

# Perception, Attitude and Knowledge about Medico-Legal Post Mortem Examination: A Study on Para-Clinical Medical Students

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## Abstract

**Background:** Medico-Legal Post-Mortem Examination (MLPME) is generally perceived negatively by the common population including medical students either due to their religious beliefs or due to their pre-conceived fear. Considering the preconceptions, this study is aimed to assess the attitude, perception and knowledge among the para-clinical medical students.

**Materials and methods:** A cross sectional survey was conducted on 200 para-clinical medical students of Chattagram Maa-O-Shishu Hospital Medical College. A pretested questionnaire was used and data analyzed by SPSS22.

**Results:** Among 200 para-clinical medical students, all attended MLPME but 96% not performed. 49% students first knew about this from TV news and from movies. 62.5% didn't think doing MLPME was disrespectful to the body. 95.5% agreed that MLPME was necessary in medical education. 77.5% agreed that medical students should perform MLPME. 75.5% of participants felt that the MLPME they witnessed were not enough. 40.5% students were not confident on independently performing the MLPME after completion of their graduation but 39.5% were not sure. 90.5% thought MLPME necessary for all unnatural deaths. In MLPME, 94.5% knew that both external and internal examinations were done. 96.5% knew preserving viscera was necessary during MLPME on suspected case of poisoning. 77.5% thought that saturated salt solution used as preservative.

**Conclusion:** Overall data analysis indicated that para-clinical medical students had reasonable knowledge and positive attitude on MLPME but they felt their exposure on MLPME insufficient.

**Key words:** Attitude; Knowledge; Medico-legal post mortem examination; Para-clinical medical students; Perception.

## INTRODUCTION

The word post mortem comes from “post” which means “after”, and “mortem” which means “death”<sup>1</sup>. It is also called “autopsy” which comes from the Greek words “Autos” means “self” and “opis” means “view” or “to see for oneself”. The other name of autopsy is necropsy. (“Necros” means “dead body”).<sup>1,2</sup>

Autopsy is a research tool which has been used for more than centuries. This is an extensive and elaborate scientific examination of dead body both externally and internally by naked eye examination, by magnified glass and by dissecting each and every organ with the help of microbiological, pathological, serological examinations and also by chemical analysis to findout or determine the cause,nature,manner, duration after death and as medico-legal evidence.

According to the latest Undergraduate Medical curriculum of Bangladesh, at the end of the course in Forensic Medicine, the undergraduate student will be able to

perform a medico-legal postmortem examination and interpret autopsy findings and results of relevant investigations to logically conclude the cause, manner and time since death. Medico-legal autopsy is generally perceived negatively by the common population including medical students either due to their religious beliefs or due to their pre-conceived fear. This type of study is not done in this region before. Considering the preconceptions, this study is aimed to assess the attitude, perception and knowledge among the medical undergraduate students.

**MATERIALS AND METHODS**

A cross-sectional survey was conducted on 200 para-clinical medical students of Chattagram Maa-O-Shishu Hospital Medical College. Questionnaires related to autopsy were distributed and students were asked to fill them. According to the data obtained was analyzed to know the Perception, attitude and knowledge about medico-legal post mortem examination. Willingness for participating in the survey is recorded before initiating the questionnaire. They were informed that the questionnaire was the part of study and they were free to accept or deny completing it. A self-administered, structured questionnaire written in English related to the medico-legal autopsy was provided to each participant. They were asked to fill them. Received responses were tabulated and statistically analyzed. Results were tabulated, analyzed using SPSS software version-20.0. The obtained data was analyzed to know the perception, attitude and knowledge about medico-legal post mortem examination.

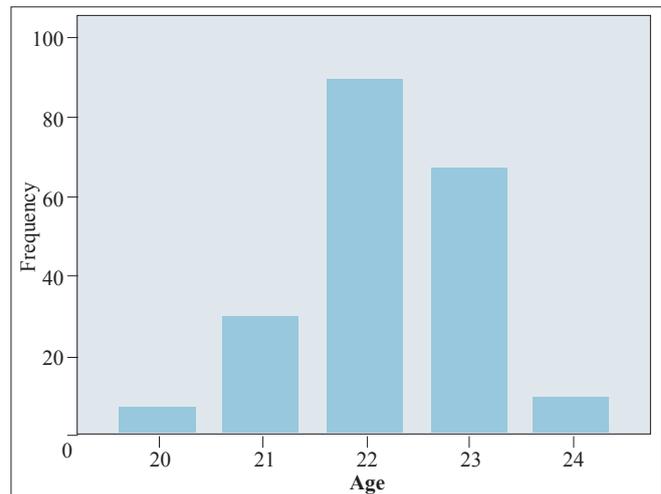
**RESULTS**

Results are analyzed from the structured questionnaire. The questionnaire was framed in four parts. First part contained the demographic data. Second, third and fourth part are constructed to assess the perception, attitude and knowledge on medico-legal examination respectively.

**Table I** Demographic profile of respondents

Variable	Answer	Response
Age	3rd and 4th years	
Sex	Male	38.5%
	Female	61.5%
Religion	Islam	84%
	Hinduism	16%
Phase	Phase II	52.5%
	Phase III	47.5 %
Post mortem examination Attended	Yes	100%
	No	00%
Post mortem examination Performed	Yes	4%
	No	96%

Out of total 200 responses from the medical students, 52.5% students were of phase II level and 47.5% were of phase III level. The female students were predominant (61.5%) and religion of majority were Islam (84%). 100% participants attended postmortem examination but 96% did not perform the medico-legal postmortem examination.



**Figure 1** Age distribution of the students.

**Table II** Question wise perception of students

QUESTION	Answer Variables	Response
	Newspaper	15.5%
From where did you first know about Post mortem examination?	TV news	24.5%
	Movies	24.5%
	Family / Friend/ Other	16.0%
	Medical Books	15%
	Internet	4%
Post mortem examination is a disrespect to a dead body?	Agree	8%
	No opinion	29.5%
	Disagree	62.5%
Post mortem examination is a harassment to the victim’s family?	Agree	9%
	No opinion	27%
	Disagree	64%
The Post mortem examination is against religious rule?	Agree	19.5%
	No opinion	43%
	Disagree	37.5%
The expenses of post mortem examination is incurred upon	Government	90%
	Police	1.5%
	Hospital Authority	3%
	Victims Family	5.5%

**Table III** Question wise attitude of students

QUESTION	Answer Variables	Response
Medical students should watch post mortem examination as their part of course curriculum	Agree	98%
	No opinion	1%
	Disagree	1%
Medical students should perform post mortem examination as their part of course curriculum	Agree	77.5%
	No opinion	6.5%
	Disagree	16%
Are you confident on independently performing the medico-legal post mortem examination after completion of their graduation?	Yes	20%
	No	40.5%
	Not sure	39.5%

QUESTION	Answer Variables	Response
The post mortem examinations that you have witnessed / performed according to framed curriculum schedules are not enough to be confident on it.	Yes	75.5%
	No	10%
While witnessing first autopsy, your feelings was –	Not sure	14.5%
	Excited	20.5%
Are you interested to build-up your career in Forensic Medicine after completion of MBBS?	Fear	15.5%
	Nervous	11%
	Curious	32%
	Uncomfortable	21%
Are you interested to build-up your career in Forensic Medicine after completion of MBBS?	Yes	2.5%
	No	80%
	Not sure	17.5%

**Table IV** Question wise knowledge of students

QUESTION	Answer Variables	Response
Post mortem examination is required for all death cases	Yes	2%
	No	95.5%
	Donot know	2.5%
Post mortem examination is mandatory in all unnatural death cases	Yes	90.5%
	No	5.5%
	Donot know	4%
Pre requisites of a post mortem examination are –	Consent	3.5%
	Court Order	3%
	Inquest	18.5%
	Challan	6.5%
	Inquest and challan	52%
	All	16.5%
Consent from family member(s) is required in a medico-legal post mortem examination	Yes	44.5%
	No	49.5%
	Donot know	5.5%
Both external and internal examinations are done in post mortem examination	Yes	94.5%
	No	2.5%
	Donot know	3%
Preserving viscera is necessary during post mortem examination on suspected case of poison	Yes	96.5%
	No	2%
	Donot know	1%
During post mortem examination, for Chemical analysis, the organs preserved are –	Brain	5%
	Lungs	0.5%
	Heart	1%
	Stomach	5.5%
	Intestine	1.5%
	Stomach, Liver, Kidney	53.5%
	All	33%
The preservatives used for collection of viscera samples during post mortem examination are?	Alcohol, Formalin, Saturated salt solution	20.5%
	Saturated salt solution	77.5%
	Savlon	0.5%
	Formalin	1.5%
After post mortem examination, the specimens taken for chemical analysis are sent to –	Pathology department	17%
	Police	4.5%
	Govt. Chemical examination lab	77%
	Unknown	1%

## DISCUSSION

Autopsy is the process which is required to establish the exact cause of death in unnatural cases. It determines the mode of death and manner of death.<sup>3</sup> The knowledge of medico-legal autopsy will broaden the students' perceptive and will help the legal system in delivering quick justice in unnatural deaths.<sup>4</sup> The first medico-legal autopsy was done by Bartolomio De Varignain of Italy in 1302.<sup>5</sup> In this Subcontinent, the first medico-legal autopsy in India was performed by Dr Edward Bulkley on 28th August 1693.<sup>5</sup> Mainly autopsies are of three types: medico-legal, pathological or clinical or hospital and anatomical.<sup>6</sup>

On the perception-based front, 64% answered that PM was not doing harassment to the victims' family, 62.5% students did not think doing PME was disrespectful to the body. In Ahmad M study, 98(85.22%) answered that post mortem was neither harassment to victim's relative nor a disrespect to a dead body.<sup>7</sup> In Karma Mingur Diki Bhutia study, 85.86% of the students did not think that postmortem examination was disrespectful in any way.<sup>8</sup> In our study only 9% students opted that post mortem examination was harassment to the relatives of the deceased and thought as a disrespect to the dead body which was found nearly similar with the study done by Jon Joon (17%) and Ahmad M (17%). 90% students thought that expense of PME was incurred upon government.<sup>9,7</sup> In Karma Mingur Diki Bhutia study, 39.27% believed that the expenses incurred during medico-legal autopsy was borne by the government/teaching hospital.<sup>8</sup> In our study, only 37.5% of the students did not feel that autopsy was against religious belief but 43% provided no opinion. In Karma Mingur Diki Bhutia study, majority (60.73%) of the students did not feel that autopsy was against religious belief.<sup>8</sup> Regarding the source of information for PM, students first knew about it from TV news but another 24.5% knew from movies. In Karma Mingur Diki Bhutia study, the source of information for most of the students (77.49%) were from Lecture & Books similar to study done in Haryana.<sup>8,10</sup> The attitude of the students was mostly positive towards medico-legal autopsy, similar to the studies done in Uttar Pradesh, Telangana, Haryana and Ahmedabad, Sikkim.<sup>11,12,13,10,8</sup>

On the attitude-based front, in present study, majority of the students (95.5%) agreed that autopsy was necessary in medical education. This compares favourably with the study of Botega et al. in Brazil and a study by Conran et al. in Ohio, USA, where 85% of the students also said that autopsy should be mandatory for all medical students.<sup>14,15</sup> In this study most of the students (98%) answered that observation of post mortem examination should be part of MBBS course curriculum. This result coincides with the previous study done by Verma SK et al where students opted for compulsory attendance of post mortem examination as a part of undergraduate curriculum.<sup>16</sup> The previous study by Botega et al. Brazil and Conran et al. in Ohio, USA also showed that more than 85% students provided opinion in favour of mandatory autopsy observation.<sup>14,15</sup>

Joon Joon et al. in the study at Malaysia also showed that 77.5% students recommended for making autopsy session compulsory during undergraduate medical training.<sup>9</sup> Victor James et al in his study also showed that 88% students recommended for post mortem observation during their study period.<sup>17</sup> In our study, 75.5% student thought that PME that they had witnessed according to curriculum schedules were not enough to be confident on it. In study of Vignesh S et al. majority of the respondents were of the opinion that the number of autopsies witnessed were enough while a few recommended for more numbers of autopsies to be witnessed by medical students.<sup>4</sup> In the study at Nigeria by Ekanem and Akhigbe, where 57% of the students stated that the number of autopsies they watched was enough, and a total of 176 (74%) students would recommend medical students to watch more autopsies.<sup>17</sup> In our study, only 40.5% were confident on perform in MLE independently after completion of their graduation. In Karma Mingur Diki Bhutia study, only 39.79% were confident on performing the medico-legal autopsy independently after completion of their graduation.<sup>8</sup> On assessing the attitude of the students towards demonstration of medico-legal autopsy, we observed that 32% of the students felt curious while witnessing autopsy, 21% were uncomfortable. In Karma Mingur Diki Bhutia study, it was observed that 27.75% students were comfortable, 25.13% were uncomfortable, 17.80% were indifferent while 29.32% were not yet exposed (due to online teaching).<sup>8</sup>

On the knowledge-based front, we found that most of the students (77%) had idea about the place for chemical analysis and also 77.5% thought that saturated salt solution was used for preservation of viscera. In the study of Ahmad M et al. most of the students, 56.52% had wrong idea about the place for chemical analysis and 60.87% thought that formalin was used for preservation of viscera.<sup>7</sup> In our study, most respondents (94.5%) knew that both external and internal examination were done in MLPME. In Vignesh S study, most of the students (98.1%) felt that medical students should know that both external and internal examinations were done in autopsies. The findings were in accordance and favorable with the studies of other authors in the past,<sup>18,15,19</sup> Majority (90.5%) opted for requirement of postmortem examination in all unnatural death

cases. In Ahmad M study, majority, 93.91% opted for requirement of post mortem examination in all unnatural death cases.<sup>7</sup> In Karma Mingur Diki Bhutia study, 87.96% of the students knew that the medico-legal autopsy was unavoidable in all sudden, suspicious & unexpected death which was similar to study done in Ahmedabad and Haryana.<sup>13,10</sup> In this study, 52.5% said that inquest report and challan both were needed for autopsies. 49.5% knew that consent from family member was not required. In Karma Mingur Diki Bhutia study, majority of the students chosen inquest form as pre-requisite for medico-legal autopsy 53.93% & only 32.98% knew that the consent of family members was not required in a medico-legal autopsy.<sup>8</sup> Similar findings were also observed in a study conducted in Haryana.<sup>10</sup> 96.5% knew that preserving viscera was necessary during autopsy on suspected case of poisoning. 53.5% thought that stomach, intestine, liver, kidneys were preserved for chemical analysis. In Vignesh S study, Majority of students (96.2%) knew preserving viscera was necessary during autopsy on a suspected case of poisoning.<sup>4</sup>

## CONCLUSION

Overall, in our study, data analysis showed that medical students had a reasonable knowledge, and positive attitude towards medico-legal autopsy but they felt the autopsies that they had witnessed were not enough. So, this study was to encourage the medical students to witness more autopsies and actively participate in autopsies, which would help them in finding the cause of death as a medical professional.

## RECOMMENDATIONS

We recommend to revise the Forensic Medicine curriculum by increasing the teaching and practical hours of autopsy so that the students will be able to make sufficient observations and can be confident to come into the conclusion in medico-legal cases.

We also recommend to increase number of morgues for medico-legal autopsy in Chattogram.

## DISCLOSURE

All the author declared no competing interest.

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