

Research Article

Knowledge and attitude of medical students towards autopsy

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ABSTRACT

Background & Objectives: Autopsies are important to medical practice and training due to its significant implications for medical education and legal procedure. Consideration of existing trends in autopsy practice requires insight into the perceptions and attitudes of one of the key stakeholders—especially medical students, who represent the future of medical practice. Thus, this study aims to assess their knowledge and attitudes regarding current autopsy practices.

Material and Methods: This was a cross-sectional descriptive study conducted on MBBS students of Devdaha Medical College. A structured questionnaire was used to collect data on the knowledge and attitude of the students towards autopsy using the 1-5 Likert scale. The data was entered into Excel sheet and represented in percentage and frequency.

Results: A substantial proportion (75.3%, 48%, 61.4%) strongly agreed that autopsies are legal formalities, primarily conducted in unnatural deaths, with removal of viscera for histopathological and toxicological analysis, respectively. Furthermore, 46% and 51.4% acknowledged the importance of both external and internal examinations following legal documentation. However, indecision was noted regarding specific procedural details such as the use of preservatives (38.7% neutral) and issuance of death certificates in “brought dead” cases (32.7% neutral). Most students felt comfortable witnessing autopsy (56%) and the need to observe more (36%). Some perceived autopsy to be disrespectful 40.7% while 40% remained neutral. Many strongly disagreed to parting autopsy demonstrations from the curriculum (34%) and independently doing autopsies (40%). Most of them preferred both traditional and virtual (38.7%) method of autopsy.

Conclusion: Most students viewed autopsies as essential legal procedures and supported continued exposure through both traditional and virtual methods. However, some were unsure

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about specific practices, and opinions were divided on the dignity of the process.

Keywords: Autopsy, KAP study, medical students, Postmortem examination

INTRODUCTION

Autopsies play a critical role in medical practice, with significant implications for medical education and the justice system. They aid in determining the exact cause of death, enhancing understanding of disease processes, validating death certification, and providing reliable data for policymakers and public health initiatives. In the absence of autopsies, the cause of death may be misclassified, vague, or entirely missed in 30–50% of cases [1]. Despite their value, autopsy rates have been declining globally, except in medicolegal contexts. This decline has raised concern, prompting scholarly discussions on the importance of autopsies, the reasons behind their reduced frequency, and strategies to reverse this trend [2].

Understanding current trends in autopsy practice requires insight into the perceptions and attitudes of key stakeholders—especially medical students, who represent the future of medical practice. Although Sir William Osler strongly advocated for the integration of autopsies in both medical education and training, contemporary medical students often have limited exposure to autopsies or medicolegal cases, potentially impacting their knowledge and attitudes [3]. This is further compounded by the lack of uniformity in medical curricula across institutions and challenges such as inadequate faculty, infrastructure, and resources [4,5]. Additionally, religious beliefs, cultural norms, and personal values may contribute to ethical

concerns surrounding autopsies, further shaping student perceptions [6-8].

Given this context, it is essential to evaluate the prevailing knowledge and attitudes of medical students toward autopsies. Existing literature suggests that the educational value of autopsies is underappreciated among students and faculty alike [9-11]. Therefore, there is a need for country-specific evidence to inform policy and curriculum development. Findings from this study will contribute to the growing body of evidence supporting the role of autopsies in medical education and reinforce calls by scientific and academic bodies to promote awareness of their ethical and scientific value [12]. Furthermore, autopsy training—both theoretical and practical—should be systematically incorporated into the forensic medicine curriculum [13].

The experiences and perspectives of medical students are pivotal in shaping the future of autopsy practice. Their attitudes not only reflect potential future engagement with autopsies but also provide critical insights for refining medical education. Thus, this study aims to assess the knowledge and attitudes of medical students regarding current autopsy practices and to identify the factors that influence these attitudes.

MATERIALS AND METHODS

This is an observational exploratory study conducted at Devdaha Medical College and Research Institute; Rupandehi through convenience/ non-probability sampling technique. Approval from the Institutional Review Committee was obtained (Ref. no. 1304/081/082). A semi-structured validated questionnaire was distributed to the MBBS undergraduate medical students enrolled in

the college who were briefed about the study. Informed consent was taken before the data was collected from April-May 2025. The students who were in the clinical sciences and responded during the study period were included in the study while the preclinical students were excluded. The original questionnaire was modified after the author's consent and categorized as knowledge and attitude [14]. The response was rated into Likert scale (1- strongly disagree; 5 - strongly agree) and yes/no/ maybe format. They were self-administered in hard copy. Data was checked for any errors or inconsistencies, then entered into Microsoft Excel sheets. Results are presented as frequency and percentages. Chi square test was performed for categorical data with level of significance set at 0.05 and confidence interval of 95%.

RESULTS

A total of 150 questionnaires were received of which males were 81 (54%) and females

were 69 (46%).

The statement with highest response was seen in autopsy as just a legal formality being strongly agreed 75.3%. On the other hand, none strongly disagreed all statements except the last two. Majority marked neutral on statements on tissues needing preservatives (38.7%) and issuing death certificates (32.7%). (Table 1).

The statement with highest and lowest response was 56% and nil on feeling comfortable during an autopsy, respectively. Strong opposition was seen: being able to conduct autopsy independently (40 %) and deletion of the autopsy education form the medical curriculum. (34%). (Fig: 1)

Most of them accepted both traditional and virtual autopsy 58 (38.7%) while 10 (6.6%) did not respond. The preference for the type of autopsy was different in male and female subjects but the difference was not statistically significant (0.07) (Fig: 2)

Table1. Knowledge of students on autopsy

Statement	Strongly disagree No (%)	Disagree no (%)	Neutral no (%)	Agree no (%)	Strongly agree No (%)	Total (%)
Autopsy is just legal formality	0	1 (0.7 %)	4 (2.7 %)	32 (21.3 %)	113 (75.3 %)	150 (100%)
Autopsy involves external and internal examination of body	0	10 (6.7 %)	16 (10.6 %)	69 (46 %)	55 (36.7 %)	150 (100%)
Medico legal autopsy is done in all sudden unnatural, sudden and suspicious death	0	2 (1.3 %)	9 (6 %)	67 (44.7 %)	72 (48 %)	150 (100%)
Legal documentation has to be done before conducting an autopsy	2 (1.3 %)	0	19 (12.6 %)	77 (51.4%)	52 (34.7 %)	150 (100%)
It is mandatory to take out viscera for histopathological and toxicological analysis	0	0	5 (5.3 %)	53 (53.3 %)	92 (61.4 %)	150 (100%)
Tissues for toxicological analysis need preservatives	4 (2.7 %)	24 (16 %)	58 (38.7 %)	45 (30 %)	19 (12.6 %)	150 (100%)
Death certificate can be given to all brought dead cases	8 (5.4 %)	42 (28 %)	49 (32.7 %)	29 (19.3 %)	22 (14.6 %)	150 (100%)

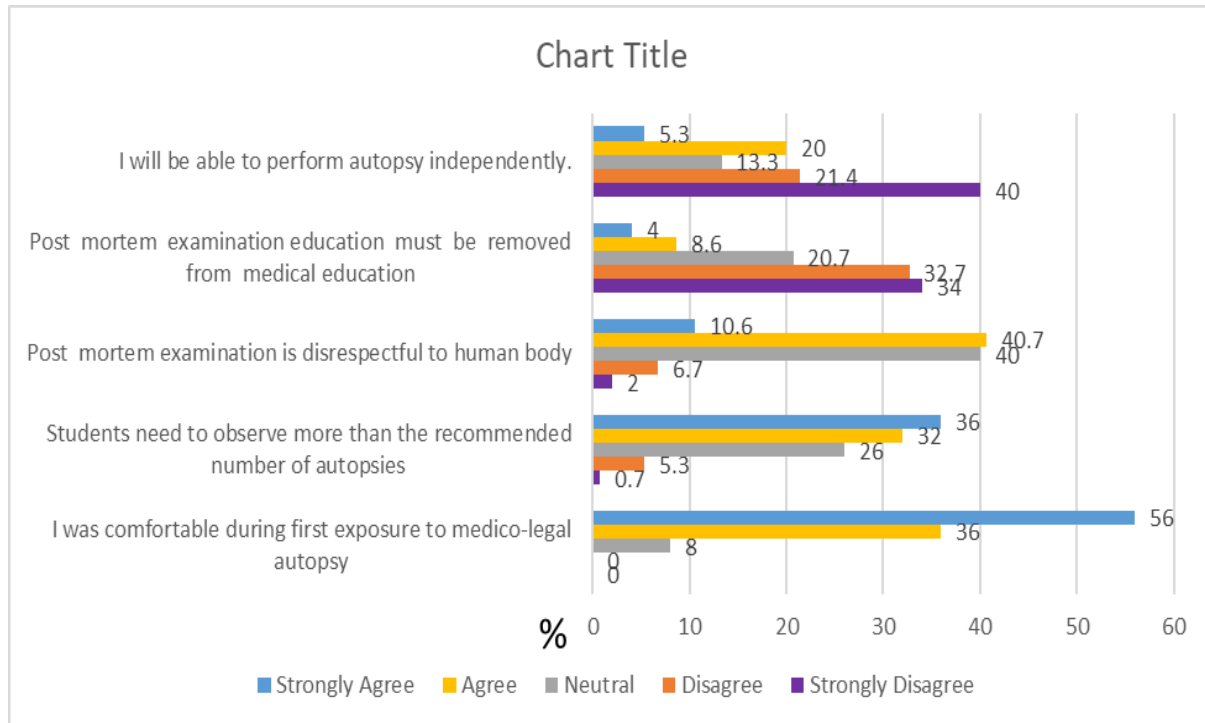


Figure 1: Attitude towards autopsy

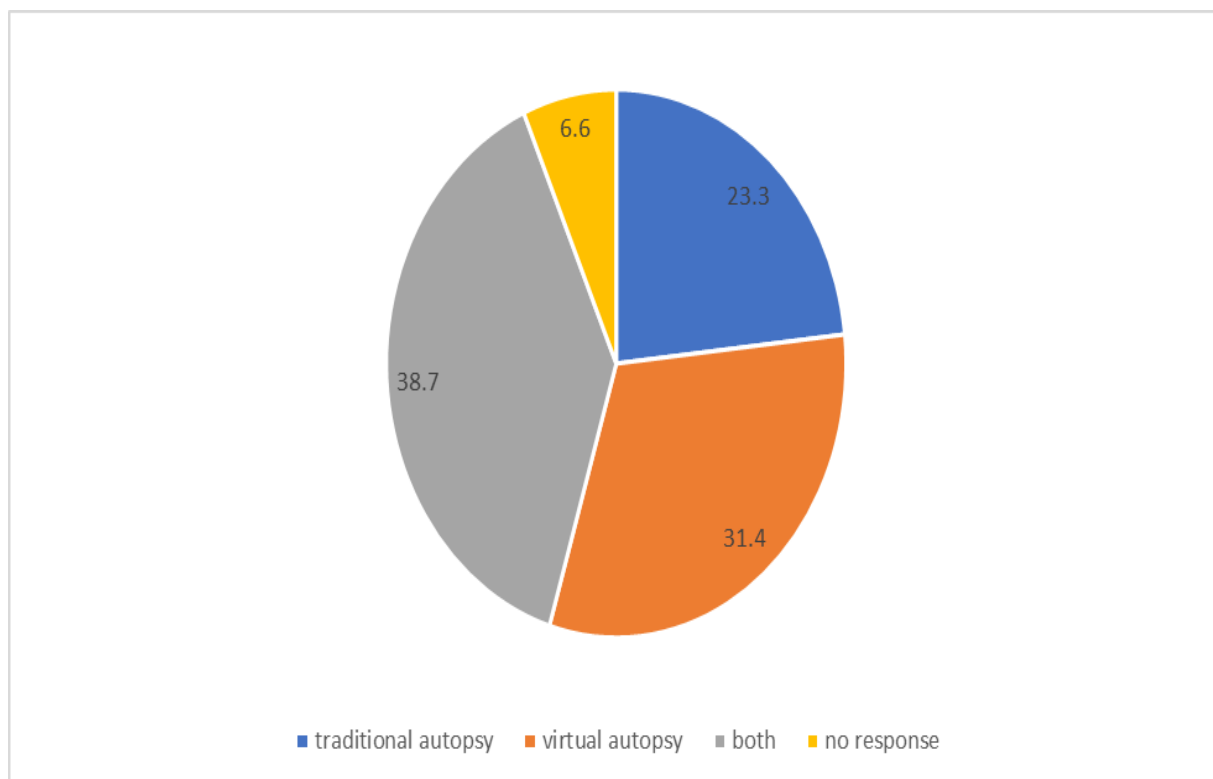


Figure 2: Preferred autopsy type

DISCUSSION

Several studies assessing medical students' responses toward autopsy report study populations similar to ours, ranging from 33 to 250 participants, with response rates varying between 13.4% and 98.1% [14-24]. The high response rate in our study may be attributed to the use of a hard copy approach and engagement within a closely connected academic community.

In terms of gender distribution, more than half of the participants were male in our study which is comparable to several other studies (50.8%, 53.3%, 58%) [14,25,26]. Conversely, female predominance was reported in other studies [16-18,21,22]. Nonetheless, gender was not significantly associated with knowledge of forensic medicine [26]. The mean age of participants across studies was approximately 23.84 ± 1.462 to 24.4 years [17,26].

Most participants demonstrated sound knowledge regarding the purpose and procedures of autopsy. A substantial proportion (75.3%, 48%, 61.4%) strongly agreed that autopsies are legal formalities, primarily conducted in cases of sudden, suspicious, or unnatural deaths, with removal of viscera for histopathological and toxicological analysis, respectively. Furthermore, 46% and 51.4% acknowledged the importance of both external and internal examinations following legal documentation. However, uncertainty was noted regarding specific procedural details such as the use of preservatives (38.7% neutral) and issuance of death certificates in "brought dead" cases (32.7% neutral). Overall, they seemed aware and knowledgeable regarding autopsy.

These findings are consistent with those from other studies, where 65.2% to 85% of

students demonstrated good awareness and knowledge of autopsy procedures [16,25,26]. Nearly two-thirds demonstrated good (65.2%) and moderate (25%) level of knowledge [24,26]. For instance, a study in Nepal found that 97.78% of students correctly identified when an autopsy should be conducted, and 80.0% recognized the need for viscera removal [14]. Similarly, Kakkeri et al. and Jadav et al. reported high levels of awareness regarding indications for medicolegal autopsies and the removal of viscera (78%, 89% and 77%, 95%) respectively [27,28]. Remarkable knowledge was seen among students where majority knew that the medicolegal autopsy is done in all sudden, suspicious & unexpected death (87.96%, 80.6%) and to ascertain "cause of death" (90.05%, 82.2%), respectively [18,23]. 100% stated that the body was to be examined both externally and internally, viscera preservation but only 75% on legal documentation from police [23,24]. Another study also cited 92.3% understood that autopsy was done in all unnatural deaths, it was a legal formality (80.8%) and preceded by the legal documentation (84.6%) and viscera preservation in cases of poisoning (96.2%) [29].

However, contrasting findings were observed in a UK-based study where 48.5% of students lacked awareness of the indications for autopsy requests, despite 85% recognizing its educational importance and 63.0% correlating it with clinical-anatomical understanding [17]. Earlier literature also highlighted gaps in knowledge and poor attitudes towards autopsy [13].

The generally high levels of knowledge may be attributed to the recognition of forensic medicine as fundamental to medical education (94.6%, 96.5%, 85.2%). However, a

significant proportion of students (44.6%) felt the forensic curriculum was inadequate, mirroring findings from other studies where 57% expressed dissatisfaction due to insufficient exposure to forensic medicine [17,26,28,30]. Interestingly, among those with good knowledge, personal ideology was noted to influence their perception of autopsy, underscoring the complex interplay between knowledge, belief systems, and educational exposure [25]. These findings collectively suggest the need for curriculum revision, inclusion of practical components, passion among teachers to enhance students' competency and confidence in handling medicolegal cases [15].

In our study, most students reported feeling comfortable during autopsy demonstrations (56%) and expressed the need to observe more (36%). Attitudes varied regarding whether post-mortem examinations were disrespectful: 40.7% agreed, while 40% remained neutral. A considerable proportion strongly disagreed with removing autopsy demonstrations from the curriculum (34%) and with the assertion that they could independently perform autopsies (40%). Preferences for the mode of autopsy included both traditional and virtual (38.7%), virtual alone (31.4%), and traditional (23.3%), with 6.6% not responding.

Similar findings were reported elsewhere: 42.4% to 68.89% of students felt comfortable witnessing autopsies, though a substantial proportion did not (25.13%–49.9%) [14,16,18,28,29]. Anxiety was reported by 7% of students, yet 20.5% had never witnessed an autopsy [17,29].

Multiple studies emphasize the need to increase autopsy exposure. Between 21.9%, 44.6% and 94.2% of students believed the number of autopsies they observed was

inadequate, and 75.23% to 87% recommended more frequent observations [22,26,27,29]. This implies that either the number of autopsies recommended by the university was inadequate or they had more desire to learn. It was noted that 94% of participants supported retaining autopsy in the curriculum and another study displayed concern over inadequate exposure or hands-on training [11,31].

Despite a general willingness to learn, most students acknowledged their inability to independently perform an autopsy. Passive observation without hands-on experience may limit competency. Nevertheless, significant proportions considered autopsy essential to medical education (96.9%, 85.2%) and performing autopsies (56.66%, 59.1%, 63%, 70%, 98.1%) [17,26,27,29].

However, a German study noted that 70% of students were capable of conducting external examinations [32], but elsewhere only 35.8% had witnessed an autopsy despite high willingness (88%) [25]. This highlights the need for strategically planned autopsy demonstrations integrated within the curriculum to promote skill development and foster a positive attitude. Notably, 77.2% of students stated that autopsy exposure would influence their choice to pursue forensic medicine [13,16].

Attitudes regarding the dignity of the deceased varied. While 96.2% of students in one study did not view autopsy as disrespectful, others reported conflicting beliefs: 85.8% and 7.5% did not find it disrespectful, 67.4% and 26.2% believed it caused disfigurement, and small proportions (2.2%–3.7%) believed it distressed the deceased's relatives [23-25,28,29]. Moreover, 14.1% of students found autopsy contrary to their expectations, with a few describing it as

brutal [33]. Since some were emotionally and physically disturbed, it becomes essential to be mindful and support them accordingly [15].

In our study, 10 students did not respond to questions on their preferred type of autopsy, possibly implying reluctance to have their own bodies autopsied. This contrasts with previous findings where 34% of students accepted autopsy on themselves and 47% on relatives [21]. Preferences for virtual autopsy were high (92%, 52.22%, 32.7%) in other studies 92%, 52.22% and 32.7%, respectively, possibly due to the lack of modern infrastructure, outdated instruments, and the perceived brutality of traditional autopsies, which can discourage participation and contribute to negative attitudes [14,27,29,31].

CONCLUSION

Students demonstrated good overall knowledge of autopsy, particularly its legal basis, purpose in medicolegal cases, and procedural elements such as viscera removal. However, gaps remained regarding specific practices like preservative use and documentation. These findings are consistent with regional and international literature, though some studies reported significant knowledge deficits and dissatisfaction with forensic medicine education. Attitudes toward autopsy were generally positive, with most students expressing comfort during demonstrations and a desire to observe more. However, a large number felt unprepared to perform autopsies independently, suggesting that observation alone is insufficient for competency. Many students supported the continued inclusion of autopsy in the curriculum and preferred a mix of virtual and traditional formats. Reluctance was seen in a

minority due to perceived disrespect or disfigurement of the body, often influenced by outdated infrastructure and a lack of hands-on training.

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Supplementary Questionnaire

Knowledge

1. Autopsy is just legal formality
2. Autopsy involves external and internal examination of body
3. Medico legal autopsy is done in all unnatural, sudden and suspicious death
4. Legal measures have to be met before conducting an autopsy
5. It is mandatory to take out viscera for histopathological and toxicological analysis
6. Tissues for toxicological analysis need preservatives
7. Death certificate can be given to all brought dead cases

Attitude

8. I will you be able to perform autopsy independently.

9. Post mortem examination education must be removed from medical education
10. Post mortem examination is disrespectful to human body
11. Students need to observe more than the recommended number of autopsies
12. I was comfortable during first exposure to medico-legal autopsy

I prefer traditional/ virtual/both autopsy

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