

Research Article

Graduates Perception towards Instructional Methods of Emergency Medicine: Affecting Their Self-confidence in Emergency Departments

Mohamed Daffalla Awadalla, Ahmed Abd Elrahman Abdalla, and Sami Mahjoub Taha

Department of Surgery, Faculty of medicine, Gezira University, Sudan

Abstract

Background: Teaching emergencies has the ability to provide medical students with an important knowledge and skills. In this study, we assessed the perception of Faculty of medicine, University of Gezira graduates regarding instructional methods of emergencies and their performance in emergency departments. **Materials and Methods:** This is a cross-sectional survey, which was conducted among newly graduated doctors, during their internship rotation. We assessed the graduate perception about instructional methods of teaching EM during medical school and how they deal with emergencies. Likert's scale of five points was used for assessment of the graduate response. This data was used for a correlation analysis. **Result:** Ninety three graduates were enrolled. Male doctors' numbers was 41(44%). Most of the graduated doctors agreed that clinical round and practical session in teaching emergency are useful among 80(86%) and 74(79.6%) of them respectively. Less number of graduated students 45 (48.4%) and 43 (36.6%) agreed that Problem-based learning and Seminar are useful in teaching emergency. Numbers of graduates who feel competence to assess and diagnose patients, request a relevant investigation, and can put a treatment plan and start the managements are 60(68.8%), 76(81.8%) and 61 (65.6%) respectively. **Conclusion:** There are some strength and weakness in emergency teaching during medical school which affects their self-confidence when dealing with emergencies.

Keywords: emergency medicine, instructional methods, perception, self-confidence, graduates

Corresponding Author:
Mohamed Daffalla Awadalla;
email:
mohadaff22@gmail.com

Received 10 October 2017
Accepted 18 December 2017
Published 28 December 2017

Production and Hosting by
Knowledge E

© Mohamed D. Awadalla et al. This article is distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use and redistribution provided that the original author and source are credited.

Editor-in-Chief:
Prof. Mohammad A. M. Ibnouf

 OPEN ACCESS

1. INTRODUCTION

Emergency medicine specialty has the ability to enrich medical school curricula by providing students with diverse learning opportunities at all levels of education [1]. There are opportunities to integrate EM contents in a wide range of pre-clinical courses such as pathophysiology, physical diagnosis, and medical ethics [1]. During the clinical years, EM is often integrated into the curriculum either as part of a broader course heading or as a dedicated EM clerkship. Advantages of clinical education in EM include reinforcement of basic life support skills, learning differentiation and treatment of common acute problems, and assessment of the undifferentiated patient [2].

Teaching of EM among undergraduates has gaps and problems. It needs motivations and challenges to reach educational targets [3]. Still, teaching EM done primarily through traditional methods such as lectures, tutorials, and bed side teaching in many medical schools [4]. At emergency departments, medical students, specialty trainee and nurses all of them get benefits from bed side training sessions [5].

Other teaching techniques as case or problem based learning also used. But, there is difficulty in getting patients with acute condition suitable for teaching all the time. This motivates undergraduate's educators to use simulation based learning [6]. Simulation based training (SBT) by using skills lab facilities allow educators to structure training of undergraduate medical students for the acquisition of clinical skills in a simulated and sheltered learning environment. Since such skills labs train students using manikins, part-task trainers or simulators, patient injuries arising from the inexperience of medical trainees can be prevented, thus fulfilling an ethical imperative [7].

The current survey was conducted to assess the perception of graduates regarding instructional methods during medical school. The study questions are the instructional methods of teaching EM is useful or not, from graduates' points of view. Is there is any relation between teaching methods and doctors' competence.

2. MATERIAL AND METHODS

This is a cross sectional survey, conducted during March 2016. Self-administered questionnaire was distributed to all interns (house-officers). We include all doctors working in Medani teaching hospital (Medical, Surgical, Pediatrics and Obstetric departments). All participants graduated from Faculty of Medicine, University of Gezira, within 1year. FMUG is established in 1975 and the first patch was taken in 1978. At the time of the survey the participants completed four houseman ship rotations.

Emergency contents in FMUG are divided within the curriculum in the systems courses (pre-clerkship) e.g. cardio-pulmonary course and gastro-intestinal course integrated with basic science. There is no separate Emergency course. Also, emergency topics were taught within clerk-ship courses with more concentration in clinical and treatment concern. The instructional methods in this medical school are Lectures, PBL, Seminars, Clinical rounds, Attending ED duties. At the time of the study they did their intern-ship rotation (house-man). The intern spends 3 months in each one of the four main departments (Department of Medicine, Surgery, Pediatric, and Obstetrics & gynecology). During this period, they follow the consultant, who is the direct supervise of them. They had activity of covering the emergency departments as a part of their consultant team. They will be also supervised by the registrars (residents) or medical officers (senior house-officer).

This survey focused on evaluating the perception of the graduates regard the instructional methods of teaching emergency medicine. It gives information regarding their feeling and perception about the usefulness of instructional methods of emergency medicine. The datasheet addressed the following instructional methods; Lectures, Problem base learning, Seminar, Clinical round, Practical session attendance, Night duties attendance. The perception of the graduates upon their own self-competence when dealing with emergency in emergency department also included in the data. We look for any relation EM teaching methods in medical school and graduate's self-confidence in ED.

Likert scale was used to assess perception of the graduates regarding instructional methods. If the graduates are strongly agreed about the idea or the statement regarding the teaching method, this will score 5 out of 5 in the scale, and if he is strongly disagreeing, will score 1. The data was collected using a self-administered questionnaire which were distributed to the participant and recollected in the same day. All collected data were tabulated for analysis. Statistical analyses were performed using IBM SPSS Statistics for Windows, Version 20.0 (IBM Corp., Armonk, NY). Correlation analysis was performed and Pearson's correlation coefficient was calculated to assess the strength of correlation between EM teaching methods and Perception of graduates' regard self-confidence. A "*p*" value of less than 0.05 was considered statistically significant. Ethical approval was obtained.

3. RESULT

Total number of participants was 93 doctors all of them newly graduated; they just finished their internship training, male. Male doctors' numbers was 41(44%). Their

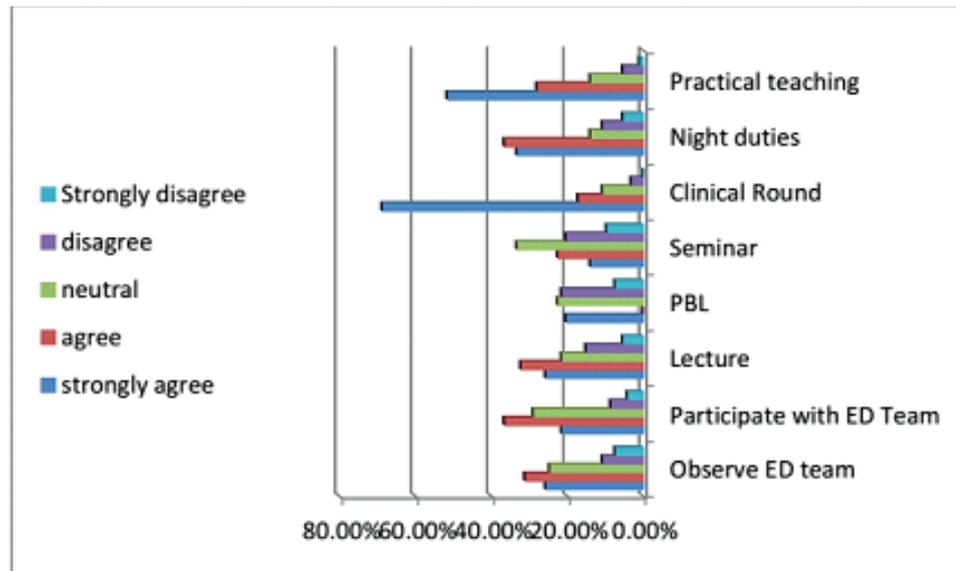


Figure 1: Perception of graduates regarding EM instructional methods.

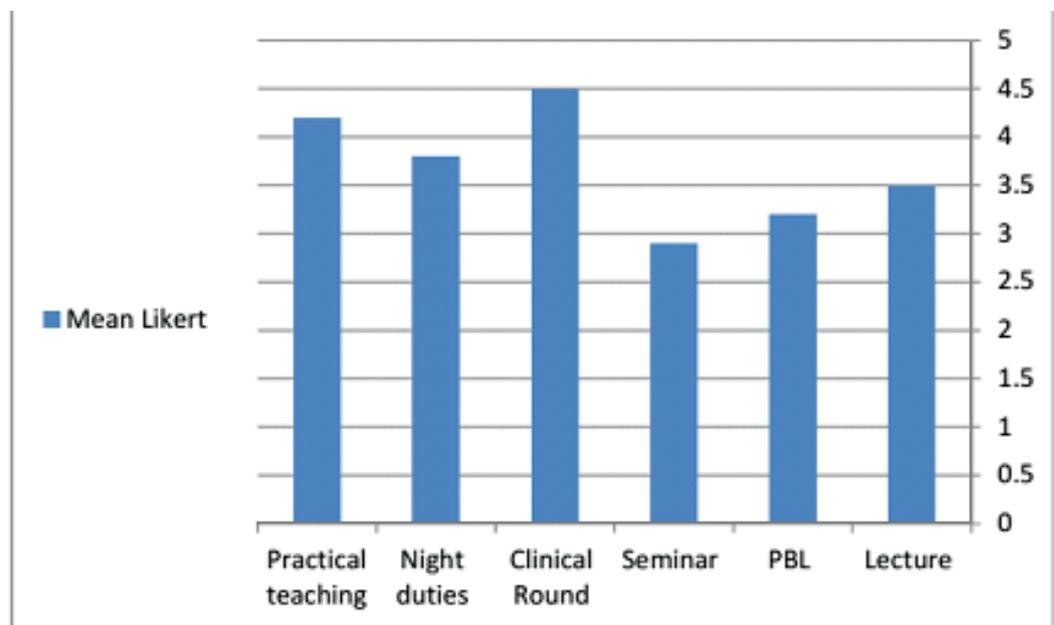


Figure 2: Likert scale regards teaching methods.

perceptions toward instructional methods of teaching emergency medicine throughout the medical school curriculum were shown in (Fig.1 & 2).

Most of the participants agreed that clinical rounds (Bed side teaching) and practical sessions (Basic skills lab) were useful in teaching emergency medical problems, with 80(86%) and 74 (79.6%) respectively. Average number of participants 55(58.1%) agreed that lectures were useful in teaching emergency medicine. Less number of participants 45 (48.4%) and 43 (36.6%) were agreed that PBL and Seminar were useful in teaching emergency. Sixty five (67.9%) of participants agreed that night

	strongly agree	agree	neutral	disagree	Strongly disagree	Mean Likert
Assessment and Classify	35.5%	33.3%	23.7%	7.5%	-	3.9
request relevant investigation	32.3%	49.5%	14%	4.3%	-	4,09
plan and start managements	25.8%	39.8%	24.7%	8.6%	1.1%	3,8

TABLE 1: Perception of graduates' regard confidence in Emergency Departments

The graduates can do in ED	Instructional methods which related to competence	P value
Assessment and diagnosis	PBL	0.006
	Observe the emergency team	0.003
Request relevant investigation	PBL	0.008
	Observe the emergency team	0.022
	Practical teaching	0.020
Plan and start managements	Participate in managements of patients	0.046
	Night duties	0.027

ED; Emergency departments, PBL; Problem based learning.

TABLE 2: **Relation between** Perception of graduates' regard self-confidence in ED and EM.

duties attendance in the emergency department with emergency team was useful. In ED, 53(57%) of participants agreed that they observed the ED team while working, while 54(58.1%) of them agreed that they participated with the ED team while working. The mean average of Likert scale is shown in (Fig.1&2). The responses of graduates regard their self-competence on ED shown in (table 1). Sixty four (68.8%) participants were self-confident that they can assess and diagnose critically ill patients, 76(81.8%) of them were confidently can request relevant investigation, and 61 (65.6%) can put a treatment plan and start the managements with confidence.

In this study, statistical relation between graduates' self-confidence in ED and some instructional methods of teaching emergency shown is in (table 2). Perceptions of graduates regarding assessment and diagnosis of critically ill patients in ED are significantly related to PBL (p value 0.006) and observe the emergency team (p value

0.003). Perceptions of graduates regarding request relevant investigation are significantly related to PBL (p value 0.008), Practical teaching (p value 0.020) observe the emergency team (p value 0.022). Perceptions of graduates regarding plan and start managements of critically ill patients in ED are significantly related to participate in managements of patients (p value 0.046) and Night duties (p value 0.027).

4. DISCUSSION

The instructional methods of teaching EM in faculty of medicine University of Gezira which re-evaluated are lectures, PBL, seminar, bedside teaching rounds, Practical and Simulated session and Night duties attendance at Emergency department. Those methods are similar for teaching emergencies in Malaysia [4] and United State [6] medical schools. In this study, perception of graduated doctors regard instructional methods is variable. Clinical bed sides teaching and practical session (simulated lab session) get the highest points in this study. Bedside teaching for emergencies has a great valuable role in teaching undergraduates students. They will expose to real life situations and scenarios in emergency departments. At emergency department, the tutor or instructor give them a lot of knowledge, skills, attitude and experiences that will not get by another modality. Bed sides teaching should be used effectively to get the maximum benefit [9, 10].

In this study graduate's perception regarding practical teaching (simulated lab session) is highly positive. This is matching the recent concept towards simulated based learning as effective tools in emergency medicine education and procedure skills training.

In this study, lecture as a teaching modality for emergency get less point in comparison to bedside and practical teaching. In contrast, it gets higher points in comparison with PBL sessions and Seminar. This contradiction is going with literature. A lot of papers highlight the strength of lecture [11-13]. Some educators talk about lecture weakness in medical education. They critique the mode of instruction and its transfer of information as a one-way communication with little cognitive gain [14, 15]. In this study, the lowest points get by Seminar and problem based learning. These low points reflect some dissatisfaction from graduate's regard PBL and seminar. These types of instructional methods need more training to the tutor and teacher. We need to check the how it is conduct. Also, some students prefer lecture because it is easy to get knowledge. In this study the graduates' views regard their competence in the ED is variable more than two third of them can dell with emergency patients. They can assess and diagnose emergencies. Also, they can request relevant investigation and

put plan of managements. We found significant relation between some instructional methods and competence in ED. These instructional methods are PBL, night duties attendance, observing Emergency team and participate with the emergency team in the ED.

5. CONCLUSION

We can conclude that, the perception of graduates' doctor's regards teaching methods is above average. More than two third of them have self-confidence regard dealing with emergency. Lastly there is strong relation between PBL, night duties attendance, and observing emergency team and graduates' self-confidence. One of the limitations is small sample size. Participants cannot give conclusive comment regard the teaching methods.

References

- [1] C. J. Pitre, The unique educational value of emergency medicine student interest groups, *The Journal of Emergency Medicine*, **22**, no. 4, 427-428, (2002).
- [2] W. P. Burdick, N. J. Jouriles, G. D'Onofrio, L. E. Kass, J. F. Mahoney, and K. M. Restifo, Emergency medicine in undergraduate education, *Academic Emergency Medicine*, **5**, no. 11, 1105-1110, (1998).
- [3] M. D. Gismalla and A. A. Alawad, Undergraduate Emergency Medicine Education: Problems and Challenges, *Austin Emerg Med*, **3**, no. 1, p. 1049, (2017).
- [4] I. M. Saiboon, M. J. Jaafar, N. S. Ahmad, Z. Ahmad, F. A. Hamzah, and S. M. Jamal, Simulation based education in delivering emergency medicine module, 388-393
- [5] W. S. Thayer, Osler the teacher. *Bull Johns Hopkins Hosp*, in *Osler the teacher. Bull Johns Hopkins Hosp 1919*, **30**, 198-200, 1230-1233, 303, 1919.
- [6] R. H. Steadman, W. C. Coates, M. H. Yue, R. Matevosian, B. R. Larmon, L. McCullough, and D. Ariel, Simulation-based training is superior to problem-based learning for the acquisition of critical assessment and management skills, *Critical Care Medicine*, **34**, no. 1, 151-157, (2006).
- [7] A. Ziv, P. Root Wolpe, S. D. Small, and S. Glick, Simulation-based medical education: An ethical imperative, *Academic Medicine: Journal of the Association of American Medical Colleges*, **78**, no. 8, 783-788, (2003).
- [8] D. C. Kern, T. A. Parrino, and D. R. Korst, The Lasting Value of Clinical Skills, *Journal of the American Medical Association*, **254**, no. 1, 70-76, (1985).

- [9] G. Bandiera, S. Lee, and R. Tiberius, Creating effective learning in today's emergency departments: How accomplished teachers get it done, *Annals of Emergency Medicine*, **45**, no. 3, 253–261, (2005).
- [10] C. Heidenreich, P. Lye, D. Simpson, and M. Lourich, The search for effective and efficient ambulatory teaching methods through the literature, *Pediatrics*, **105**, no. 1, 231–237, (2000).
- [11] B. G. Charlton, Lectures are such an effective teaching method because they exploit evolved human psychology to improve learning, *Medical Hypotheses*, **67**, no. 6, 1261–1265, (2006).
- [12] B. Graffam, Active learning in medical education: Strategies for beginning implementation, *Medical Teacher*, **29**, no. 1, 38–42, (2007).
- [13] B. G. Charlton, Science school and culture school: Improving the efficiency of high school science teaching in a system of mass science education, *Medical Hypotheses*, **67**, no. 1, 1–5, (2006).
- [14] ZA. Sebai, Medical education: which way forward? *J Family Community Med*, **8**, no. 3, 17–18, (2001).
- [15] Smith B Edward H, Lecturing: Case studies, experience and practice. London: Kogan; 2001.