

CLINICAL POSTING FOR LEARNING MEDICOLEGAL PROCEDURES IN FORENSIC MEDICINE AND TOXICOLOGY: STUDENTS' PERSPECTIVE

Viral Chauhan¹, Gaurang Algotar², Sanjay Mehta³, Kishor Sochaliya⁴

Received : 03/09/2024
Received in revised form : 27/10/2024
Accepted : 13/11/2024

Keywords:

Clinical Posting, Medicolegal procedures, Forensic Medicine, Students' Perspective

Corresponding Author:
Dr. Viral Chauhan,
Email: drviralfmt@gmail.com

DOI: 10.47009/jamp.2024.6.6.23

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2024; 6 (6); 116-119



¹Associate Professor, Department of Forensic Medicine, GMERS Medical College, Morbi, Gujarat, India

²Professor, Department of Forensic Medicine, GMERS Medical College, Navsari, Gujarat, India

³Professor, Department of Microbiology, Swaminarayan Institute of Medical Sciences & Research, Ahmedabad, Gujarat, India

⁴Professor, Department of Community Medicine, C U Shah Medical College, Surendranagar, Gujarat, India

Abstract

Background: A medical practitioner should have sufficient knowledge about the medicolegal procedures to report the medicolegal cases and collect evidence from the patient to facilitate the investigations by law enforcement authorities. The students can learn the medicolegal procedures in Forensic Medicine & Toxicology, which will help them in dealing with medicolegal cases. Hence, the present study was conducted to address the need of current times. The purpose of this study was to assess the learning outcome and determine the perception of undergraduate medical students for learning medicolegal procedures in Forensic Medicine & Toxicology after attending the clinical posting. **Materials and Methods:** Total 83 students of 3rd MBBS Part-1 participated in the study. A pre-test was conducted followed by clinical posting of students in the emergency department with an observation checklist for medicolegal procedures. The post-test was conducted after the completion of clinical posting. A perception questionnaire regarding the depth and interest in learning medicolegal procedures during clinical posting was administered after the completion of the clinical posting. **Result:** The results showed a statistically significant higher post-test score as compared to the pre-test score ($p < 0.0001$). More than 90% of the students responded that clinical posting helps to learn the medicolegal procedures, understand the correlation between history and clinical examination, documentation in medicolegal cases, preservation and dispatch of samples for chemical analysis and treatment in cases of poisoning. 80 - 90% of the students agreed that clinical posting helps to learn the procedure of communication with police & relatives as demonstrated by the faculty, and clinical posting in Forensic Medicine & Toxicology should be a part of the undergraduate medical curriculum. **Conclusion:** The clinical posting of students in the emergency department is an effective active learning method to learn the medicolegal procedures in Forensic Medicine & Toxicology. The students favoured that clinical posting in Forensic Medicine & Toxicology should be the part of undergraduate medical curriculum.

INTRODUCTION

A medical practitioner is constantly exposed to the medicolegal cases which have to be reported to the law enforcement authorities i.e. the police or the magistrate.^[1] Apart from imparting treatment and reporting the commission of the crime, the doctor has to collect all necessary evidence material from the body of the patients, which may help in the investigations of the crime.^[2] There is also an increase in the number of litigations and violence

against government and private doctors and even judicial system has been passing negative remarks about the act of doctors.^[3] This is coupled with a lack of effective communication with law enforcement agencies along with patients, relatives and professional colleagues. Doctors are summoned in the court to testify regarding medicolegal cases that they had attended during their practice. Due to lack of proper medico-legal knowledge, most of the doctors are badly exposed in courts. Every doctor should realise that irrespective of post-graduate

specialty they chose, they might have to deal with medicolegal cases during routine clinical practice. Thus, there is a strong need to acquire sufficient knowledge and skills about the medicolegal procedures whether they work in private clinics or government setting.^[4-6] This can be achieved by sensitizing the students via observation of medicolegal procedures in clinical posting during their undergraduate academic tenure. This approach will motivate the students to learn in-depth about the medicolegal procedures thus mitigating the specified challenges. Thus, the aim of the study was to assess the learning outcome of students after attending the clinical posting in the emergency department for learning medicolegal procedures in Forensic Medicine & Toxicology (FMT) and their perception for learning of medicolegal procedures after attending the clinical posting.

Aim

To assess the learning outcome and perception of students for attending the clinical posting in the emergency department regarding medicolegal procedures in Forensic Medicine & Toxicology

Objectives

1. To assess and compare the learning outcome of students before and after attending the clinical posting in the emergency department regarding medicolegal procedures in Forensic Medicine & Toxicology
2. To determine the perception students regarding the depth and interest in learning medicolegal procedures during clinical posting in the emergency department.

MATERIALS AND METHODS

The study was conducted after taking approval from Institutional Ethics Committee (IEC). It is an educational interventional study. The target population of the study was students of 3rd year MBBS Part-1. Total 83 students participated in the study. The informed consent of all students was obtained for participation in the study.

A checklist to observe the medicolegal procedures was designed for the students. The items in the checklist related to trauma and poisoning cases were 12 and 10 respectively. The checklist was validated on 4 point scale⁷ by 6 subject experts. The Content Validity Index (CVI) of the checklist related to trauma and poisoning cases are 0.972 and 0.967 respectively.

In order to assess the learning outcome, a pilot questionnaire of 20 questions was designed with total score of 50 marks, which consisted of a single correct response, multiple correct responses, true or false and match the following. The pilot questionnaire was validated on 4 point scale⁷ by 6 subject experts. The CVI of test questionnaire is 0.867.

As per the teaching schedule, interactive lectures on mechanical injuries including injury certification, general toxicology and organophosphorus compound poisoning were conducted. A pre-test was conducted

after interactive lectures. Thereafter, the students were posted in the emergency department to learn about the medicolegal procedures which were discussed in the interactive sessions in FMT. The students were posted with the observation checklist of medicolegal procedures in a group of 3 for 3 days after scheduled teaching hours.

The students observed the medicolegal cases according to the checklist. During the clinical posting, the students were accompanied by a faculty from the department of Forensic Medicine & Toxicology for guidance and explanation of the medicolegal procedures. The clinical posting was considered complete if the student had observed the medicolegal procedures according to the checklist. The post-test was conducted after the completion of clinical posting in the emergency department.

The pre and post test scores were statistically analysed by paired t-test to assess the learning outcome of students for medicolegal procedures after clinical posting.

A pre-validated questionnaire (Chronbach's alpha of 0.7795) was administered to determine the perception of students regarding the clinical posting. The descriptive analysis of the perceptions was done.

RESULTS

Pre and Post-test Scores

Out of 100 students, a total number of students who participated in the study was 83. The mean pre-test score was 13 and the post-test score was 24. The pre and post-test score were subjected to paired t-test to determine the significance. It showed a statistically significant higher score in the post-test as compare to pre-test ($p < 0.0001$).

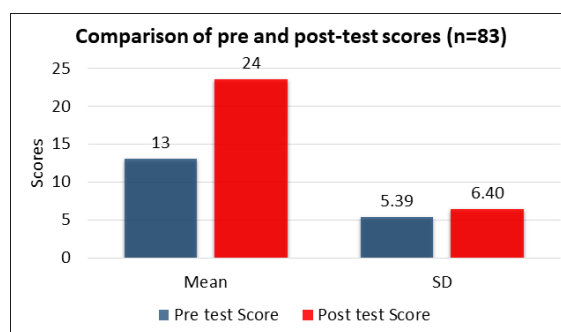


Figure 1: Comparison of pre and post test scores

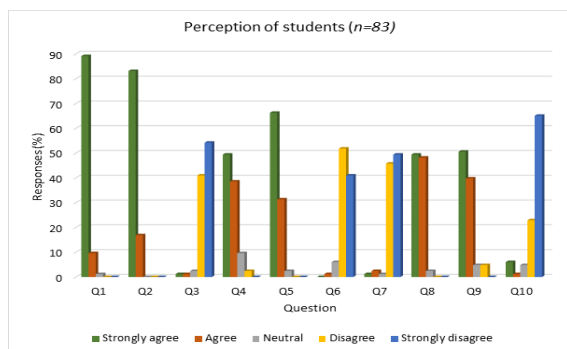


Figure 2: Perception of students (%) regarding the depth and interest in learning medicolegal procedures during clinical posting in the emergency department

The descriptive analysis of responses to the perception questionnaire was done. More than 90% of the students responded that clinical posting helps to learn the medicolegal procedures, understand the correlation between history and clinical examination, documentation in medicolegal cases, preservation and dispatch of samples for chemical analysis and treatment in cases of poisoning. 80 - 90% of the students agreed that clinical posting helps to learn the procedure of communication with police and relatives as demonstrated by the faculty. 88% of the students responded that clinical posting in Forensic Medicine & Toxicology should be a part of the undergraduate medical curriculum.

Table 1: Comparison of mean test scores and t-statistics (n=83).

	Pre-test Score	Post-test Score	t value	p value
Mean	13	24	22.977	<0.0001
SD	5.39	6.40		
Percentage	26.10%	47.13%		

Table 2: Perception of students (%) regarding the depth and interest in learning medicolegal procedures during clinical posting in the emergency department

No.	Questions	Cumulative Responses in %				
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	The clinical posting was helpful in learning the topics in FMT	89.16	9.64	1.20	0.00	0.00
2	The clinical posting helps to understand the procedure of taking informed consent in medicolegal cases	83.13	15.66	1.20	0.00	0.00
3	The clinical posting does not help to understand the correlation between history and clinical examination in medicolegal cases	1.20	1.20	2.41	40.96	54.22
4	The clinical posting helps to learn the procedure of communication with police & relatives	49.40	38.55	9.64	2.41	0.00
5	The clinical posting helps to learn the procedure of documentation in medicolegal and emergency cases	66.27	31.33	2.41	0.00	0.00
6	The clinical posting does not help to learn the procedure of preservation and dispatch of samples in medicolegal cases	0.00	1.20	6.02	51.81	40.96
7	The clinical posting does not help to learn the treatment protocol in cases of suspected case of poisoning	1.20	2.41	1.20	45.78	49.40
8	The clinical posting helps to understand the importance of confidentiality in medicolegal cases	49.40	48.19	2.41	0.00	0.00
9	The clinical posting helps to understand the importance of working in healthcare team	50.60	39.76	4.82	4.82	0.00
10	The clinical posting in FMT should not be part of undergraduate medical curriculum	6.02	1.20	4.82	22.89	65.06

DISCUSSION

Medical education has changed in focus and methodologies since its early beginnings and more recently has become more professionalized and community oriented.^[8] According to study conducted by LaCombe MA, Students subjected to the routine Syllabus have confined information about the heterogeneity of cases faced by the doctors.^[9] Study conducted by authors' shows that Clinical teaching and Clinics has the, better understanding between the

student and teacher, by sharing of observation and coming to a common conclusion.^[10,11]

One of the core competencies of an Indian Medical graduate as per Medical Council of India is that they should know to describe the importance of documentation in medical practice in regard to medicolegal examinations, Medical Certificates and medicolegal reports. However, until recent past this essential information was delivered in Forensic Medicine through Lectures. However, a shift in teaching system has been initiated world-wide with

transition towards an active learning format for delivering such information.^[12]

The present study was conducted to assess the learning outcome of students after attending the clinical posting in the emergency department for learning medicolegal procedures in Forensic Medicine & Toxicology. It employs active learning methods and assesses the learning outcome and perception of students regarding learning of medicolegal procedures in Forensic Medicine & Toxicology by clinical posting in emergency department.^[13]

In a study done on II MBBS students by Mohite et al revealed comparable results. They concluded in their study that reframing of curriculum with introduction of Clinical posting in Forensic Medicine is need of hour for enabling medical graduate with skills of handling medico legal cases.^[14]

Ingole et al has also documented in their study that early clinical exposure to medicolegal cases improves knowledge and skills of students.^[15]

The implementation of Clinical Forensic Medicine teaching will give an opportunity to teach students medicolegal aspect in an efficient way which will definitely improve the medico legal examination and medicolegal report writing as suggested by Khandekar et al.^[12,13]

In the present study, it is evident from the difference between pre and post-test score that clinical posting has increased the learning of medicolegal procedures in Forensic Medicine & Toxicology. It is evident from the responses of the perception questionnaire that clinical posting helps in learning of medicolegal procedures by observing their application. The students also get to perceive the working environment in a clinical setting thereby sensitizing to the abstract topics of attitude, ethics, communications, and working in healthcare team. Besides short term advantage of performing well in the subject of Forensic Medicine & Toxicology, the effective handling of medicolegal cases will be the long term change which will help judiciary.

The findings of the study are limited by exposure to other medicolegal procedures related to cases like sexual offence, drunkenness etc. The inclusion of other medicolegal procedures with exposure to more number of cases per student is recommended to get better results.

CONCLUSION

The clinical posting of students in the emergency department is an effective active learning method to learn the medicolegal procedures in Forensic Medicine & Toxicology. The students favoured that

clinical posting in Forensic Medicine & Toxicology should be the part of undergraduate medical curriculum. The students are motivated to learn about the medicolegal procedures if they are sensitized during undergraduate period by clinical posting in emergency department. The active learning method in small group result in better learning than interactive lectures.

Acknowledgements: I am grateful to the students and faculty members of Department of Emergency Medicine, C. U. Shah Medical College & Department of Forensic Medicine & Toxicology, P. D. U. Govt. Medical College for their continuous support in the conduction of the project.

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