

Self-Assessment of Undergraduate Medical Students Regarding the Clinical Knowledge in Forensic Medicine

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ABSTRACT

Introduction: Clinical forensic medical services play crucial role in emergency department followed by all other specialty. **Aims:** The preliminary survey was undertaken to assess the knowledge about the clinical forensic medicine among the medical students during their clinical posting in forensic medicine, Nepalgunj Medical College. **Methods:** The questionnaire was used in this study to evaluate the student's knowledge. **Results:** As many as 108 medical students were included in the survey (70 male and 38 female). The maximum participants were 23 years old 38(35.2%) and youngest participant was 21 years old 6(5.6%). Maximum students were able to perform clinical forensic skills except traffic accident cases 27(25%) followed by gunshot wounds cases 46(42.6%). The students stated that they could master forensic pathology skills in asphyxia cases 80(74.07%) followed by dead victims in blunt and sharp violence cases 76(70.4%) and least in sudden death cases 31(28.7%), criminal abortion 43(39.8%), infanticide 45(41.7%) and sexual offences 49(45.3%). The students were able to issue medical certificate 99(91.7%) followed by issue a death certificate 98(90.7%) and provide information to the police 96(88.9%) but least could give expert statement 30(27.8%). **Conclusion:** In this survey, found the validity of student self-assessment in determining the ability of clinical knowledge, it is influenced by several factors of objectivity and subjectivity of assessment in terms of students.

Keywords: Clinical skills, Forensic Medicine, Student's self-assessment

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INTRODUCTION

Clinical forensic medicine or forensic pathology play crucial role in emergency department followed by all other specialty. Everyday numerous cases like assault, poisoning, sexual offences, etc. come to emergency department. Clinical forensic medicine (CFM) applies knowledge from all specialties of medicine for the administration of justice in courts of law,^{1, 2} thereby acting as a link between medical practice and the law. Because all practicing physicians, regardless of specialty, are often required to evaluate CFM cases, increasing scrutiny by the judicial system demands that medical graduates/students undergo satisfactory training in CFM and are informed regarding the consequences of their practices, not only on health, but also in the legal, social and economic domains, as the consequences relate to the rights and quality of life of their patients.³ The effectiveness of medical education program needs monitoring and evaluation which can be determined via assessment. Self-assessment is now a major component in the evaluation and learning process because the students get an

first hand insight into their learning outcomes and reflect on it.⁴ It allows comparison of self with that of others (peers) at this time, or with that of previous students or by using measurable value standards. There is a consequential gap in the knowledge and adeptness of medical graduates regarding the practice of clinical forensics, and the necessity for a revised curriculum for CFM to address the inadequacies of undergraduate medical training programs. The study therefore aims to assess the knowledge about the clinical forensic medicine among the medical students.

METHODS

A preliminary survey based on theoretical knowledge of 6th semester, 2017 year medical students was carried out at the Department of Forensic Medicine and Toxicology, Nepalgunj Medical College. Ethical clearance was taken from Institutional Review Committee, Nepalgunj Medical College Teaching Hospital. The participants were students who had passed the clinical rotation of forensic medicine assessed by ward

leaving examination. Data was collected using semi-structured questionnaire and analyzed using Statistical Package for Social Sciences (SPSS) 11.5. Consent was taken from the respondents before answering the written self- assessment questionnaire. During the survey, respondents were given 22 written questions⁵ regarding the knowledge to identify the medico-legal cases that had been studied previously by filling in the competency level column listed on the questionnaire sheet. These students were assessed daily on their practical classes before handing out the questionnaire.

RESULTS

The survey included as many as 108 respondents, with characteristics based on age and gender presented in table I.

Characteristic of respondent	Category	Frequency	Percentage
Sex	Male	70	64.8
	Female	38	35.2
Age	21 years	6	5.6
	22 years	29	26.8
	23 years	38	35.2
	24 years	25	23.1
	25 years	10	9.6

Table I: Characteristic of Respondents (n=108)

In general respondents who participated in this survey were male 70(64.8%). The maximum participants were 23 years old 38(35.2%) and youngest participants were 21 years old 6(5.6%). Table I.

Clinical skills	Student's statement	Yes (n=108)	Percentage %	No (n=108)	Percentage %
Clinical forensic	I can examine live victims in cases traffic accident	27	25	81	75
	I can examine live victims in cases blunt and sharp violence	88	81.5	20	18.5
	I can examine live victims in cases gunshot wounds	46	42.6	62	57.4
	I can examine live victims in cases sexual offences	59	54.6	49	45.4
	I can examine live victims in cases poisoning	68	62.9	40	37.03
	I can examine live victims in cases violence against children	74	68.5	34	31.5
	I can examine live victims in cases domestic violence	79	73.1	29	26.9

Table II: Statements of Students' Ability to the Clinical Skills in Clinical Forensic

In this study, maximum students were able to perform clinical forensic skills except traffic accident cases 27(25%) followed by gunshot wounds cases 46(42.6%). Table II.

Clinical skills	Student's statement	Yes (n=108)	Percentage %	No (n=108)	Percentage %
Forensic Pathology	I can examine dead victims in cases traffic accident	70	64.8	38	35.2
	I can examine dead victims in cases blunt and sharp violence	76	70.4	32	29.6
	I can examine dead victims in cases sexual offences	49	45.3	59	54.6
	I can examine dead victims in cases poisoning	57	52.8	51	47.2
	I can examine dead victims in cases of asphyxia	80	74.07	28	25.9
	I can examine dead victims in cases infanticide	45	41.7	63	58.3
	I can examine dead victims in cases criminal abortion	43	39.8	65	60.2
	I can examine dead victims in cases sudden death	31	28.7	77	71.3
	I can examine forensic identification	59	54.6	49	45.4

Table III: Statements of Students' Ability to the Clinical Skills in Forensic Pathology

The students stated that they could master forensic pathology skills in asphyxia cases 80(74.07%) followed by dead victims in blunt and sharp violence cases 76(70.4%) and least in sudden death cases 31(28.7%), criminal abortion 43(39.8%), infanticide 45(41.7%) and sexual offences 49(45.3%). Table III.

Clinical skills	Student's statement	Yes (n=108)	Percentage %	No (n=108)	Percentage %
Medico legal Cases	I can perform medicolegal procedures	61	56.5	47	43.5
	I can make a forensic medical report	83	76.9	25	23.1
	I can make a medical certificate	99	91.7	9	8.3
	I can issue a death certificate	98	90.7	10	9.6
	I can provide an expert statement	30	27.8	78	72.2
	I can provide information to the police	96	88.9	12	11.1

Table IV: Statements of Students' Ability to the Clinical Skills in Medico legal cases

Medicolegal cases is a proficiency that needs to be studied by medical students in the clinical rotation of forensic medicine. In this study, students stated that they could issue medical certificate 99(91.7%) followed by issue a death certificate 98(90.7%) and provide information to the police 96(88.9%) but least could give expert statement 30(27.8%). Table IV.

DISCUSSION

Clinical forensics in Nepal is a mandatory competency that must be possessed by all forensic experts, general practitioners and medical officers working in government hospital. Clinical forensics contains the handling of cases of living victims such as cases of violence against children, domestic violence, and sexual violence. Clinical forensics is performed only if requested by a police investigator.⁶ The maximum students were able to perform clinical forensic skills except traffic accident cases 27(25%) followed by gunshot wounds cases 46(42.6%).

Forensic pathology deals with the study and application of the effects of violence or unnatural disease in its various forms in or on the human body, in determining the cause and manner of death in case of violence, suspicious, unexplained, unexpected, sudden and medically unattended deaths.¹ The use of autopsy for learning anatomy and forensic pathology is well known throughout the world.⁷ Autopsy is a mandatory examination procedure in every district hospital and has been started in private hospital of the capital city. The students stated that they could master forensic pathology skills in asphyxia cases 80(74.07%) followed by dead victims in blunt and sharp violence cases 76(70.4%) and least in cases such as sudden death 31(28.7%), criminal abortion 43(39.8%), infanticide 45(41.7%) and sexual offences 49(45.3%). Due to lack of proper infrastructure, facilities, forensic experts, knowledge of the hospital staffs and financial instability, students of various sectors are not exposed to autopsy examinations thus their lack of confidence in forensic pathology skills.

The students also stated that they could issue medical certificate 99(91.7%) followed by issue a death certificate 98(90.7%) and provide information to the police 96(88.9%) but least could give expert statement 30(27.8%). The Comprehensive medicolegal management is needed to ensure that forensic medical examinations do not only relate to a living victim or deceased, but also contain ethical responsibility and human interest for the victim and relatives. Another issue of medicolegal is the ability of doctors to produce quality reports and provide adequate expert testimony.⁸ The expert opinion given must be informative, reasoned, have evidence value, valid and rational. A medicolegal analysis approach by determining the nature and probability of a relationship between cause and effect of an event.⁹

The respondents were asked orally to give their opinion about the reason for lack of confidence about the medicolegal issues in medical practice. Lack of exposure to medicolegal cases practically, lack of regular Continued Medical Education on medico-legal issues, under-confidence, less significance to medical jurisprudence during undergraduate curricula and near

zero exposure to these issues during internship were some of the commonly cited reasons by most of the students. Another reason which emerged from the study was that the rising instance of doctors being taken to court for medical negligence or beaten to death by the patient party despite being sincere in their efforts, is forcing the doctors to take a guarded approach in patient management. After the completion of undergraduate studies, these medical students will be posted as medical officer at various district hospitals all around the country. Due to lack of training programs on CFM, improper documentation of medico-legal cases related to sexual assault, inebriated drivers and common physical assault, it becomes difficult for forensic experts, police personnel and lawyers to cope with medico-legal cases. Hence, to affirm that the knowledge and skills they comprehend are in align with that of the context, they are assessed at the end of their posting.

The effectiveness of medical education program needs monitoring and evaluation which can be determined via assessment. Evaluation programs in medical education are multidimensional in nature involving all information in the learning process and learning outcomes, which can be objective and subjective.¹⁰ Self-assessment is a process of formative assessment during which students reflect on and evaluate the quality of their work and their learning, judge the degree to which they reflect explicitly stated goals or criteria, identify strengths and weaknesses in their work, and revise accordingly (assessment matters) The positive perception will increase student motivation to learning.¹¹ Self-assessment is one of the best methods in implementation into clinical learning because it can be done with the approach of an integrated Problem Based learning (PBL) and Case-Based Learning (CBL). The existence of complete documents will be very helpful for self-assessment and contribute to improving the quality of clinical education for students.^{12,13}

By using repeated self-assessments, the learning objectives of all domains of education (knowledge, skills, and attitudes) can be easily calculated. The benefits of self-assessment summarized by Spiller: (1) an easy way for students to self-assess the progress of their learning outcomes, (2) increase awareness of the needs learning in the future, (3) increasing learning motivation, (4) students can identify strengths and weaknesses in learning, (5) independence in learning can be improved, (6) students can be responsible for lifelong learning, and, (7) help students better understand about problems on specific topics.¹⁴ This instrument is valid and reliable when done with the right technique. But self-assessment cannot stand alone and must be combined with the assessment of lecturers. Thus, this self-assessment cannot replace the teaching function structurally or procedurally, it only adds to the quality and value of the evaluation system that is already running.¹⁵

LIMITATIONS

The limitation of this survey was that the participants only involved 6th semester students (at that particular time) entering into the year 2017 from Department of Forensic Medicine

and Toxicology, Nepalgunj Medical College, so the results of this survey could only be used at the institution. In general, the results of this study were useful for the development of assessment systems in clinical rotation students. The students were not exposed to practical cases and autopsy examination which is mandatory in clinical rotation and therefore they were not confident enough to examine autopsy cases especially sexual offences, poisoning, infanticide, criminal abortion and sudden death cases.

CONCLUSION

Forensic medicine plays immense role in all the aspects of the medical field. Student's self-assessment regarding the clinical skills has many advantages and potential to be developed in evaluating student learning outcomes in clinical rotation of forensic medicine. It mainly relies on their experience, interest and intuition; therefore, the results can lead to bias. In our survey, the students had over all fair knowledge of report writing skills. Most of them were not able to examine traffic accident, gun shot, sexual offences, poisoning, infanticide, criminal abortion, and sudden death cases hypothetically. They were also unwilling to give affirmation regarding the expert statement. To support the increase in the validity of self-assessment, it requires a more comprehensive instrument and practical exposure to medico legal cases that can make it easier for students to assess their ability of clinical skills. Student self-assessment gave us the opportunity to improvise the internal assessment system, lecture classes and more detailed practical classes.

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