

# KNOWLEDGE AND ATTITUDES OF MEDICAL STUDENTS TOWARDS POSTMORTEM EXAMINATION AND ITS USEFULNESS IN MEDICAL EDUCATION

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## ABSTRACT

Background: It is very important that the emotions of the students have to be considered while training medical students but unfortunately it is bit neglected since the inception of medical curriculum. Autopsy is considered as mere a technical exercise but it gives a lot of learning opportunities with lot of emotional aspects attached to it. Objective: To study the knowledge and attitude of medical students towards post mortem examination and its usefulness in medical education. Methods: An open type, pretested, self-administered questionnaire was prepared and data collected from 320 (182 girls & 138 boys) medical students within age group of 19-25 years. Results: The majority of medical students considered medical curriculum as the source of information and knowledge about postmortem examination (85.6%). On the first exposure only 16.4% were comfortable and others have varied reactions. About 89.1% of the students like to witness an autopsy in mortuary/autopsy room exclusively other than video and photo series. Interestingly 50% of the students felt that an undergraduate should perform autopsies during their internship but under supervision. Almost 76.6% of them liked to witness the autopsy procedures in small groups only. It was observed that the students wished to have postmortem demonstrations as mandatory exercises in the medical curriculum. Conclusion: Autopsy or postmortem examinations are being used since centuries to understand the cause of death. Those findings have contributed immensely to the advancement of modern medical knowledge. Even in present ultramodern medical education scenario, the autopsies have not lost their importance and usefulness. Students find it very useful to understand disease processes and medico legal issues involved in the death, like cause of death and time since death etc. It was observed in the present study that students wanted to have postmortem demonstrations as mandatory exercises in the medical curriculum.

Key Words: Knowledge, Attitude, Autopsy, Medical Curriculum.

## INTRODUCTION

Examination of the dead has been an essential and central element to medical education in training medical students for centuries. At the beginning of the 20th century, examination of patients after death was fundamental in the education of medical students. Virchow and Osler used autopsy in the nineteenth century to

understand the pathology of fatal diseases such as endocarditis and pulmonary

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embolism by correlating pre and postmortem findings. Autopsy findings have provided the foundation for much of modern medical knowledge.<sup>1</sup>

The autopsy is beneficial in determining, the cause of death, time of death, validity of therapeutic modalities, potential medico legal issues surrounding death and providing data on diseases and injuries. The autopsy session allows three dimensional revision of anatomy and provide opportunities to discuss subjects like death certification. The study promotes problem solving skills essential to medical practice. It helps to understand the students to develop appropriate attitudes towards causes of death and prepares them to come to terms with the fact that many of their patients may die and that this is also a part of medical practice.<sup>2</sup>

Despite the benefits as described to postmortem examination, its practice in medical education has declined. Besides reformation of curriculum, technological advancements such as videos & CD-ROMs made a different method of exposure on autopsy. Prevailing legislation, legal, bureaucratic, financial, political and religious reasons have all contributed to the declining use of the autopsy as a teaching tool.<sup>3,4</sup>

Even though the literature indicates that forensic autopsy rates worldwide, remain fairly constant; there is little mention of their use in undergraduate medical training. But what is clear is that students no longer attend postmortems regularly and get qualified without even entering a mortuary.<sup>5,6</sup> In many institutions, most medical students graduate without entering the autopsy suit.

The reactions of students to autopsy encompass psychological, emotional and

physical components. It might evoke strong emotional reactions in medical students that could counteract the intended learning goals. Many medical educators still feel that the post mortem examination has great benefit in medical training<sup>7</sup> for the reasons outlined above and they support the MCI regulation that every medical student must witness at least 10 autopsies.

## METHODOLOGY

**Study design:** Cross sectional observational questionnaire study.

**Study setting:** A tertiary teaching hospital.

**Selection of Participants:** A total of 320 (138 boys and 182 girls) MBBS students with age group between 19-27 years and studying in 4th semester to 9th semester and CRR1 from a medical colleges affiliated to a tertiary teaching hospital were asked to fill up a 24 itemed, self-administered, pretested, multiple choice questionnaire after a brief introduction of the proposed survey. These students had been exposed to both dissection and medico-legal post mortem examinations during their curriculum were selected for this study. They were asked to respond each question anonymously. The survey consisted of several questions relating to their views on autopsy practice, the knowledge of the procedure, attitude and perception towards autopsy. The questionnaire was divided into two major groups: a) concerning knowledge about the postmortem examination and b) on attitude towards postmortem examination. The study proposal was submitted to the Institutional Ethical committee and started after getting the ethical clearance from the Institutional Ethical Committee.

**Statistical Analysis:** The data were entered in Microsoft Excel spread sheet and

reported to SPSS software version 21 and analyzed.

### OBSERVATIONS

As shown in the Figure 1, female students comprised of 56.9% (182) and male student's participation was 43.1% (138). This study revealed that of the students 97.2% expressed that postmortem was mandatory for the medical education, 98.4% accepted for taking out of viscera for examination. Among the study population, 53.4% of the students opined that the postmortem examination was disfiguring the body and 25.6% felt that the postmortem examination was disrespect to the human body. About 89.1% of the students had knowledge that the postmortem procedure involved examination of the body externally and internally and postmortem examination involved taking out visceral organs for toxicological, histopathological and other examinations related to medico-legal requirements. However, 3% of the students revealed that they were unaware that the medico-legal postmortem examination was mandatory in all unnatural and sudden, unexpected and suspicious death cases.

In this study 81.9% of the participants expressed that students should view more number of postmortem examinations. 79.4% found viewing autopsy a personally useful and rewarding experience. Among the participants, 66.6% accepted that without viewing autopsies, their ability to understand the subject of forensic medicine would be inadequate to enlighten the knowledge of medical science. About 87.2% students were against scrapping of autopsy from medical education and 86.3% of them rather think that autopsy is a valuable tool of medical education. 77.5% justified the fact that mandatory witnessing of autopsies in the current medical curriculum.

Majority of students (i.e. 87.2%) stated that if given a chance, they would always choose to watch postmortem examination. 85% said that they did not have a personal distaste for viewing autopsy and it was not an unpleasant experience for them. 56.3% wished to have postmortem examination on self/relative whenever required and warranted. However, 43.8% denied this statement. Also only 25.9% of the students suggested that they had suffered from stress during autopsy.

Most of the students confirmed that postmortem examination is done to know the causes of death (85%). Only 10.6% of the students were very uncomfortable on the first exposure to post mortem examination and 48.4% felt slightly comfortable and only 16.4% were comfortable. Majority of them (85.6%) considered medical curriculum as the source of information and knowledge about postmortem examination. And 70% of them considered that going to view autopsies in another institution was not a waste of time and their study schedule did not suffer. About 53.1% considered that live demo was best and moreover 48.4% disagreed the fact that, they could learn this topic by just reading books & without viewing the actual autopsy or its videos. A majority of the participants (76.6%) liked to witness the autopsy procedures in small groups only instead of being in large group or studying alone. About 89.1% of the students liked to witness an autopsy in mortuary/autopsy room only. Interestingly 50% of the students reported that an undergraduate should perform autopsies during their internship but under supervision.

### DISCUSSION

Autopsy plays an important role in establishing the cause, manner and time since death in both medico legal and

clinical scenarios. By this, it also allows confirmation, clarification, and correction of an ante mortem diagnosis. This plays a greater role in protecting public health and statistics. There is a decline in the pathological autopsies worldwide due to many factors like cultural, emotional and religious beliefs. In US autopsy rates were dropped from 60 to 41% in 1960, 22% in 1970, and below 10% currently.<sup>9,10</sup>

Some countries like China have removed the autopsies from their medical curriculum to adopt modern technologies. But in most of the countries, it is very much part of medical education and as a teaching methodology. In our study, students felt that without autopsy demonstration their understanding of various medical subjects would have been hampered seriously. Majority of the students are aware of the legal formalities of autopsies for both hospital and medico legal. They are also aware of basics of autopsy techniques, dissection, viscera preservation for chemical analysis and histopathology<sup>6</sup>. They also appreciated the mandatory witnessing of autopsies by the curriculum. These observations are consistent with the other studies.<sup>6,11,12</sup> Most of them felt that live demo in the mortuary in small groups are more useful than watching the videos and photographs.

Only 56.3% wished to have autopsies on them and their relatives in comparison to studies where more than 90% wished to have postmortem on self and their relatives if needed. This may be due to various religious and cultural beliefs that are different from the other parts of the country. Majority (97%) opined that witnessing autopsy demonstration should not be scrapped from the medical education which is also observed.<sup>13,14</sup>

About 57% felt that autopsy will disfigure the human body. It may be due to the autopsy techniques employed, instruments used, and how the bodies packed, etc. This may be due to shortage of funds and inadequate infrastructure facilities available in the mortuaries in our country. But if our mortuaries are improved with good infrastructure and well trained morgue assistants (morticians), this attitude can also be changed.<sup>15,17</sup>

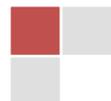
The present study showed that how much emotional reactions an autopsy demonstration could evoke in medical students and yet clearly demonstrated by the observations that autopsy demo was one of the most valuable tools in training medical students. It must be appreciated and given its deserved place in the medical curriculum so as to have positive implications on medical and legal scenarios of our country.

## CONCLUSION

Autopsy or postmortem examinations are being used since centuries to understand the basis of fatal diseases. Those findings have contributed immensely to the advancement of modern medical knowledge. Even in present ultramodern medical education scenario, the autopsies have not lost their importance and usefulness. Students find them as very useful to understand disease processes and medico legal issues surrounding the death like cause of death, time since death etc., it is observed in the present study that students want to have postmortem demonstrations as mandatory exercises in the medical curriculum.

## SUGGESTIONS

Similar studies must be conducted in different regions of the country so as to



assess the current scenario. As majority of the autopsy work is done by medical officers with basic medical qualification, who have seen autopsies only during their II MBBS, after graduation they do not receive any training on autopsy, hence the quality of autopsy work is suffering in our country. There is need for doctors who are exposed to autopsy works. So it is suggested that during internship, posting for a period of 15 days to Forensic Medicine department should be made mandatory where in the interns can perform autopsies under supervision. This will make them confident to conduct the autopsies when

they come out from the medical colleges. The reorientation training for Medical students on autopsy also will improve the knowledge and quality of autopsy.

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#### REFERENCES

1. Inanici MA, Sozen MS, Alkan N. (2000) The attitudes of Medical students to autopsy. *For Sci Int*;113:303-8.
2. Brooks JP, Dempsey J. (1991) How can hospital autopsy rates be increased? *Arch Pathol Lab Med*;115:1107-11.
3. Cottreau C, McIntyre L, Favara BE. (1989) Professional attitudes toward the autopsy: a survey of clinicians and pathologists. *Am J Clinpathol*; 92:673-6.
4. Berlin A, Wagstaff R, Bhopal R, Spenser J. (1994) Postmortem examinations: General practitioners' knowledge, behavior and attitudes. *BMJ*;308:1080-1.
5. Hill RB, Anderson RE. (1988) The autopsy medical practice and public policy. Boston, Butterworths.
6. Verma SK. (1999) Teaching students the value of autopsies. *Acad Med*;74: 855-7.
7. Horowitz RE, Naritoku WY. (2007) The autopsy as a performance measure and teaching tool. *Hum Pathol*;38:688-95.
8. Talmon G. (2010)The use of autopsy in pre clinical medical education: a survey of pathology educators. *Arch Pathol Lab Med*;134:1047-53.
9. Roulson J, Benbow EW, Hasleton PS. (2005)Discrepancies between clinical and autopsy diagnosis and the value of post mortem histology: A meta analysis and review. *Histopathol*;47:551-9.
10. Haselton MG, Buss DM, Oubaid V, Angleitner A. (2005)Sex, lies and strategic interference: the psychology of deception between the sexes. *Person Soc psycho Bull*;31:3-23.
11. Conran P, Nowacek G, Adams T, Smith L. (1996) Medical students' attitudes toward the autopsy. *Acad Med*; 71:681-3.
12. Khoo, Joon J. (2010)Third-Year Medical Students' views on Autopsies. *Pathol*;42:71-3.
13. Jadeep CJ, Bhasker NP, Kalpesh AS, Rakesh NT. (2013) Knowledge and attitudes of medical student experiences of autopsies in Ahmedabad City. *J Ind Acad Forens Med*;35:26-30.

14. Ekanem VJ, Akhigbe KO. (2006) Attitudes of Nigerian Medical students towards Autopsy. *Turk J Med Sci*;36:51-6.
15. Bharathi M, Loo C, Venkatesan M, Sharma P, Virender K, Chhoker SK, Kaluba D (2015). Current status of perceptions towards autopsy and post-mortem examination among medical undergraduate students. *O Int J Med Soc Sci.*;1(3):66-71.
16. Bagga I., Goyal V., Singh A., Chawla H., Goel S., & Sharma, S. (2017). Knowledge towards post-mortem examination and reasons for not specialising in morbid anatomy: study among medical undergraduate students. *International Journal of Research in Medical Sciences*; 4(7), 2792-2795.
17. Goel S, Chikkara P, Chhoker VK, Singh A, Bhardwaj A, Rajesh DR, Singh NK (2014). Perceptions of Relatives' towards Medico-Legal Investigation and Forensic Autopsy: A Survey from Rural Haryana. *Journal of Indian Academy of Forensic Medicine*; 36(4): 371-373.

Table1: Knowledge and perception regarding autopsy

S/N	Questionnaire	Yes (%)	No (%)	Do not know (%)
1	Medico-legal postmortem examination is mandatory in all unnatural and Sudden, unexpected and suspicious death cases	97.2	2.5	3
2	Taking out of viscera for Histopathological examination and toxicological analysis for Medico legal autopsy	98.4	1.6	0
3	Disfigurement of body by postmortem examination	53.4	46.6	0
4	Postmortem examination is disrespect to the human body	25.6	74.4	0
5	Postmortem procedure: Post mortem examination involves examination of the body externally and internally and Post mortem examination involves taking out visceral organs for toxicological, histopathological and other examinations	89.1	8.1	2.8
6	Students should watch more postmortem examination	81.9	13.1	5
7	Wished to have a postmortem examination of self/relative when required	56.3	43.8	0
8	Found viewing autopsy a personally useful and rewarding experience	79.4	10.9	9.7
9	Suffered from stress on viewing autopsy	25.9	74.1	0
10	I have a personal distaste for viewing Autopsy and it was a thoroughly unpleasant experience for me	15	85	0
11	The utility of P.M. examination should be scrapped from medical education	12.8	87.2	0
12	Without viewing autopsies, my ability to understand the subject of forensic medicine would be severely impaired	66.6	33.4	0
13	Do you think autopsy is a valuable tool of medical education?	86.3	4.7	9.1
14	Do you think mandatory witnessing of autopsies in the current medical curriculum is Justified?	77.5	4.7	17.8
15	Given a chance would you choose not to watch P.M examination at all	12.8	87.2	0

Table2: Descriptive attitude towards autopsy practice

S/N	Questionnaire	Results
1	Postmortem examination is a) Done to know the cause of death b) Mere legal formality. c) Harassment to the relatives of the deceased. d) Helpful in reaching the culprit of crime.	85 5.9 0.9 8.1
2	The reaction of the students on the first exposure to postmortem examination. a) Comfortable. b) Slightly uncomfortable. c) Moderately uncomfortable. d) Very uncomfortable. e) Indifferent.	16.6 48.4 20.3 10.6 4.1
3	Source of information and knowledge about Postmortem Examination. a) Medical curriculum b) Magazine and newspaper. c) T.V. d) Friend and relative. e) Internet	85.6 5.9 3.4 0.6 4.4
4	How would like to witness the autopsy procedures? a) In large group b) Small group c) Individual	16.9 76.6 6.6
5	Like to witness autopsy in a) Mortuary/autopsy room b) Video c) Photograph series	89.1 9.7 1.3
6	In my opinion going to view autopsies in another institution is a waste of time and my study schedule suffered. a) Yes b) No c) It was rewarding	7.2 70.6 22.2
7	I can learn this topic by reading books only, without viewing actual autopsy or its videos. a) Yes b) No c) It should be made mandatory for all undergraduates	6.9 48.4 44.7
8	Showing videos of autopsy can be a better alternative than actually viewing autopsies a) Yes b) No c) live demo is best	11.3 46.9 53.1
9	Should an under graduate perform autopsies during internship? a) Yes b) No c) Yes but Under supervision	12.8 37.2 50

Figure 1: Sex wise distribution of the study participants

