

## Knowledge and attitude of medical students toward medico- Legal autopsy

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### Abstract

**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 MBBS. The aim of this study is to investigate the general attitude of medical students of 2<sup>nd</sup> years MBBS towards medico-legal autopsy/Clinical autopsy.

**Materials and Methods:** A study was conducted in Deccan College of Medical Sciences, Hyderabad in the month of April 2017. Questioner contains several questions relating to the autopsy practice, the knowledge of the procedure and attitude and perception towards postmortem examination. The questionnaires were analyzed in detail and result was represented in frequency. A total of 115 students participated in the study.

**Results:** About 78% students agreed that medico-legal postmortem examination is mandatory in all unnatural and suspicious deaths to know the cause of death. About 77% of students said that taking out viscera is necessary for histo-pathological examinations and toxicological analysis in cases of medico legal autopsies. Majority (87%) of the students said they should watch more postmortem examination. Only 20% of students said post mortem examination should be scrapped from medical education. Nearly 70% students said that they should actively participate in performing autopsies. Only 13% students were interested in opting specialization in Forensic Medicine. Maximum number of students i.e.92% prefer virtual autopsy.

**Conclusion:** 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.

**Keywords:** Clinical autopsy, Forensic medicine, Medical education, Medico legal autopsy.

### Introduction

Autopsy is a research tool which has been used for centuries. In nineteenth century, Virchow and Osler used the autopsy to understand the pathology of fatal diseases such as endocarditis and pulmonary embolism.<sup>1</sup> Autopsy can be divided into medico legal and clinical. The medico-legal autopsy plays an important role in the administration of justice. Forensic or medico-legal autopsy is a special type of autopsy performed as a part of inquest (legal investigation into cause of death) and carried out in unnatural deaths or deaths occurring in mysterious or suspicious circumstances. A clinical or hospital autopsy is the final step in the identification of a person's illness or cause of death. Contribution of clinical autopsy to medical field extends beyond confirmation of the ante mortem diagnosis. The value of autopsy has been proven in its elucidation of the cause of death, clinical quality control, medical auditing and in medical education.<sup>2-5</sup>

Various studies have established that autopsy has been central to medical education, as it teaches students about clinico-pathological correlations, gross anatomy of disease, death certification and death statistics.<sup>2,6</sup> Despite the proven evidence of its clinical value and relevance, the use of autopsy in medical education has been declining, just as autopsy rate has been falling worldwide.<sup>7-9</sup> In India, overall scenario of medico-legal work is substandard. In hospitals, except those attached to medical colleges, most of the forensic autopsies are being conducted by medical practitioners who are not

specialists in forensic medicine, resulting in unsatisfactory quality autopsy reports.<sup>10-11</sup>

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 MBBS so that they can observe and interpret the various changes in organs and tissues. It is only when students attend an autopsy section that they can appreciate the large number of pathological conditions in different patients. An intern is supposed to acquire the skill of doing a medico-legal autopsy. Thus, every medical graduate is presumed to be capable of doing a medico-legal autopsy after registering as a medical practitioner.<sup>12</sup> Various reasons given for the decline in autopsy-based teaching include insufficient hospital autopsies, competing departmental duties and limited curriculum time.<sup>13</sup> It is obvious that knowledge of autopsy will broaden the students' mind and enhance a more accurate diagnosis during the subsequent years of their clinical practice as doctors.

The knowledge and attitude of medical students and interns towards medico-legal autopsy is a significant factor that influences the quality of autopsy reports. Very few studies have been conducted on the attitudes of medical students to clinical autopsy /medico legal autopsy. The aim of this study is to investigate the general attitude of medical students of 2<sup>nd</sup> years MBBS towards medico-legal autopsy/clinical autopsy.

## Materials and Methods

To assess the knowledge and attitude of medical student, a study was conducted in Deccan College of Medical Sciences, Hyderabad in the month of April 2017. Before starting the study, written approval from the institutional ethics committee as well as written informed consent from the participants was obtained. Medical students, who refused to participate or were not available on the day of data collection, were excluded from the study. Questionnaires were prepared, after going through literature and consulting other faculty members of the department. Questioner contains several questions relating to the autopsy practice, the knowledge of the procedure and attitude and perception towards postmortem examination. The questionnaires were distributed to the students and they were asked not to disclose their identity. The questionnaires were analyzed in detail on the following aspects: usefulness and necessity of autopsy in medical practice and education; their personal distaste for the procedure, whether attendance at an autopsy should remain a compulsory part of medical education, and feelings about autopsies carried out on self or relatives etc. A total of 115 students participated in the study. Result was represented in frequency in tabular form.

## Results

Out of total 115 students, 90 (78%) students agreed that medico-legal postmortem examination is mandatory in all unnatural, sudden, unexpected and suspicious deaths. About 78% of students said that

postmortem examination is done to know the cause of death, while 15% students said it is inconvenience to the relatives of the deceased. About 83% of students know that both external and internal examination should be followed during medico-legal autopsy. About 77% of students said that taking out viscera is necessary for histo-pathological examinations and toxicological analysis in cases of medico legal autopsies. About 93% know that 10% formalin is used to preserve the tissues for toxicological analysis. There was a mix reaction from the students on the first exposure to postmortem examination, majority (89%) of them were uncomfortable. Majority (87%) of the students said they should watch more postmortem examination. But only 12% wished to have postmortem examination on self/relative when required. About 80% students believed that disfigurement by postmortem examination is disrespect to human body. Only 20% of students said post mortem examination should be scrapped from medical education. About 60% of the students think that they are not capable of performing the autopsy independently on becoming a physician. Nearly 70% students said that they should actively participate in performing autopsies. Only 13% students were interested in opting specialization in forensic medicine and the most common reasons for not opting specialization in forensic medicine was that they were interested in other specialties (68.7%). Maximum number of students i.e.92% prefer virtual autopsy.

**Table 1: Results of the study**

1.	Medico-legal postmortem examination is mandatory in all unnatural and sudden unexpected and suspicious death cases.	a) Yes=90 (78%) b) No=25 (22%)
2	Before conducting medico-legal autopsy, following is necessary	a) Consent of relatives must= 1 (0.8%) b) Inquest report from investigating officer=2 (1.7%) c) Requisition letter from investigating officer =1 (0.8%) d) None of the above=111 (96.5%)
3	Postmortem examination is	a) Done to know the cause of death=90 (78.2%) b) Mere legal formality=10 (8.6%) c) Inconvenience to the relatives of the deceased=18 (15.6%) d) Helpful in reaching the culprit of crime=34 (29.56%) e) All the above= 4 (3.4%)
4	During medico-legal autopsy following procedures should be followed	1) External Examination only=14 (12.1%) 2) Internal Examination only=5 (4.3%) 3) Both external and internal examination=96 (83.4%)
5	Is taking out viscera necessary for histo-pathological examination and toxicological analysis in cases of medico legal autopsy?	a) Yes=89 (77.3%) b) No=26 (22.7%)
6	Tissues for toxicological analysis are preserved in	a) Saturated solution of common salt=3 (2.6%) b) 10% Formalin=107 (93%)

		c) Normal Saline=2 (1.7%)
		d) Alcohol=3 (2.6%)
7	The reaction of the students on the first exposure to postmortem examination	a) Comfortable=13 (11.3%)
		b) Slightly uncomfortable=42 (36.5%)
		c) Moderately uncomfortable=30 (26.1%)
		d) Very uncomfortable= 30 (26.1%)
8	Students should watch more postmortem examination	a) Yes=101 (87.8%)
		b) No=14 (12.2%)
9	Wished to have postmortem examination on self/relative when required	a) Yes=14 (12.2%)
		b) No=101 (87.8%)
10	Post Mortem examination should be scrapped from medical education.	a) Yes=23 (20%)
		b) No=89 (80%)
11	Disfigurement by postmortem examination is disrespect to human body.	a) Yes=93 (80.8%)
		b) No=22 (19.2%)
12	On becoming a physician if you have to conduct an autopsy, do you think you are capable of performing the autopsy independently.	a) Yes=45 (39.1%)
		b) No=70 (60.9%)
13	Reasons for not opting specialization in Forensic Medicine	a)Not interested in Forensic Medicine= 8 (6.9%)
		b) Interested in other specialties=79 (68.7%)
		c) Not lucrative, Scope in India is minimal=13 (11.3%)
		d) Interested =15 (13%)
14	Should medical students actively participate in performing autopsies?	a)Yes=80 (69.5%)
		b) No=35 (30.5%)
15	Should witnessing autopsy be scrapped from the UG curriculum	a)Yes=11 (9.5%)
		b) No=104 (90.5%)
16	Will you prefer	a) Virtual autopsy = 106 (92.1%)
		b) Conventional autopsy=9 (7.9%)

## Discussion

The autopsy is instrumental in accurately establishing the cause and manner of death hence it plays a crucial role in acquiring medical knowledge, and has been an important part of medical education for centuries. But autopsy has been nearly squeezed out of the regular medical curriculum in order to accommodate increasing amount of modern medicine education. This tendency has drawn much attention and is worrisome for both medical educators and medical students. Autopsies allow students to grasp pathology in clinical contexts also. 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. However, an awareness and management of these factors should be advantageous if the attitudes of future practitioners are to be influenced.

The results of present study indicate that medical students had sufficient knowledge about the procedures and had positive attitude towards observing the autopsies, which is similar to the studies conducted by Verma<sup>14</sup> & Virendar.<sup>15</sup> In present study majority of the students were aware of the situations where medico-legal autopsy and preservation of viscera is mandatory.

In this study we found that majority of the students agreed on the importance of autopsy in medical

education and are in favour of watching and even encouraging medical students to observe and participate in more autopsies. These findings were similar to the findings of many studies<sup>14-17</sup> but in this study only 12% wished to have postmortem examination on self/relative when required which is contradictory to the finding of Jadeep<sup>18</sup> in Ahmadabad, and Sanner<sup>19</sup> in Sweden, in which 82%, 90% and 82.5% of the students respectively agreed for autopsy to be performed on themselves. Similarly in this study we found that about 80% students believed that disfigurement by postmortem examination is disrespect to human body which is contradictory to the finding of Jadeep.<sup>18</sup> This difference may be because of their psychological and socio cultural differences. The dissection of a dead body is not simply a technical exercise; it raises emotional feelings with regard to human mortality and dignity. Thus students' emotional and psychological reactions are important, but unfortunately neglected aspect of medical training.

In this study we found that nearly 70% students are interested to actively participate in performing autopsies which is in concordance to the finding of Ravi<sup>17</sup> this indicate that students believe in learning by active participation in performing autopsies rather only standing and watching as mute spectators. There was a lack of interest of medical students in choosing forensic

medicine as a branch of specialization and most common reason was interest towards other branch of specialty similar finding was also reported in a study conducted in Pune by Ravi.<sup>17</sup>

### Conclusion

Overall, this study supports the views that medical students should be encouraged and facilitated to watch more autopsies and their practical training of autopsies should be more effective. Unpleasant aspects of an autopsy demonstration should be kept to a minimum to encourage participation that might be useful to modify students' opinions before they graduate. It will also help them to conduct autopsies in a better way once they complete the graduation and posted in hospitals and primary health centres.

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### References

- Brooks JP, Dempsey J. How can hospital autopsy rates be increased? *Arch Pathol Lab Med* 1991;115:1107-11.
- Teo CE. The autopsy. *Singapore Med J* 1997;38:71-5.
- 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.
- Cooper H, Lucas SB. The value of autopsy, believe it or not. *The Lancet* 2007;370 (9581):27.
- Burton JL, Underwood J. Clinical, educational, and epidemiological value of autopsy. *The Lancet* 2007;369:1471-80.
- Hill RB, Anderson RE. The uses and value of autopsy in medical education as seen by pathology educators. *Acad Med* 1991;66:97-100.
- Lowry F. Failure to perform autopsies means some MDs "walking in a fog of misplaced optimism." *CMAJ* 1995;15:811-14.
- Galloway M. The role of autopsy in medical education. *Hosp Med* 1999;60:756-8
- Loughrey MB, Mc Cluggage WG, Toner PG. The declining autopsy rate and clinicians' attitudes. *Ulster Med J* 2000;69:83-9.
- Yadwad BS. Medico-legal autopsy-what, why and how. *J Indian Med Assoc.* 2002;100(12):703-5.
- Badkur DS. Presidential Address: 32<sup>nd</sup> Annual National Conference of Indian Academy of Forensic Medicine, Nellore, A.P. *J Indian Acad Forensic Med.* 2011;33(1).
- Medical Council of India. Regulations on graduate medical education 1997. New Delhi: MCI 1997;28-9.
- Hill RB, Anderson RE. The uses and value of autopsy in medical education as seen by pathology educators. *Acad Med* 1991;66:97-10.
- Verma S.K. Knowledge and attitude of medical students in Delhi on postmortem examination 1999, *Indian J Med Sci* Aug;53(8):352-8.
- Virendar P S, Gautam B. Knowledge and Attitude of Medical Students and Interns toward Forensic Autopsy. *J Indian Acad Forensic Med.* 2014;36(1):9-12.
- Ekanem VJ and Akhgbe KO. Attitudes of medical students towards autopsy. *Turk J Med Sci* 2006;36:51-56.
- Ravi Rautji, Avishek Kumar, C Behera. Attitudes of Medical Students towards Medico-legal/Clinical Autopsy. *J Indian Acad Forensic Med.* 2013;35( 4):358-361.
- Jadeep. C J, Bhaskar. N P, Kalpesh A S, Rakesh N T. Knowledge and Attitude of Medical Students on Forensic Autopsy in Ahmedabad City. *J Indian Acad Forensic Med.* 2013;35(1):26-28.
- Sanner MA. Medical Student's attitudes towards autopsy. How does experience with autopsies influence opinion? *Arch Pathol Lab Med* 1995;119:851-58.