



MEDICAL STUDENTS' PERCEPTIONS AND KNOWLEDGE OF MEDICO-LEGAL AUTOPSIES IN PAKISTAN: A CROSS-SECTIONAL STUDY

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ABSTRACT

Background: Medico-legal autopsies are crucial for determining causes of unnatural deaths and play a significant role in medical education. This study aims to assess fourth-year medical students' knowledge, attitudes, and perceptions towards ML autopsies at Ameer-ud-Din Medical College, Lahore.

Material & Method: In December 2023, a cross-sectional study involving 91 fourth-year medical students was conducted. Data was collected using an online questionnaire covering various aspects of autopsy practice, including knowledge, attitudes, and educational impact. Participation was voluntary, and responses were anonymised.

Results: Among 91 participants, 48 (52.7%) were males, and 43 (47.3%) were females. Most students (82.4%) were aware that ML autopsies are mandatory in cases of suspicious deaths. Despite recognising their educational value, 89.0% felt uncomfortable during their first postmortem examination. While 91.2% were unaware of the documentation for ML autopsies, 82.4% understood the procedures involved. A significant majority (96.7%) learned about autopsies from their curriculum, and 87.9% desired more observational opportunities. Notably, 94.5% preferred virtual autopsies over traditional methods.

Conclusion: The study highlights the educational importance of medico-legal autopsies despite associated discomfort and negative perceptions. There is a need to modernise autopsy tools and practices, enhance curricular exposure, and provide emotional support to students. Implementing these changes could improve the quality of autopsy reports and medical education, better preparing future physicians for forensic responsibilities.

Keywords: Forensic Medicine, Autopsy, Medico-legal, Attitude, Postmortem Examination, Medical Education,

INTRODUCTION

An autopsy is a thorough investigation of a deceased person for medical, legal, and scientific reasons and includes different types such as academic, pathological, and forensic or medico-legal (ML) autopsies (1). "Autopsia," which comes from the ancient Greek language, means "to see for oneself" (2), involves a thorough examination of both the external and internal organs, encompassing the cranial, thoracic, abdominal, and pelvic areas (3).

In Pakistan, only medico-legal autopsies (MLA) are performed. These important scientific investigations are conducted in accordance with state laws to protect the rights of citizens and assist in identifying and prosecuting offenders in cases of unnatural deaths. Mandated by Section 174, Sub-section 3 of The Code of Criminal Procedure (CrPC) 1898, the MLA process requires examination by authorised medical professionals appointed by the Provincial Government, especially when the cause of death is uncertain or is the subject of a police inquiry (4).

Medical students in Pakistan are required by the Pakistan Medical & Dental Council (PMDC) curriculum to observe a minimum number of Medicolegal Autopsies (MLAs) during their third year of study. The purpose of this requirement is to familiarise medical students with the process of conducting an MLA, which they will be expected to do as medical practitioners. Given the shortage of Forensic Medicine (FM) experts in the country, general practitioners often carry out MLAs. Participating in autopsy sessions allows students to gain insights into various pathological conditions, highlighting the significance of MLAs and clinical autopsies in enhancing medical education, medical auditing, clinical quality control, and investigating the cause of death (5). Attending an autopsy also offers opportunities to discourse forensic pathology, certification of death, apt approach towards death, and essential skills in communication for delivering bad news or obtaining consent for an autopsy (6).

Understanding autopsy procedures expands students' perspectives and improves diagnostic precision in their future clinical work. The quality and precision of autopsy reports are greatly impacted by medical students' attitudes and understanding of MLAs. Despite its significance, there have been limited studies delving into medical students' viewpoints on autopsies. Our research was focused on investigating medical students' overall attitudes toward MLAs.

MATERIAL & METHOD

To evaluate the attitude and knowledge of fourth-year medical students, a study was conducted at Ameer-ud-Din Medical College, Lahore, in December 2023. Before the study commenced, written authorisation from the institutional ethics committee and informed consent from the participants were obtained. Medical students who declined to take part or were unavailable on the day of data collection were not included in the study. The questionnaire was prepared after going through the literature. The questionnaire had multiple questions regarding the practice of autopsies, knowledge of the procedures, attitudes, and perceptions towards postmortem examinations. The questionnaire was distributed to students through an online Google form, with an assurance of anonymity. The analysis focused on various aspects, including the relevance and significance of autopsies in medical practice and education, distaste for the procedure, the necessity of attending autopsies as part of medical education, and thoughts on autopsies conducted on oneself or family members. A total of 91 students took part in the study.

RESULTS

This cross-sectional study analysed responses from 91 fourth-year medical students at Ameer-ud-Din Medical College, Lahore. Among the participants, 48 (52.7%) were males, and 43 (47.3%) were females.

Awareness and Perception of Autopsy:

Most students, 75 (82.4%), were aware that MLAs are mandatory in cases of unnatural, sudden, unexpected, and suspicious deaths. Seventy-seven students (84.6%) believed that autopsies are performed to determine the cause of death, whereas 27 students (29.7%) viewed autopsies as merely a legal formality. Thirty-nine students (42.9%) felt that autopsies are an inconvenience for the relatives of the deceased.

Concerns and Comfort Levels:

Regarding their initial exposure to postmortem examinations, 81 students (89.0%) reported feeling uncomfortable during their first experience.

Knowledge and Education:

Regarding knowledge about autopsy procedures, 83 students (91.2%) were unaware of the required documents for conducting an MLA. However, 75 students (82.4%) knew external and internal examinations should be performed during an MLA. Additionally, 67 students (73.6%) understood the necessity of removing viscera for histopathological and toxicological analysis in MLAs. Furthermore, 87 students (95.6%) knew about using 10% of formalin to preserve tissues for toxicological study.

Educational Resources and Preferences:

Most students, 88 (96.7%), learned about postmortem examinations from their medical curricula. Eighty students (87.9%) expressed needing more opportunities to observe postmortem examinations during their studies. Eighty-four students (92.3%) believed that the current methods of postmortem examination are disrespectful to the human body. Sixty-nine students (75.8%) suggested replacing primitive instruments like chisels, hammers, and saws with modern oscillatory tools. Despite the discomfort, 66 students (72.5%) agreed that autopsies are an important educational tool and felt they learned significantly from participating in or observing them. Moreover, 86 students (94.5%) preferred virtual autopsies over conventional ones.

Specialisation and Competence:

Only seven students (7.7%) expressed interest in specialising in forensic medicine. A majority, 73 students (80.2%), felt incapable of performing an independent postmortem examination after becoming physicians. Eighty-three students (91.2%) supported having specific casualty postings for handling all ML cases.

DISCUSSION

The autopsy is crucial for accurately determining the cause and manner of death, making it a vital component of medical education for centuries. However, modern medicine's growing emphasis has marginalised autopsies in the regular medical curriculum, which has raised concerns among educators and students. Autopsies provide valuable context for students to understand pathology in clinical settings. Various factors influence learning, including prior life experiences, cultural or religious beliefs, and psychological predispositions, which are beyond educators' control. Understanding and addressing these factors could help shape the attitudes of future practitioners.

The knowledge of MLA will broaden the students' perspective and facilitate the legal system in delivering quick justice in criminal cases. In our study, many of the students identified that an autopsy is mandatory in all circumstances of suspected death. This compares favourably with the study conducted in the US (7), India (5, 8) and Pakistan (9, 10). However, our study revealed a lack of understanding regarding the documentation required in MLAs, highlighting the need for further education. Increasing awareness and knowledge of MLAs can lead to more accurate and efficient investigations in criminal cases.

The student's emotional effects are a significant but neglected attribute of medical training. The dissection of a dead body is not solely a technical exercise; it elevates emotions concerning human

dignity and mortality. Most of the students (89.0%) were uncomfortable at first sight of postmortem examination in our study, which compares favourably with other studies conducted in India (5, 11, 12) but in contrast to studies conducted in Pakistan (9, 10) that reported a much higher (63.3%) (52%) level of comfortability while observing the first autopsy. These findings suggest that cultural and societal norms may play a role in how medical students perceive and experience postmortem examinations. It is important for medical educators to provide support and guidance to students as they navigate these emotional challenges during their training.

In the present study, most students (72.5%) agreed that an autopsy is essential for medical education. This relates positively to the studies conducted in Brazil (13), the US (14), India (15, 16), Turkey (17), and Pakistan (9, 10). Despite the growth of electronic, print, mass media, and internet availability, most students (96.7%) attain knowledge and information regarding autopsy from their medical syllabi, similar to the study conducted in India (5, 12). These findings suggest that medical education plays a crucial role in shaping students' understanding of autopsies, regardless of technological advancements in information dissemination. They highlight the importance of integrating autopsy education into medical curricula to ensure comprehensive learning experiences for future healthcare professionals.

The mortuaries in Pakistan are generally outdated and fail to spark the interest of students in observing autopsies. The indifferent approach of the mortuary staff, including the autopsy surgeons, and the outdated techniques, equipment, and procedures serve as obstacles to students' engagement with the subject. The majority of the students (92.3%) suggested the need for the replacement of primitive instruments with modern ones, which compares favourably with the studies of (5) and (12). Most of the students (91.2%) thought of having casualty posting for Forensic Medicine for medico-legal cases, which is similar to the studies by (5) and (11).

Only (7.7%) of the students showed any interest in pursuing FM as a specialisation that is comparable to the studies conducted in India (8, 18), Pakistan (9) and Turkey (17) but in contrast to study conducted in Pakistan (10) that reported (45%) of students were willing to opt for FM specialisation as a profession in the future. This indicates that there may be varying interest levels in FM specialisation among students in different countries. Further research could explore the factors influencing this disparity across regions.

It is important to minimise the unpleasant parts of an autopsy demonstration in order to encourage attendance and emphasise its value. It could also be beneficial to shape and adjust students' views before they become entrenched in discussing dying and death in medical curricula. This can help students approach the subject more openly and reduce potential discomfort or resistance. By framing the demonstration positively and emphasising its educational benefits, students may be more willing to engage and learn from the experience. Providing a safe and supportive environment during the demonstration can help alleviate any anxiety or apprehension students may have. Encouraging open communication and addressing concerns beforehand can also contribute to a more productive and enriching learning experience.

CONCLUSION

The study reveals that while medical students acknowledge the educational importance of MLAs, significant discomfort and negative perceptions are associated with the process. Most students recognise the importance of autopsies in cases of unnatural death and believe that more exposure to postmortem examinations during their studies would be beneficial. However, the discomfort and perceived disrespectfulness associated with current autopsy practices indicate a need to modernise tools and methods. There is limited interest in specialising in FM, suggesting a potential gap in the curriculum or exposure that needs to be addressed.

To improve the quality of autopsy reports and medical education, it is essential to integrate autopsy training more effectively within the medical curriculum. This could include increased opportunities for students to observe and participate in autopsies, using modern instruments and incorporating virtual autopsies as supplementary educational tools. Addressing emotional and psychological

aspects by preparing students for what to expect and providing support during their initial experiences can also mitigate discomfort.

By modernising autopsy practices and enhancing the educational framework, we can ensure that future medical practitioners are well-prepared to perform MLAs competently and professionally. This will improve the quality of autopsy reports and contribute to the legal system's efficiency in delivering justice in criminal cases.

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Declaration of interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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