

Perception of Medical students about Forensic Medicine subject- A survey based study at Govt. Medical Institute situated in hilly region of Uttarakhand State

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ABSTRACT

The main aim of teaching Forensic Medicine in our nation to develop doctors who are knowledgeable and well aware about medico-legal Responsibilities in the practice of medicine. Forensic medicine and toxicology are required to be taught to MBBS undergraduate during their second professional year, which lasts 18 months in India. The study was done among a total of 352 MBBS undergraduates of VCSGGIMS & R Srinagar Pauri Garhwal Uttarakhand after dividing them in to three groups. The Students were asked to express their responses on a scale with grading from 1 to 5 on a questionnaire for survey. 84.9% students strongly or somewhat had agreed that the subject has utility after MBBS course for delivering health services especially in Government Health centre and While 5.1% strongly or somewhat had disagreed with it.

Keywords: Medico-legal investigation, perception, interest, scope, questionnaire.

INTRODUCTION

Forensic medicine and toxicology are required to be taught to MBBS undergraduate during their second professional year, which lasts 18 months in India. The subject teaches MBBS undergraduate about the legal obligations of doctor (Medical jurisprudence) as well as the legal aspects of poison (Forensic Toxicology) and legal aspects of medicine. The main aim of teaching Forensic Medicine in our nation to develop doctors who are knowledgeable and well aware about medico-legal Responsibilities in the practice of medicine.¹

It is concerning since the way forensic medicine is currently taught to students in

India is unable to adequately impart clinical knowledge in managing medico-legal issues.²

According to section 39 of the Indian Criminal Procedure Code, anyone who finds that someone has committed a crime involving the human body must inform the appropriate law enforcement agency, such as the police or the magistrate.³

Being able to treat patients who are suffering as a result of a crime committed by anyone, exposes a medical professional to such knowledge regarding the commission of a crime on a regular basis. A medical professional is legally required to gather all relevant evidence from the body of patients

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that may aid in the investigation of the crime, in addition to giving this information to the police and magistrates. A doctor has the right and duty to evaluate a medical issue and determine whether or not criminal activity may be possible.

MATERIAL AND METHODS

The study was done among a total of 352 MBBS undergraduates of VCSGGIMS & R Srinagar Pauri Garhwal Uttarakhand after dividing them in to three groups. The first group (Group A, n = 149) was comprised of

students who had no exposure to the subject, the second group (Group B, n = 105) was comprised of students who are undergoing Forensic Medicine and Toxicology (FMT) training and the third group (Group C, n = 98) was comprised of students who have completed training in the subject. The Students were asked to express their responses on a scale with grading from 1 to 5 on a questionnaire for survey. The questionnaire had a total of 15 out of 21 selected questions whose validity was determined before the survey and the questions with the validity value ≥ 0.8 were retained in the survey.

Grading- 1-strongly agree, 2-somewhat agree, 3-don't know ,4-somewhat disagree ,5-strongly disagree

(please mark 1,2,3,4 or 5 in the brackets provided after each question)

1. You have heard about Forensic Medicine subject before joining MBBS course ().
2. Forensic Medicine is interesting ().
3. In MBBS curriculum, Forensic medicine is an important subject ().
4. The subject is not used to its maximum benefit potential in medico-legal investigation in India As compared to developed countries like USA ().
5. You may choose the subject as your career option ().
6. The role of doctor is very important to solve various crimes as a part of investigation ().
7. Efficient utilization of the subject in medico legal investigations has potential to help in delivering justice to the victim ().
8. Standard operative procedures (SOP's) are required for proper implementation of subject in clinical practice ().
9. The present application of knowledge in medico legal investigations is adequate in India ().
10. You often dislike the subject as it deals with the dead/decomposed bodies ().
11. You are discouraged to choose the subject as your carrier option as it involves legal cases and you are supposed to attend the courts ().
12. Students and general public are less aware about the utility and scope of the subject in medico-legal Investigations ().
13. Teaching of the subject with real examples can affect your interest in the subject ().
14. The TV programmes like CID, movies related to forensic detectives generate the interest about the subject ().
15. The subject has utility after MBBS course for delivering health services especially in Government Health centre ().

Name of the Participant:

Batch

Signature

VCSGGIMS & R SRINAGAR PAURI GARHWAL UTTARAKHAND

RESULTS

- There was a total of 352 Students who participated in the study. The response wise analysis (Tables 1, 2, 3, and 4) shows that 78.1% students strongly or somewhat agreed that they had heard about the subject before joining MBBS at VCSGIMS & R SRINAGAR PAURI GARHWAL UTTARAKHAND. While 14.4% strongly or somewhat had disagreed with it.
- 84.9% students have found the subject interesting while 7.3% found it as not interesting.
- A total of 90.6 students think that the subject has some utility in MBBS curriculum while 4.54% think it as of no utility.
- The 74.4% students think that the subject is largely unexploited of its potential in medico legal investigations in India, other country like USA, while 10.5% students disagree with it.
- When a question related with the subject as their career perspective in future was asked then only 72.7% agreed to opt it as their career option in future and 8.2% disagreed to it while 19% students express their responses as can't say anything.
- The role of doctor is very important to solve various crimes as a part of investigation 86% students strongly or somewhat agreed. While 7.3% strongly or somewhat had disagreed with it.
- 87.7% students strongly or somewhat agreed, that the efficient utilisation of the subject can yield high quality medico legal investigations. While 4.8% strongly or somewhat had disagreed with it.
- 86.3% think that there is lack of clinical application of the subject at present and 5.6% think that the present application of the subject in medico-legal investigation is inadequate in India.
- 44% students strongly or somewhat agreed that the present application of knowledge in medico legal investigations is adequate in India and While 29.5% strongly or somewhat had disagreed with it.
- 20.4% students strongly or somewhat agreed that, they dislike the subject as it deals with the dead/decomposed bodies and While 63% strongly or somewhat had disagreed with it.
- 44.8% of them are discouraged to choose the subject as their career option because it deals with the legal cases and they are supposed to attend the court cases later on. While 34.6% strongly or somewhat had disagreed with it.
- 82.6% agree that the students and the general public are less aware about the scope and utility of the subject in medico legal investigations. While 5.9% disagreed.
- 83.2% students strongly or somewhat had agreed that if teaching of the subject with real examples can affect interest and While 7.9% strongly or somewhat had disagreed with it.
- 87.2% students strongly or somewhat had agreed that the TV programmes like CID, movies related to forensic detectives generate the interest about the subject and While 5.9% strongly or somewhat had disagreed with it.
- 84.9% students strongly or somewhat had agreed that the subject has utility after MBBS course for delivering health services especially in Government Health centre and While 5.1% strongly or somewhat had disagreed with it.
- The overall questionnaire response were 1-strongly agree, 2-somewhat agree, 3- don't know, 4-somewhat disagree, 5-strongly disagree tabulated and analysed (table-5).

Table 1: Responses to the study questionnaire by study Group A

A	strongly agree		somewhat agree		neutral		somewhat disagree		strongly disagree		total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Q1	55	52.3%	27	25.7%	7	6.6%	12	11.4%	4	3.8%	105	100%
Q2	53	50.4%	40	38%	6	5.7%	3	2.8%	3	2.8%	105	100%
Q3	80	76.1%	10	9.5%	7	6.6%	5	4.7%	3	2.8%	105	100%
Q4	27	25.7%	52	49.5%	19	18%	3	2.8%	4	3.8%	105	100%
Q5	80	76.1%	16	15.2%	4	3.8%	3	2.8%	2	1.9%	105	100%
Q6	78	74.2%	11	10.4%	6	5.7%	6	5.7%	4	3.8%	105	100%
Q7	83	79%	9	8.5%	8	7.6%	3	2.8%	2	1.9%	105	100%
Q8	53	50.4%	37	10.5%	7	6.6%	5	4.7%	3	2.8%	105	100%
Q9	09	8.5%	35	33.3%	25	23.8%	32	30.4%	4	3.8%	105	100%
Q10	07	6.6%	16	15.2%	14	13.3%	29	27.6%	39	37.1%	105	100%
Q11	16	15.2%	41	39%	19	18%	14	13.3%	15	14.2%	105	100%
Q12	23	21.9%	69	65.7%	9	8.5%	3	2.8%	1	0.9%	105	100%
Q13	69	65.7%	20	19%	11	10.4%	3	2.8%	2	1.9%	105	100%
Q14	57	54.2%	38	36.1%	5	4.7%	1	0.9%	4	3.8%	105	100%
Q15	57	46.3%	34	38.9%	10	12%	3	2%	1	0.5%	105	100%

Table 2: Responses to the study questionnaire by study Group B

A	strongly agree		somewhat agree		neutral		somewhat disagree		strongly disagree		total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Q1	55	52.3%	27	25.7%	7	6.6%	12	11.4%	4	3.8%	105	100%
Q2	53	50.4%	40	38%	6	5.7%	3	2.8%	3	2.8%	105	100%
Q3	80	76.1%	10	9.5%	7	6.6%	5	4.7%	3	2.8%	105	100%
Q4	27	25.7%	52	49.5%	19	18%	3	2.8%	4	3.8%	105	100%
Q5	80	76.1%	16	15.2%	4	3.8%	3	2.8%	2	1.9%	105	100%
Q6	78	74.2%	11	10.4%	6	5.7%	6	5.7%	4	3.8%	105	100%
Q7	83	79%	9	8.5%	8	7.6%	3	2.8%	2	1.9%	105	100%
Q8	53	50.4%	37	10.5%	7	6.6%	5	4.7%	3	2.8%	105	100%
Q9	09	8.5%	35	33.3%	25	23.8%	32	30.4%	4	3.8%	105	100%
Q10	07	6.6%	16	15.2%	14	13.3%	29	27.6%	39	37.1%	105	100%
Q11	16	15.2%	41	39%	19	18%	14	13.3%	15	14.2%	105	100%
Q12	23	21.9%	69	65.7%	9	8.5%	3	2.8%	1	0.9%	105	100%
Q13	69	65.7%	20	19%	11	10.4%	3	2.8%	2	1.9%	105	100%
Q14	57	54.2%	38	36.1%	5	4.7%	1	0.9%	4	3.8%	105	100%
Q15	57	46.3%	34	38.9%	10	12%	3	2%	1	0.5%	105	100%

Table 3: Responses to the study questionnaire by study Group C

A	strongly agree		somewhat agree		neutral		somewhat disagree		strongly disagree		total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Q1	58	59.1%	22	20.9%	11	10.4%	5	5.1%	2	1.9%	98	100%
Q2	47	47.9%	33	33.6%	12	12.2%	3	3%	3	3%	98	100%
Q3	69	70.4%	18	18.3%	5	5.1%	4	4%	2	2%	98	100%
Q4	19	19.3%	49	50%	16	16.3%	12	12.2%	2	2%	98	100%
Q5	75	76.5%	13	15.2%	5	5.1%	3	3%	2	2%	98	100%
Q6	67	68.3%	14	14.2%	8	8.1%	5	5.1%	4	4%	98	100%
Q7	71	72.4%	11	11.2%	6	6.1%	7	7.1%	3	3%	98	100%
Q8	53	54%	32	32.6%	4	4%	3	3%	6	6.1%	98	100%
Q9	13	13.2%	28	28.5%	24	24.4%	26	26.5%	7	7.1%	98	100%
Q10	4	4%	11	11.2%	9	9.1%	23	23.4%	51	52%	98	100%
Q11	10	10.2%	33	33.6%	13	13.2%	17	17.3%	25	25.5%	98	100%
Q12	17	17.3%	58	59.1%	12	12.2%	7	7.1%	4	4%	98	100%
Q13	56	57.1%	15	15.3%	9	9.1%	12	12.2%	6	6.1%	98	100%
Q14	49	50%	32	32.6%	7	7.1%	3	3%	7	7.1%	98	100%
Q15	42	42.8%	39	39.7%	7	7.1%	6	6.1%	4	4%	98	100%

Table 4: Responses to the study questionnaire by study Group A, B, & C

A	strongly agree		somewhat agree		neutral		somewhat disagree		strongly disagree		total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Q1	215	61%	60	17%	26	7.3%	31	8.8%	20	5.6%	352	100%
Q2	210	59.6%	89	25.2%	27	7.6%	13	3.6%	13	3.6%	352	100%
Q3	257	73%	62	17.6%	17	4.8%	10	2.8%	6	1.7%	352	100%
Q4	100	28.4%	162	46%	53	15%	25	7.1%	12	3.4%	352	100%
Q5	178	50.5%	78	22.1%	67	19%	16	4.5%	13	3.6%	352	100%
Q6	241	68.4%	62	17.6%	23	6.5%	13	3.6%	13	3.6%	352	100%
Q7	261	74.1%	48	13.6%	26	7.3%	11	3.1%	6	1.7%	352	100%
Q8	189	53.6%	115	32.6%	28	7.9%	10	2.8%	10	2.8%	352	100%
Q9	33	13.2%	122	28.5%	93	24.4%	87	26.5%	17	7.1%	352	100%
Q10	20	5.6%	52	14.7%	58	16.4%	97	27.5%	125	35.5%	352	100%
Q11	39	11%	119	33.6%	72	20.4%	69	19.6%	53	15%	352	100%
Q12	83	23.5%	208	59%	40	11.3%	15	4.2%	6	1.7%	352	100%
Q13	213	60.5%	80	22.7%	31	8.8%	18	5.1%	10	2.8%	352	100%
Q14	195	55.3%	112	31.8%	24	6.8%	6	1.7%	15	4.2%	352	100%
Q15	168	47.7%	131	37.2%	35	9.9%	12	3.4%	6	1.7%	352	100%

Table 5: Overall Students response to Questionnaire

score	Overall score		percentage
1-SA	Strongly agree	2402	45.4
2-SWA	Somewhat agree	1500	28.4
3-DK	Don't know	620	11.7
4-SWD	Somewhat disagree	433	8.2
5-SD	Strongly disagree	325	6.1
	total	5280	100

DISCUSSION

In the present study 84.9 % students found it interesting in contrast to a study in which 83.3% was found it interesting.⁴ In another study in which 43% students found pathology to be the most interesting subject followed by pharmacology (34%), Forensic medicine (17%) and Microbiology as least interesting (6%)⁵. In another study 45.68%⁶ and 68.5%⁷ and students found the subject of pathology interesting and 40.9%⁷ willing to pursue career in it. It is important to comprehend the elements that might improve understanding of the subject. In a study, 39.50% of participants believed that having knowledge of psychiatry improves in understanding forensic medicine⁸. 55.4% of students expressed good attitudes regarding the community medicine course⁹. According to a research, students preferred clinical surgical (50.9%), clinical medical (45.3%), and fundamental medical (3.9%) sciences for their future careers. The reasons for this decision included individual interests, a solid wage, intellectual challenge, and other factors¹⁰. Another study shows that students have a positive attitude toward basic sciences and that they believe that better clinical integration of subjects can considerably enhance their learning opportunities¹¹. When asked if they would choose community medicine as a career, 73.27% of students responded that they would not. This indicates that students are hesitant to choose the field for a career for a variety of reasons, including the pay scale, prestige, fame, and standing in society¹². Pharmacology was one of just 10.93% of students' willing post-graduate subjects to be considered¹³. Despite the fact that less than 30% of the participants thought pharmacology

was a preferred subject and a good option for postgraduate study, the percentage of students who agreed was considerably lower ($p < 0.05$) than the percentage who did not¹⁴. The majority of students—96.5%—agreed that autopsies are essential for medical education. 32.30% of students expressed extreme discomfort during their initial post-mortem examination¹⁵. In accordant with the results of the current study, which showed that 20.4% of the participants dislike the subject for this reason. A large percentage of study participants believed that autopsy would leave the body with noticeable body deformity. The three main reasons why family members or relatives of the deceased refuse to have an autopsy performed are involvement of the police or court (92.1%), lack of use of finding out the cause of death or the manner of death (88.6%), and autopsy delays funeral (83.4%)¹⁶. Consistent with the finding in present study where 82.6% agree that the general public and students are less aware about the scope and utility of the subject in medico-legal investigations. The scientific interest was the main reason students chose to pursue forensics (39.7%), while students who chose not to pursue it had greater levels of death anxiety. The final day of the autopsy seemed to have significant negative predictors, including feelings of anxiety, aversion, and grief¹⁷.

RECOMMENDATIONS

1. A learner-centered approach to teaching is required so that the needs of the students can be better recognized and the subject's curriculum can be appropriately reframed.

2. The job responsibilities of forensic experts must fundamentally shift in order to accommodate the need-based approach, which takes into account the perspectives, roles, and scope of the challenge in various countries.
3. For the subject to generate sufficient interest, scope, and role, further research and innovations are needed.
4. Instead of only relying on theory and textbooks, case-based discussion, problem-based learning, concept-based education, clinical toxicology, and clinical forensic medicine need to be implemented in practice.
5. Forensic specialists have a larger role in the hospital's emergency department and in managing the medico-legal aspects of clinical cases.
6. The current forensic medicine faculty must promote and inculcate the positive
7. Qualities of the specialty.
8. Additional rewards must be given to the faculty members, maybe in the form of remuneration for each medical-legal case or autopsy performed. This could aid in drawing in adequate skilled, intellectually motivated graduates to give the field the prestige it rightfully merits.
9. Students ought to have career counselling and assurances regarding job security and better future prospects if they want to pursue careers in this field.
10. The role of practitioners of this field's numerous policies, particularly those pertaining to the criminal justice system, is anticipated to be expanded by policymakers.
11. Students and the general public need to be made more aware of the subject's importance, particularly in criminal investigations, in order to eliminate the societal stigma that comes with the fact that it involves court proceedings and dead corpses.

CONCLUSION

Due to the rise in sophisticated crimes committed by criminals using modern weapons, this field has gained importance, so its importance as a subject in the undergraduate curriculum should have increased. However, in recent years, attempts have been made to reduce the weight of the subject despite the severe shortage of practitioners in this field. Despite being an essential and significant component of medical education, the subject has mostly remained silent over the recent ups and downs. Although it has had its moments of glory, contributing significantly to the criminal justice system in some locations, it has sadly failed to maintain the momentum and its significance. As a result, it may become even more widely believed among students that forensic medicine and toxicology are not very important to medical practice, have limited application, and do not offer promising job opportunities. Despite having a paradoxically high degree of interest in the subject and considering it to be intriguing and beneficial, the students' fear of dealing with dead bodies and court proceedings and the stigma that goes along with it have further discouraged them from choosing it as a career. Since there is a shortage of forensic specialists, it is necessary to expand the subject's scope and role in order to attract enough qualified students to this field. This will help the field better deal with emerging medico-legal issues, assist the criminal justice system, and give the subject the respect it rightfully deserves. The study has a limitation in that it is based solely on the opinions of students from one institution. Another restriction is the absence of comparable studies in the field, which makes it difficult to obtain comparison data.

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