

Original Research Paper

Knowledge and Attitude of Medical Students and Interns toward Forensic Autopsy

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Abstract

For centuries, autopsy has been instrumental in establishing the cause of death both in clinical and Forensic cases. Clinical autopsy has significant role in clinical quality control, clinical auditing and medical education. Medical student's knowledge and attitude toward Forensic autopsies influence the quality of autopsy reports being prepared by them in their professional carriers. A survey was conducted on 100 medical students and 40 interns to assess their knowledge and attitude toward Forensic autopsy. Most of the medical students (76% Part I and 90% part II) and interns (60%) found that demonstrations of the autopsies during their 2nd Prof Practical classes was a learning experience and wished, they could see more autopsies. However in the present study, majority of the medical students (88% Final Yr. Part I and 84% Final Yr. Part II) and interns (87%) felt themselves incapable of performing autopsies independently on becoming physicians. Medical teachers should encourage the medical students to become more interested in observing Forensic autopsies. It is suggested that problem based learning during practical training of autopsy must be incorporated as a part of the medical curriculum.

KeyWords: Autopsy, Forensic autopsy, Medical students, Interns

Introduction:

For centuries, autopsy has been instrumental in establishing the cause of death both in clinical and Forensic cases. The knowledge gained from clinical autopsies conducted during the earlier times have helped in-laying the foundation stones of modern medicine. Western medicine led to the first insights into the connections between a patient's clinical symptoms and the diseased organs due to the practice of autopsy. In nineteenth century, Virchow and Osler used the autopsy to understand the pathology of fatal diseases such as endocarditis and pulmonary embolisms. [1]

Contribution of clinical or hospital autopsy to medical field extends beyond confirmation of the ante mortem diagnosis. It has a significant role in clinical quality control, clinical auditing and medical education. [2,3]

The quality of healthcare services can be assured and regularly monitored by backing up clinical diagnosis with a pathological diagnosis.

Various studies have established that autopsy has been central to medical education, as it teaches students about clinic-pathological correlations, gross anatomy of disease, death certification and death statistics. [4-6] Despite the proven evidence of its clinical value and relevance, the incidence of clinical autopsies is declining world over. [7]

Factors responsible for decline are complex and include financial constraints, unfavorable attitude of healthcare professionals towards autopsies, clinicians not asking for permission to have the autopsy performed on their patients. [8] 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.

The inquest system exists in all parts of the world, though it may vary from country to country depending upon the local legal system. England, and many other countries and colonies associated with England adopted the Coroner System of inquest.

In United States of America, presently many states are following the Medical Examiner System of inquest. Continental Europe and their former colonies follow the Code Napoleon. In Scotland the Procurator Fiscal System is followed. [9]

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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. [10, 11] Medico-legal knowledge is imparted to the undergraduate medical students during 2nd Prof. under the subject of Forensic Medicine and Toxicology.

The undergraduate students are supposed to witness medico-legal autopsies so as to be capable of interpreting medico-legal autopsy findings. The knowledge and attitude of medical students and interns towards Forensic autopsy is a significant factor that influences the quality of autopsy reports.

Material and Methods:

To assess the knowledge and attitude of medical students and interns towards medico-legal autopsy, a study was conducted on 100 medical students (50 each from MBBS Final year part I and part II), and 40 interns of Dayanand Medical College and Hospital, Ludhiana, Punjab. Before starting the study, written approval from the institutional ethics committee as well as written informed consent from the participants was obtained after providing the information sheet.

The questionnaires consisting of 12 questions related to the knowledge of and attitude towards autopsy were distributed to the aforementioned participants.

Medical students and interns, who refused to participate or were not available on second visit, were excluded from the study. The students who got reappear in the subject of Forensic Medicine and yet to clear the exams were also excluded from the study.

Observation:

A total of 100 medical students (50 each from MBBS Final year Part I and Part II) and 40 interns participated in this study. The majority of students (Final Yr. Part I 100% & part II 98%) and interns (87%) agreed that medico-legal autopsy plays an important role in administration of justice by providing significant information to the court of law regarding unnatural deaths. (Table 1) Most of the medical students (76% Part I and 90% part II) and interns (60%) found that demonstrations of the autopsies during their 2nd Prof Practical classes was a learning experience and wished, they could see more autopsies.

However some students (14% part I and 10% part II) and 20% interns, either felt uncomfortable or did not find it to be a learning experience. (Table 1)

Out of total 76% students of Final Yr. Part I, and 72% students of Final Yr. Part II, and 77% interns agreed that demonstration of medico-legal autopsies facilitates 'problem based learning' and compliments the didactic teaching. (Table 1)

On being asked whether they felt capable of conducting the autopsy independently (upon becoming a physician), 88% Part I and 84% Part II students and 87% interns felt themselves incapable or were not sure about their capability.

In this study 94% Final Yr. Part I and 80% Final yr. Part II students found demonstration of medico-legal autopsy as an opportunity to discuss the medico-legal issues with their teachers. Six questions were asked to evaluate the knowledge of participants regarding medico-legal autopsy.

Our study showed that 86% Part I, and 90% Part II students and 85% interns knew that medico-legal autopsy is must in all unnatural and sudden and suspicious deaths. (Table 2)

Majority of the Part I students (98%), and Part II students (98%) and 90% interns were aware that both external and internal examination is carried out during the autopsy. (Table 2) 58% Part I, and 28% Part II students and just 22.5% interns knew the ideal temperature to preserve the dead body for autopsy. (Table 2)

Unexpectedly less number of medical students and interns knew about the commonly used preservative for sending the viscera for toxicological and histo-pathological analysis.

About half of the medical students (50% Part I and 46% Part II) and 40% interns were aware that before conducting the autopsy, an inquest report from investigating officer is a must.

Discussion:

Autopsy plays a crucial role in acquiring medical knowledge, and has been an important part of medical education for centuries. [12-14]

The results of present study indicate that medical students and interns are knowledgeable about the procedures and value of autopsy and that they have positive attitude towards observing the autopsies, which is similar to the survey conducted by Verma. [15]

In our study, demonstration of autopsies was considered a learning experience by most of them. This compares favorably with a study [16] conducted on medical students of BJ Medical College, Ahmedabad, Gujrat, where 96.5% students agreed that autopsy is necessary in medical education and 88%

students recommended that students should watch more postmortem examinations.

In a similar study [17] conducted on Nigerian medical students, most of the students 232 (97%) agreed on the importance of autopsy in medical education and would even encourage medical students to observe and participate in more autopsies. The majority of students (93%) felt that autopsy should not be scrapped from the medical school curriculum.

However in the present study, majority of the medical students and interns felt themselves incapable of performing autopsies independently on becoming physicians.

It is only during the study of Forensic Medicine, when these future ambassadors of the medical profession get a chance to learn about autopsies. Lack of confidence of medical students and interns is indicative of defect in the autopsy training being imparted to them.

The authors recommend that medical teachers should encourage the medical students to become more interested in observing Forensic autopsies. It is suggested that problem based learning during practical training of autopsy must be incorporated as a part of the medical curriculum.

However, more research and discussions are required to create a structured problem based learning program for undergraduate medical students so as to effectively impart the skill to conduct the autopsies independently.

Conclusion:

Autopsy is an important procedure which has the ability to advance medical knowledge and improve clinical practice. It has been central to medical education. Medical students and interns have positive attitude towards observing the autopsies.

But most of them felt themselves incapable of performing autopsies independently

on becoming physicians. Medical students should be encouraged to be more interested in observing Forensic autopsies.

Practical training of autopsies should be more effective to serve the purpose. It is suggested that problem based learning during practical training of autopsy must be incorporated as a part of the medical curriculum.

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Table 1
Responses of MBBS students Final Yr Part I (A), Final Yr. Part II (B) & Interns (C)

Questions	Reply	A (50)	B (50)	C(40)
1. Medico-legal autopsy plays an important role in administration of justice by providing significant information about unnatural death to the court of law.	a. Strongly Agree	23 (46%)	29 (58%)	18 (45%)
	b. Agree	27 (54%)	20 (40%)	17 (42.5%)
	c. Not sure (neither agree nor disagree)	--	--	3 (7.5%)
	d. Disagree	--	1 (2%)	2 (5%)
	e. Strongly Disagree	--	--	--
2. What is your experience regarding demonstration of the autopsies during 2 nd Prof Practical classes?	a. It was a learning experience and wished I could see more autopsies	43(86%)	45 (90%)	32(80%)
	b. I felt very uncomfortable and wished I could avoid seeing the autopsies.	4(8%)	3 (06%)	6(15%)
	c. It was not at all a learning experience.	3 (6%)	2(4%)	2(5%)
3. What was the source of information about medico-legal autopsies during 2 nd Prof MBBS?	a. Medical curriculum books +Lectures by faculty of Forensic Medicine	48 (96%)	48 (96%)	38 (95%)
	b. Medical curriculum books only (teachers played no role)	2 (4%)	1 (2%)	1 (2.5%)
	c. Magazines and Newspapers	--	1(02%)	1 (2.5%)
	d. Internet	--	--	--
4. Demonstration of medico-legal autopsies in the UG curriculum facilitates Problem Based Learning and compliments the didactic teaching.	a. Strongly Agree	7 (14%)	10 (20%)	8 (20%)
	b. Agree	31 (62%)	26(52%)	23 (57.5%)
	c. Not sure (neither agree nor disagree)	8 (16%)	11 (22%)	5 (12.5%)
	d. Disagree	4(8%)	3 (6%)	4 (10%)
	e. Strongly Disagree	--	--	--
5. On becoming a physician if you have to conduct an autopsy, do you think you are capable of performing the autopsy independently?	a. Strongly Agree (yes)	3 (6%)	3 (6%)	1(2.5%)
	b. Agree (yes)	8(16%)	5(10%)	4 (10%)
	c. Not sure (neither agree nor disagree)	20 (40%)	21(42%)	11 (27.5%)
	d. Disagree	15 (30%)	14 (28%)	20 (50%)
	e. Strongly Disagree	4 (8%)	7 (14%)	4 (10%)
6. Actual demonstration of medico-legal autopsy provides an opportunity to the students to discuss with their teachers the medico-legal issues related to autopsy.	a. Strongly Agree	11 (22%)	12 (24%)	11 (27.5%)
	b. Agree	36(72%)	28 (56%)	19 (47.5%)
	c. Not sure (neither agree nor disagree)	1 (2%)	7 (14%)	7 (17.5%)
	d. Disagree	2 (4%)	2 (4%)	2 (5%)
	e. Strongly Disagree	--	1(2%)	1 (2.5%)

Table 2
Responses to the questions (assessing knowledge) by MBBS students Final Yr. Part I (A), Final Yr. Part II (B) & Interns (C)

Questions	Reply	A (50)	B (50)	C (40)
1. Medico-legal autopsy is mandatory in all unnatural and sudden unexpected and suspicious deaths	a. Strongly Agree	27 (54%)	26 (52%)	17 (42.5%)
	b. Agree	16 (32%)	19 (38%)	13 (32.5%)
	c. Not sure (neither agree nor disagree)	6 (12%)	2 (04%)	7 (17.5%)
	d. Disagree	1 (2%)	3 (6%)	3 (7.5%)
	e. Strongly Disagree	--	--	--
2. During medico-legal autopsy following procedure is followed:	a. External Examination only	1 (2%)	--	1 (2.5%)
	b. Internal Examination only	(%)	--	2 (0.5%)
	c. Both external and internal examination	49 (98%)	49(98%)	36 (90%)
	d. Not sure	--	1 (02%)	1 (2.5%)
3. The temperature ideally preferred to preserve the body for autopsy is:	a. - 5° C	17 (34%)	23(46%)	22(55%)
	b. 0° C	3 (06%)	--	6 (15%)
	c. 4° C	29 (58%)	14(28%)	9 (22.5%)
	d. 10° C	1(2%)	3 (6%)	3 (7.5%)
4. Tissues for toxicological analysis are preserved in:	a. Saturated solution of common salt	11 (22%)	4 (08%)	6 (15%)
	b. 10% Formalin	18 (36%)	30 (60%)	28 (70%)
	c. Normal Saline	19 (38%)	15(30%)	5 (12.5%)
	d. Alcohol	2 (4%)	1 (2%)	1 (2.5%)
5. Tissues for histo-pathological analysis are preserved in:	a. Normal saline	20 (40%)	8(16%)	4 (10%)
	b. Formalin	24 (48%)	37 (74%)	26 (65%)
	c. Saturated Salt solution	5 (10%)	3 (06%)	9 (22.5%)
	d. Rectified Spirit.	1 (2%)	2 (4%)	1 (2.5%)
6. Before conducting medico-legal autopsy, following is must.	a. Consent of relatives	24 (48%)	26 (52%)	22 (55%)
	b. Inquest report from investigating officer	25 (50%)	23 (46%)	16 (40%)
	c. Consent of uninterested party	--	--	1 (2.5%)
	d. None of the above	1 (2%)	1 (2%)	1 (2.5%)