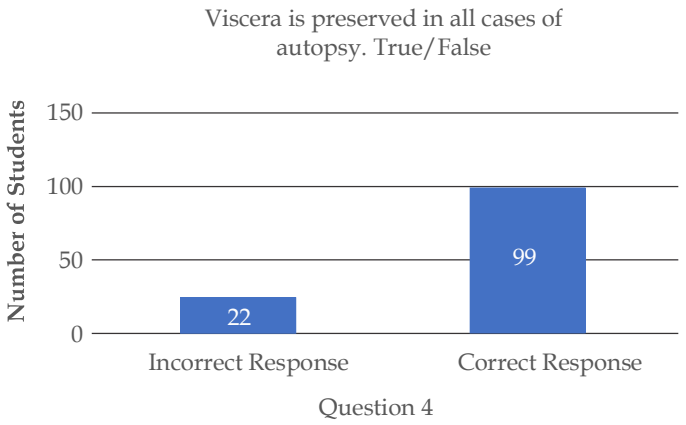
Graph 2: Response to Question 2

In most of the countries, Forensic Medicine is a field pursued after completing degree in pathology.[5,11] In India, however, due to shortage of forensic experts, post-graduation requires only a medical undergraduate degree.[5,9,12] 77 (63.63%) students were aware that Forensic medicine is a specialization of Pathology, (**Graph 3**). This is in stark comparison to the study conducted by Madadin SM, in which only 10.5% students agreed that Forensic medicine is a branch of pathology.[13]



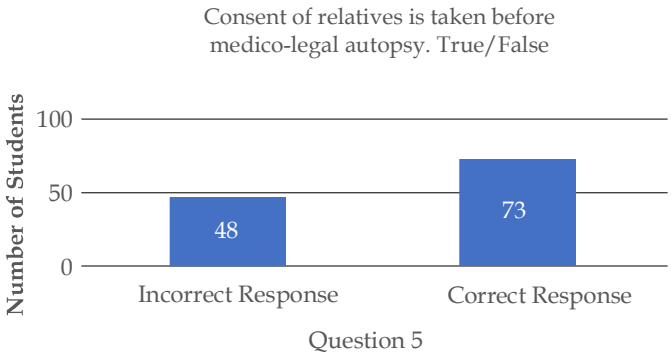
Graph 3: Response to Question 3

Viscera is preserved in cases where poisoning is suspected on post-mortem examination and not routinely. Most of the students 99 (81.81%)[8,9,12] knew that viscera is not preserved in all cases of autopsy, (**Graph 4**).



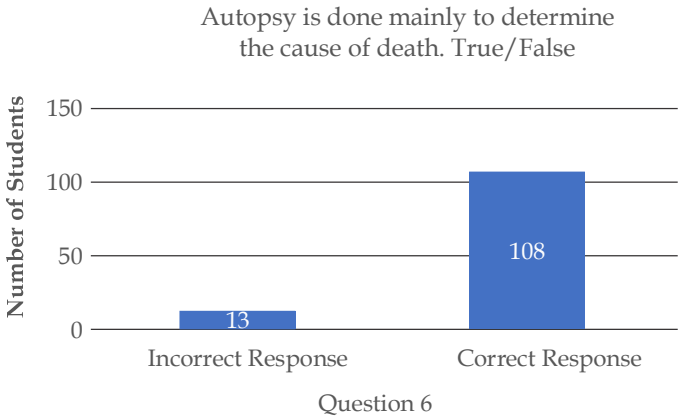
Graph 4: Response to Question 4

Medicolegal autopsy is done at the request of the Investigating officer. No consent is required to be obtained from the relatives for conducting the same.[14] 73 (60.33%) students knew that consent of relatives is not required in medico-legal autopsy, (**Graph 5**).



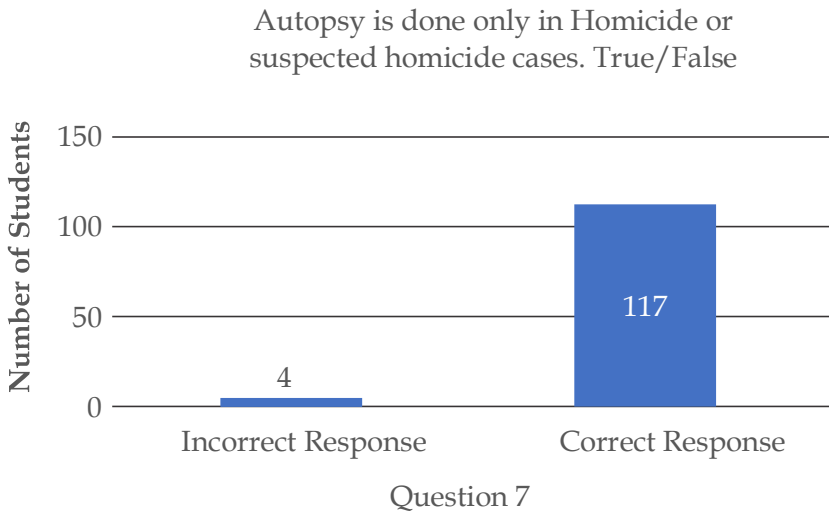
Graph 5: Response to Question 5

Autopsy is done for many reasons, like to determine cause and manner of death, to establish identity of the deceased, to determine time since death, to collect trace evidence, to determine the weapon of offence.[7] 108 (89.25%) students were aware that autopsy is done mainly to determine the cause of death, (**Graph 6**). This percentage is higher that the study done by Madadin SM, where 73.4% students were aware that autopsy is done mainly to determine the time since death.[13]



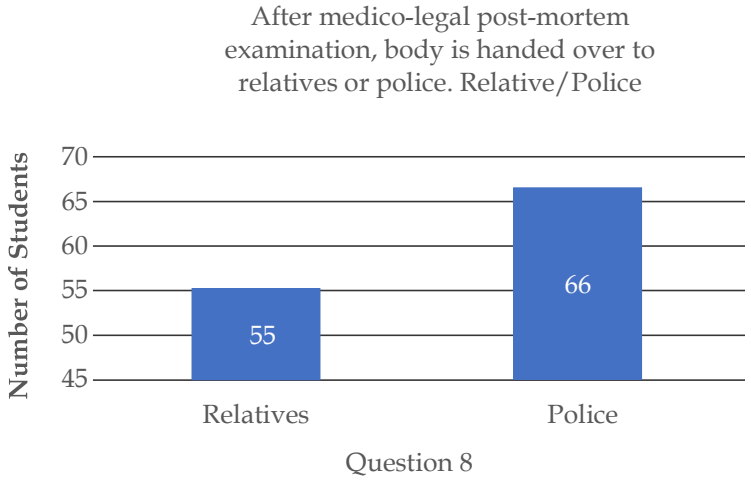
Graph 6: Response to Question 6

Autopsy is done in all cases of unattended, suspicious and unnatural death in India.[1-3] 117 (96.69%) correctly answered that autopsy is not done only in homicide/suspected homicide cases, (**Graph 7**). In the study, conducted by Madadin SM, only 2.1% students had answered it correctly. This may be because of more cases being shown and discussed during post-mortem examination leading to better understanding of the autopsy in Indian system of medical education.



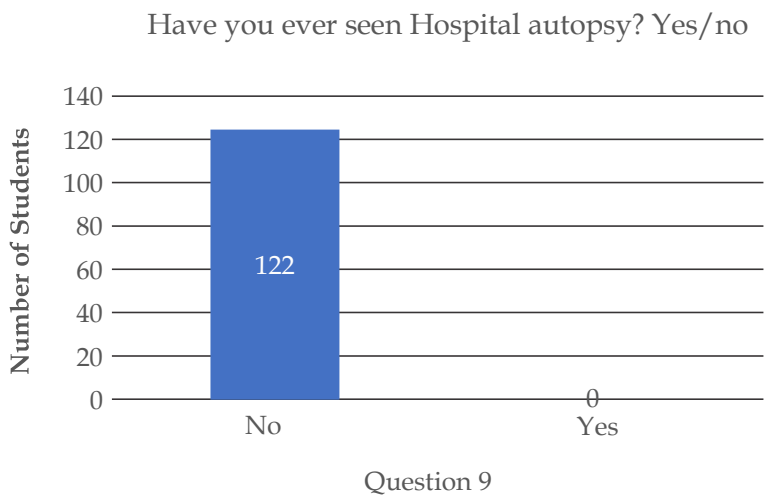
Graph 7: Response to Question 7

In case of medico-legal autopsies, the bodies are handed over to the investigating officers while in hospital autopsy the bodies are handed over to the relatives. Only 66 (54.54%) students knew that after autopsy the body should be handed over to the police and not relatives in medico-legal cases, (**Graph 8**). This may be because the students are shown the procedure of post-mortem examination and the findings therein, but they are not present at the time of handing over of the body.



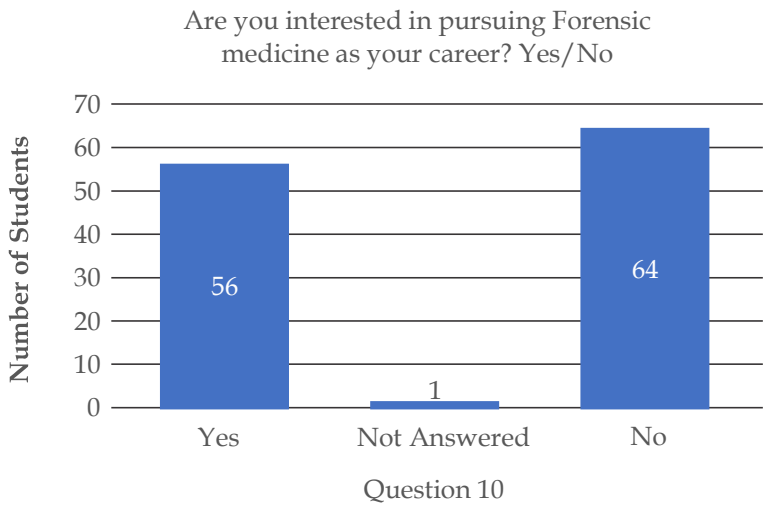
Graph 8: Response to Question 8

There has been a steady decline in hospital autopsy worldwide.[15] In our study, no student {121 (100%)} had seen hospital autopsy, (**Graph 9**). This is probably because the clinicians and pathologists are already overburdened with the clinical and laboratory load. Also, with the advancement in science there is a notion that autopsy will not provide anything new which cannot be determined by performing laboratory investigations leading to increasing trend towards radiological autopsy.[16]



Graph 9: Response to Question 9

Majority of the students (64) did not want to take Forensic Medicine as there career. 56 (46.28%) students were willing to pursue Forensic Medicine as their career and one student did not answer this question, (**Chart 10**). There is already a shortage of forensic medicine specialists in India.[8,9,12] The reason for the students not being interested in taking up the Forensic Medicine as their career can be manifold. The deplorable condition of mortuary, the lack of interest of government in improving the condition of mortuary, the stigma of being with the dead, lack of patient interaction, harassment faced in courts etc.



Graph 10: Response to Question 10

Conclusion

This study was an attempt to understand the knowledge and awareness of Forensic medicine and autopsy in 2nd year medical students. There is a dearth of Forensic Medicine specialists in India. Majority of post-mortem examinations are done by Indian medical graduates posted as medical officers. Forensic Medicine is taught in undergraduate curriculum with the aim that the students should be able to perform independent autopsies. In our study, we found that most of the students were aware regarding the basic principles of forensic medicine and the procedure of autopsy. Also, a greater number of students did not want to take up Forensic Medicine as there career. This highlights the need for immediate action in a field which is already deprived of qualified specialists.

More allocation of resources, favorable salaries, possibility of growth, better career prospects may increase the interest of future doctors in the field of Forensic medicine.

Conflict of interest None.

Ethical approval: Not required.

References

1. Aggrawal A. Textbook of Forensic Medicine and Toxicology, 1st edition. New Delhi: Avichal Publishing Company; 2014.
2. Guharaj P. Forensic Medicine, 1st edition. India: Orient Longman Ltd; 1999.
3. Reddy DKSN. The Essentials of Forensic Medicine and Toxicology, 29th edition. Hyderabad: Om Sai Graphics; 2010.
4. Subramanyam B. Modis Medical Jurisprudence and Toxicology, 22nd edition. Butterworths; 2001.
5. Meilia PDI, Freeman MD, Herkutanto, *et al*. A review of the diversity in taxonomy, definitions, scope, and roles in forensic medicine: Implications for evidence-based practice. Forensic Science, Medicine, and Pathology. 2018;14(4):460–68.
6. Anders S, Fischer-Bruegge D, Fabian M, *et al*. Teaching post-mortem external examination in under-graduate medical education: The formal and the informal curriculum. Forensic Science International. 2011;210(1–3):87–90.
7. Kotabagi RB, Charati SC, Jayachandar D. Clinical Autopsy *vs* Medico-legal Autopsy. Medical Journal, Armed Forces India. 2005;61(3):258–63.
8. Mehta NBS. Shortage of forensic experts in medical colleges puts cops in a fix. The Times of India. 2019.
9. Jagadeesh N. The status of forensic medicine in India. Indian Journal of Medical Ethics. 2008;5(4):154–56.
10. Forensic Science. [cited 2019 18/9/2019]; Available from: https://en.wikipedia.org/wiki/Forensic_science.
11. Hanzlick R, Prahlow JA, Denton S, *et al*. Selecting forensic pathology as a career: A survey of the past with an eye on the future. The American Journal of Forensic Medicine and Pathology. 2008;29(2):114–22.
12. Salgado MS. Forensic medicine in the Indo-Pacific region: History and current practice of forensic medicine. Forensic Science International. 1988;36(1-2):3–10.
13. Madadin MS. Assessment of knowledge about, attitudes toward, and awareness of a forensic medicine course among medical students at the University of Dammam. Journal of Forensic and Legal Medicine. 2013;20(8):1108–111.
14. Lunetta P, Lounamaa A, Sihvonen S. Surveillance of injury-related deaths: Medico-legal autopsy rates and trends in Finland. Injury Prevention: Journal of the International Society for Child and Adolescent Injury Prevention. 2007;13(4):282–84.
15. Turnbull A, Osborn M, Nicholas N. Hospital autopsy: Endangered or extinct? Journal of Clinical Pathology. 2015;68(8):601-04.
16. Julian L Burton, Rutty G. The Hospital Autopsy: A Manual of Fundamental Autopsy Practice. 3rd edition. Italy: Hodder Arnold; 2010.