

Learning to cure with care: awareness of faculty and medical students about students' roles related to patient safety

Ayesha Ayub,¹ Rehan Ahmed Khan²

Abstract

Objective: To explore the awareness of faculty and medical students about students' roles with respect to patient safety and to define the domains that should be made a part of undergraduate curriculum.

Methods: The descriptive exploratory qualitative research was conducted from December 2016 to March 2017 at Islamic International Medical College, Rawalpindi, Pakistan, and comprised faculty members and final year medical students. World Health Organisation patient safety curriculum guideline for undergraduate medical schools was taken as the reference. Initially 12 codes for faculty and 18 for students were formed which were later reduced to 6 themes: importance of patient safety education; importance of strong student-patient relationship; code of conduct; students and effective team; students' part in management plans; and students and medical errors. Sub themes were also defined. Thematic narrative analysis was done using Atlas ti software.

Results: Of the 30 participants, 12(40%) were faculty members and 18(60%) were students. All (100%) the participants were of the view that patient safety is an important issue, especially for the future doctors and young professionals. All (100%) the participants were aware of the importance of a strong and trustworthy relationship between the patients and doctors. All (100%) the participants suggested that the students must follow proper code of conduct when they come to the wards. The participants advocated the need of establishing a system and culture where students can go and report an error comfortably. The participants identified defective communication to be one of the leading causes of medical errors.

Conclusion: The need to bring reforms in medical curriculum with respect to patient safety was stressed.

Keywords: Faculty awareness, Students' awareness, Students' roles, Patient Safety, Undergraduate level. (JPMA 68: 1350; 2018)

Introduction

The scope of medicine has been greatly revised in past few decades, with emphasis being given not only to the treatment and prevention of diseases, but also to keep the patients safe and to avoid medical errors as much as possible. It is the prime responsibility of healthcare professionals to reduce harm and maintain patient safety while providing healthcare to the community.¹ The Institute of Medicine, United States of America (USA), published a report in November 1999 which highlighted the importance of patient safety in maintaining and building a safer health system.² In Pakistan, although this subject was not given much attention previously, now people are working on this area. In particular, media, both electronic and print, is taking it as one of the most serious issues of our healthcare system.³ Recent research papers have also shown that patient safety is an alarming issue in Pakistan's healthcare system and is threatening our

healthcare practices and facilities at national as well as international levels.^{4,5}

Taking about the healthcare system and its working conditions, the learning of medical students shall be in line with patient care and safety.^{6,7} It has been proven that students gain more knowledge and skills about patient management when they themselves become a part of the patient care team and attain better professional attitudes when they actually work in the environment and conditions in which they have to practise in future.^{7,8} Role of undergraduate medical students in maintaining patient safety, to reduce medical errors and to function as a part of healthcare providing team, are important matters which should be answered clearly because they are an essential but unclear component of medical curricula.^{6,9} In today's world, with so much emphasis on the issue of patient safety, medical students have limited knowledge about medical errors, their causes, preventions and other patient safety issues.¹⁰ A symposium on patient safety was held in 2006, where 86 participants identified and recommend priority areas to develop curriculum regarding the issue of patient safety.⁶

¹Independent Medical College, Faisalabad, ²Riphah International University, Islamic International Medical College, Rawalpindi.

Correspondence: Ayesha Ayub. Email: ayeshaayub89@live.com

Similarly, World Health Organisation (WHO) published a guideline which included 11 areas of patient safety that should be made part of the undergraduate medical curriculum.¹¹

Another factor, along with the students, which need to be focused upon related to the faculty and the working environment in which the students are being trained.¹² The hospital environment and cooperation of paramedics and nurses is also a crucial element in patient safety, and students should be made aware of their importance and must be taught how to work in a team rather than at individual level.¹³ Faculty awareness about patient safety and presence of this element in the curriculum is as important as awareness of students about this issue to improve the overall condition of our healthcare system.^{14,15}

Patient safety is considered an important topic to be taught to medical students at undergraduate and postgraduate level globally. It is being demanded from medical graduates to practise their knowledge and skill in their professional fields, keeping the components of

patient safety at priority level along with providing healthcare. Despite being highlighted as an important issue at the international level, patient safety has not yet been given due attention in Pakistan. It is a need, both internationally and locally, that our students should know about the basic concepts of patient safety and how to deal with different conflicts that arise with appropriate attitude. At the same time, it is equally important for the faculty to know what is being expected of the students and how it should be taught and delivered to them, because they have to teach them accordingly and they are the role models whom students will be following in their future professional fields.

The current study was conducted to explore the awareness of students and faculty about students' roles with respect to patient safety at the undergraduate level.

Subjects and Methods

The descriptive exploratory qualitative research was conducted from December 2016 to March 2017 at Islamic International Medical College (IIMC), Rawalpindi, Pakistan, with Railway General Hospital, Islamic

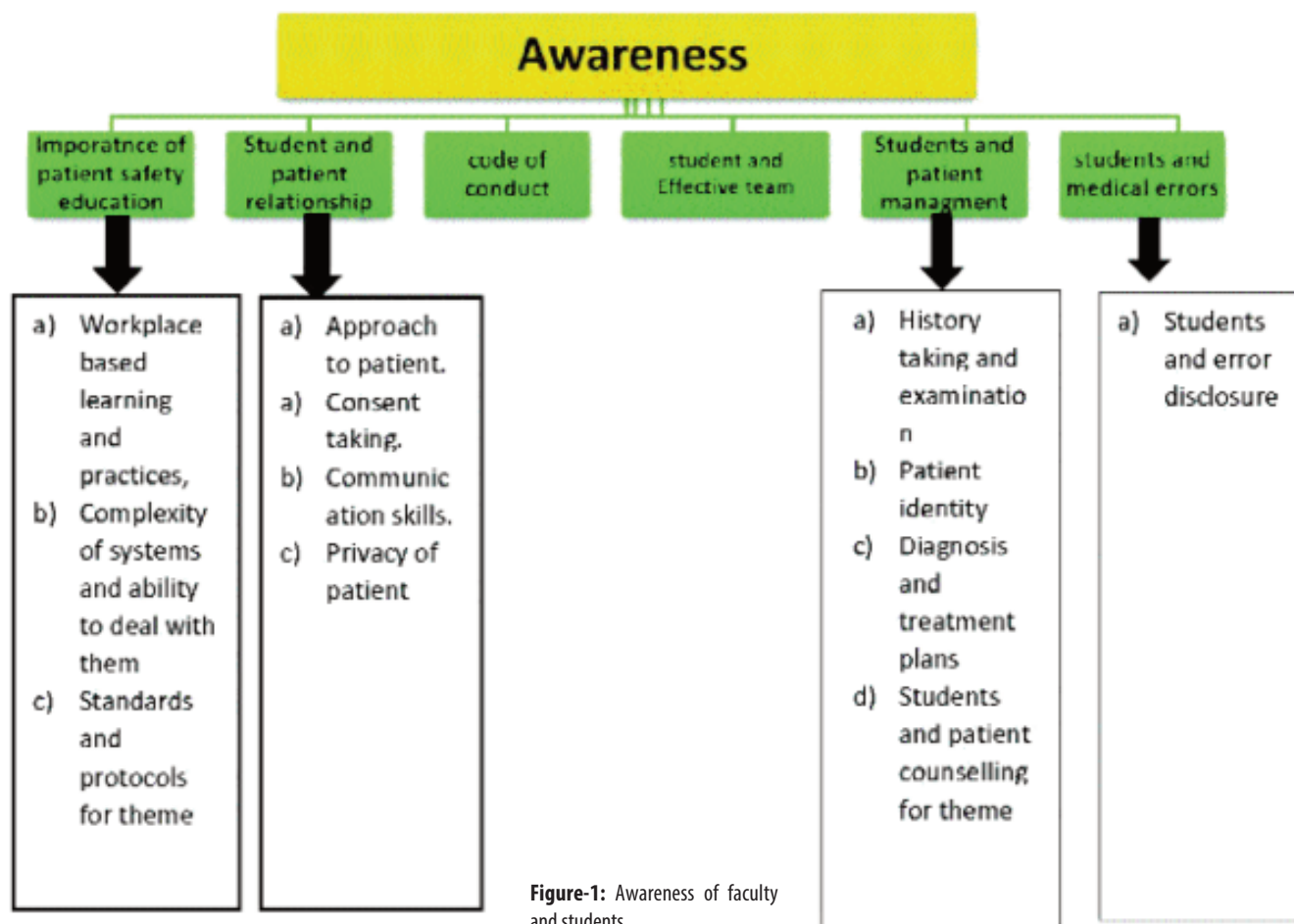


Figure-1: Awareness of faculty and students.

Questions asked from faculty and students:

FACULTY:

- 1- What are the key principles and concepts of patient safety to be taught to students at undergraduate level?
- 2- "To err is human". What are the human factors that contribute to patient safety? And how to control them at student level?
- 3- List types of medical errors important for students to know and what they can learn from each one?
- 4- What to do - as a student - when they accidentally encounter a medical error?
- 5- What are the 3 most essential strategies to be known by students to minimize medical errors?
- 6- What is importance of an effective team in maintaining patient safety as a medical student and its importance at undergraduate level?
- 7- How to communicate with patients and their care takers about management at undergraduate level?

STUDENTS:

1. What is your concept of patient safety, what components are included in it?

Annexure: The study questionnaire.

International Medical Complex, Islamabad, and Riphah International Hospital's Sihala campus as its affiliated clinical units. Approval was obtained from the University of Lahore and the IIMC. Purposive sampling technique was used to enrol faculty members and medical students. Faculty members who belonged to the clinical side and had been involved in teaching for at least 3 years were included, while only final year students were included, as they were the ones who had been through the whole curriculum and could reflect the actual picture of what characteristics an upcoming clinician should have. It was decided to conduct semi-structured interviews with faculty members, while focus group discussion (FGD) was considered appropriate. It was difficult to arrange an FGD for 5-6 faculty members as they had busy schedules and were not available at a particular time together. They all had vast experience which needed to be probed in detail individually. But for students, it was more convenient to arrange an FGD in their free time.

While searching for studies regarding patient safety, there was a gap found in literature about defined role of students with respect to patient safety. WHO patient safety curriculum guide, 2010, Part A gives 11 specific domains which students must know when they pass the basic medical qualification and step into the practical world as an individual.¹¹ After reading these domains thoroughly, 5 questions were prepared to be asked from faculty and students. After initial formulation of questions, they were sent to 5 experts for validation and feedback along with the reference guide. Seven questions were finalised for the study after their reply as two questions were further converted into two parts. These questions were theme-based, with liberty given to the subjects to discuss the theme openly and their main aim was to cover all the domains (Annexure).

A consent form was signed by all the participants, and codes were given to them before recording their views. After recording, all interviews were transcribed and sent to the participant for confirmation. In case of students, one member of FGD was given the transcription for checking. The whole data was then analysed using Atlas ti software and thematic narrative analysis was done which led to the generation of themes and sub-themes. Initially through open coding, 18 codes for faculty and 12 for medical students were generated which were later categorised in to 6 main themes having various sub-themes by axial and selective coding (Figure 1).

Results

Of the 30 participants, 12(40%) were faculty members and 18(60%) were students. The first defined theme was, 'Importance of patient safety education' All participants were of the view that patient safety is an important issue, especially for the future doctors and young professionals due to increasing awareness about health matters in public and the role of electronic media in these matters and were in favour of including the essential knowledge

of patient safety in undergraduate curriculum and to train students accordingly.

"Patient safety is very important as soon as someone enters the hospital, especially the students and it will be difficult, but if we include internship in our curriculum, the students can learn in a better way about patient safety by becoming part of the system, which is what I think is needed most in our teaching and training system," said a participant. It was considered essential for medical students at undergraduate level to know about patient safety and its components clearly and presence of these in their teaching environment.

The first sub-theme was "necessity of making standards and protocols for students". The subjects further elaborated the need of patient safety education by emphasising that proper protocols and standards should be made for students with respect to patient safety and must be included in their routine teaching process to improve the healthcare system and health education. "Another thing is that there should be standardisations and students should know about them, aware of them and they should ask for protocols. These minimise errors because knowledge is what they are always taught, the prescriptions, but there is always room for errors. You don't have standards set ... you have chances to make mistakes" (Faculty-1).

a) The second sub-theme was "importance of workplace-based learning". The subjects also added that in addition to practical knowledge, students should be trained in an environment where they can observe and see how actually the systems are working, how things are handled and how to maintain the proper protocols. "Errors are made by humans but there is a saying that eyes don't see what the mind doesn't know, so blunders happen when knowledge is inadequate because you can't pointout if you are not aware of something, so they should be taught in the environment to make them aware of the situation they are going to work in and under supervision because if they come and start working without any knowledge and supervision, they can make mistakes" (Faculty D).

b) The third sub-theme was, "understanding the complexity of system and ability to deal with them". All the participants especially the students were very much concerned about the stress and burden they were going to face in their future and how they will handle them, like long working hours, expectations of the society and human necessities. Emphasis was given to the need of introducing this factor in their teaching and training to

prepare them adequately for the coming future challenges.

The second theme was, "Importance of strong student-patient relationship" All the participants were aware of the importance of a strong and trustworthy relationship between the patients and doctors. They suggested training medical students about building a relationship based on trust and understanding. For this the first thing was to teach students about the importance of patient as a human being. "The first thing is to know the importance of patient, if they don't treat him as a human being but casually, then errors will occur. Knowing that you are dealing with a human being and from one mistake even death can occur, the errors can be avoided," said a participant.

There were four sub-themes. The first was, "professional approach to patient". The first thing to teach students is how they should approach the patient. How they should behave in front of the patient and how to be empathetic towards the patient.

a) The second sub-theme was, "practice of effective communication skills". The participants identified defective communication to be one of the leading causes of medical errors. They suggested that students should be taught effective communication skills. "Poor communication skills and faulty communications are the most important causes of conflict between the patients and their healthcare providers. Students should be taught about the standards of communication." (Faculty F)

b) The third sub-theme was, "need of proper consent taking". This issue was addressed by a participant as, "There is a controversy. When a student comes, our people differentiate between a student and a doctor. So, we sometimes ask students to introduce themselves as doctors because if they say they are students, the patient may not allow them to treat... Some senior should go and request the patient if this comes to be the situation and they should not ideally lie to the patient."

c) The fourth sub-theme was, "respect for the privacy of patient". Another thing which affects the doctor-patient relationship, identified by participants, was the privacy of the patient. "The students must keep this in mind while coming to wards. Before doing any procedure or manoeuvre on the patient, they should take consent, do proper counselling and keep in mind the privacy of the patient."

The third theme was, "Code of conduct". All the

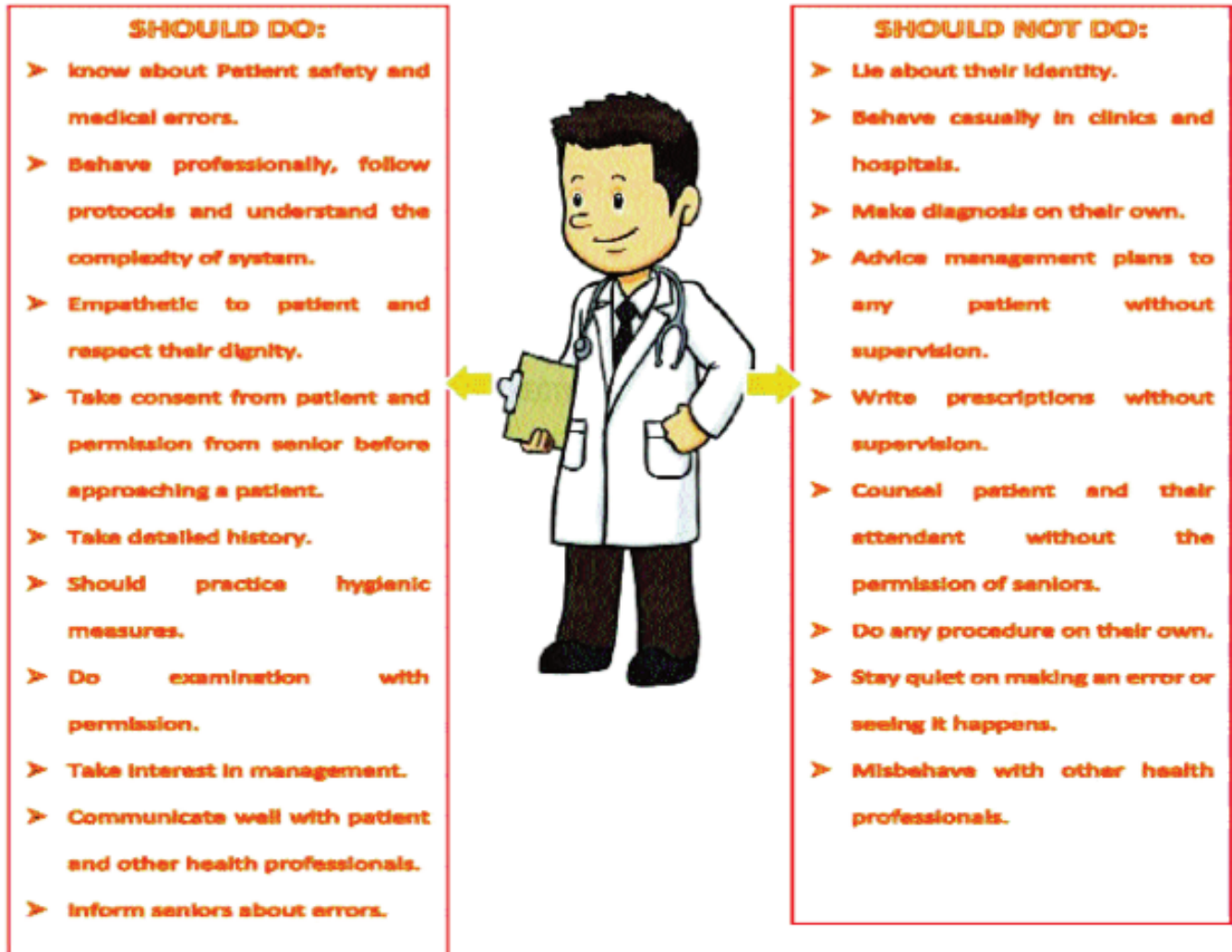


Figure-2: Do's and Don'ts for medical students to maintain patient safety.

participants suggested that the students must follow proper code of conduct when they come to the wards. These included proper dressing, wearing white coats, proper use of language and attentive behaviour. They should also practise all the hygienic measures while attending to the patients. A student said: "I think that we should follow all the rules before we go and handle the patient. This includes lab coats and hygienic measures."

The fourth theme was, "Students and effective team". The participants were well aware of the importance of an effective team in patient management and securing patient safety. They said it is important to teach our students about team working and interaction. Students must know that they are not working alone. There are other health professionals, like doctors from other specialties, nurses, laboratory assistants and other

paramedics, who have an equally important part in patient management, especially with respect to the patient safety issue. One of the subjects said: "Healthcare provision is a team work and all members are important. Students should be informed enough about this team, because patient management is not a single person's work. Every member holds same level and importance and they should know how to deal with them."

The fifth theme was, "Students' part in patient management". All the participants, especially students, strongly advocated the need of making students a part of the patient management team. But it should be fully supervised, controlled and limited. A point highlighted by the participants was about history-taking, patient identity and general examination. The students during their early years should start taking history and perform general

examination under direct supervision. When they reach the final year, they should have mastered the skill of history taking and doing examination. At this level, they should be able to do these things independently, but under indirect supervision and with permission from the seniors and teachers.

a) Another point highlighted was about diagnosis and treatment plan. Students should never make diagnosis and management plans on their own. They should only observe in order to learn about diagnosis and treatment plan making.

b) Another point the participants highlighted was about students and patient counselling. Students should be taught about counselling skills, but they should not be allowed to talk with patients and their families as it may lead to major conflicts.

The sixth and the final theme was, "Students and medical errors". Knowledge about medical errors, their factors and their prevention was considered a must for the students. Major errors committed at the undergraduate level, as identified by the participants, were: Identification errors, including wrong identification of patient, sample and surgical site; Prescription errors, including wrong name and class of drug, wrong dosage, failure to look at any side effects or interactions of the given drugs; Communication errors, including communication failure between the health team or with the patient; and Non-hygienic practice, including not wearing gloves, improper disposal of waste material, faulty sterilisation during procedures.

Another thing regarding medical errors was error disclosure. The participants advocated the need of establishing a system and culture where students can go and report an error comfortably. This is important not only for their own learning, but also for the betterment of the healthcare system. "These students are very intelligent, and if they point an error they can politely tell the person in private and in a respectable manner that this is not the proper way and we should develop an environment for this. The students should play a role in this matter and must not sit quietly. The development of this culture is very important."

Figure-2 is a metaphor showing students' roles with respect to patient safety as derived from the views of students and faculty members.

Discussion

Patient safety is one of the major issues which the medical world is facing today. It has become an important task for

all medical professionals, including clinicians, medical educationists, nurses, paramedics or students, both in the developed and the developing countries. In developed countries, reforms have already been made in curricula and working systems, but in developing countries, like Pakistan, this issue still has not been given much emphasis.

Regarding theme 1, the faculty members and students suggested that it is important to teach medical students about patient safety and to introduce patient safety in their curriculum as it affects their knowledge, attitude and skills, which is ultimately reflected in their future practices. Similar results were shown in an experimental study, done in Singapore on 3rd year medical students. A mobile game application was used to teach students about patient safety and pre-test and post-test scores were significantly different.¹⁶ A study in New York reported similar results.¹⁷

Both the faculty members and medical students strongly advocated the need for development of standards and protocols to be followed and implemented in the clinical settings. According to them, protocols included general rules set by the administration, regulations and checklists to be followed during clinical rotations and working procedures. SM Shortell, in his commentary, discussed that creating proper system and making it smooth and understandable for the working health professionals is important to reduce the chances of errors which occur due technical or system oriented issues.¹⁸ In Norway, after the implementation of WHO surgical safety checklist in one hospital and comparing results with another hospital without implementation of the checklist, the complication rates significantly decreased.¹⁹

Regarding theme 2, the participants were aware of the importance of a strong and effective relationship between healthcare providers and patients for better management. The relationship between the health professionals and patients play a key role in management process. Stronger the bond, stronger will be the trust of the patient, hence leading to better patient compliance and satisfaction, ultimately improving the patient care system.²⁰ A cross-sectional analysis of doctor-patient encounter in three different settings showed that the patients' participation and interest in the management process was increased by facilitative and supportive communication of doctors.²¹ A study in China showed that a leading cause of dissatisfaction of doctors about their profession was due to weak doctor-patient relationship, basically due to non-human approach

being practised in their medical facilities, showing effect of positive humanistic approach and strong mutual relationship on doctors as well.²²

a) Regarding theme 3, the participants favoured that students must come to the wards in proper dress. Studies from USA and South Korea highlighted the point as well.^{23,24}

In addition to proper dressing, the participants also highlighted the need to practise hygienic and safety measures while handling patients, like washing hands, wearing gloves, using sterile syringes etc. A literature review including 24 studies from 1997 to 2008 showed that by adopting hand washing and sterilisation, the rate of infectious in hospital can be reduced significantly.²³

b) Regarding theme 4, the faculty members were aware of the importance of effective team and said that a student at the undergraduate level must also know about it. They suggested developing a system where students can learn how to be an effective team member and how to interact with others in a team. They also indicated ineffective team working as a major cause of medical errors. A study showed that in surgical situations, where there is an effective team working in collaboration, the rate of minor problems was decreased.²⁴ Another study conducted on medical students showed that medical students, who were trained about patient safety with other medical professionals, learned more about effective team working compared to those who were trained with doctors only.²⁵

c) Regarding theme 5, the participants were in favour of making students a part of patient care team and involve them in the management process to let them understand the whole procedure and how to make and implement management plans for patients. A study in the United Kingdom strongly suggested that medical students learn from real patients by participating in patient care within an educational practice and their learning is affected by clinicians' willingness to engage in supportive dialogue.⁷

d) Regarding theme 6, the participants advocated the need to teach medical students about medical errors so that they can be avoided. An observational study on traumatised patients in Berlin showed that of all the deaths in trauma patients, 9.8% were potentially preventable and 5.3% were definitely preventable if proper training and surveillance of human and technical factors had been present.²⁶ Another

literature review of 26 articles showed that it is important to know about medical errors and to speak about them as it is a basic requirement for ensuring patient safety. The participants in our study highlighted the importance of error disclosure, but, on the other hand, talked about a suitable environment and culture to be developed to help doctors speak about errors, for learning, improvement and betterment of healthcare system. It has been also highlighted in an earlier study.²⁷

Conclusion

The need to bring reforms in medical curriculum with respect to patient safety is of an urgent nature. The concept of medical errors, their solution, reporting system, effective team management, team work and quality assurance methods are the domains which are totally neglected at undergraduate level.

Disclaimer: None.

Conflict of Interest: None.

Source of Funding: None.

References

1. Nie Y, Li L, Duan Y, Chen P, Barraclough BH, Zhang M, et al. Patient safety education for undergraduate medical students: a systematic review. *BMC Med Educ.* 2011;11:33.
2. Institute of Medicine (US) Committee on Quality of Health Care in America; Kohn LT, Corrigan JM, Donaldson MS. *To Err is Human: Building A Safer Health System* - Institute of Medicine.
3. Medical mistakes - doctors should learn to own up - Newspaper - DAWN.COM [Online] [Cited 2017 May 25]. Available from: URL: <https://www.dawn.com/news/1180747>
4. Bari A, Khan RA, Rathore AW. Medical errors; causes, consequences, emotional response and resulting behavioral change. *Pak J Med Sci.* 2016; 32:523-8.
5. Shah N, Jawaid M, Shah N, Ali SM. Patient safety: Perceptions of medical students of dow medical college, Karachi. *J Pak Med Assoc.* 2015; 65:1261-5.
6. Sandars J, Bax N, Mayer D, Wass V, Vickers R. Educating undergraduate medical students about patient safety: Priority areas for curriculum development. *Med Teach.* 2007; 29:60-1.
7. Steven K, Wenger E, Boshuizen H, Scherpbier A, Dornan T. How clerkship students learn from real patients in practice settings. *Acad Med.* 2014; 89:469-76.
8. Chen HC, van den Broek WES, Cate O Ten. The case for use of entrustable professional activities in undergraduate medical education. *Acad Med.* 2015; 90:431-6
9. Seiden SC, Galvan C, Lamm R. Role of medical students in preventing patient harm and enhancing patient safety. *Qual Saf Health Care.* 2006; 15:272-6.
10. Blasiak RC, Stokes CL, Meyerhoff KL, Hines RE, Wilson LA, Viera AJ. A cross-sectional study of medical students' knowledge of patient safety and quality improvement. *N C Med J.* 2014; 75:15-20.
11. Walton M, Woodward H, Van Staaldunin S, Lemer C, Greaves F, Noble D, et al. The WHO patient safety curriculum guide for medical schools. *Qual Saf Heal Care.* 2010; 19:542-6.
12. Sorra J, Nieva V, Fastman BR, Kaplan H, Schreiber G, King M. Staff attitudes about event reporting and patient safety culture in

- hospital transfusion services. *Transfusion*. 2008; 48:1934-42.
13. Thom KA, Heil EL, Croft LD, Duffy A, Morgan DJ, Johantgen M. Advancing interprofessional patient safety education for medical, nursing, and pharmacy learners during clinical rotations. *J Interprof Care*. 2016; 30:819-22.
 14. Louis MY, Hussain LR, Dhanraj DN, Khan BS, Jung SR, Quiles WR, et al. Improving Patient Safety Event Reporting Among Residents and Teaching Faculty. *Ochsner J*. 2016; 16:73-80.
 15. Roney L, Sumpio C, Beauvais A, Shea EO. Describing clinical faculty experiences with patient safety and quality care in acute care settings: A mixed methods study. *Nurse Educ Today*. 2017; 49:45-50.
 16. Kow AWC, Ang BLS, Chong CS, Tan WB, Menon KR. Innovative Patient Safety Curriculum Using iPad Game (PASSED) Improved Patient Safety Concepts in Undergraduate Medical Students. *World J Surg*. 2016; 40:2571-80.
 17. Roh H, Park SJ, Kim T. Patient safety education to change medical students' attitudes and sense of responsibility. *Med Teach*. 2015; 37:908-14.
 18. Shortell SM, Singer SJ. Improving patient safety by taking systems seriously. *JAMA*. 2008; 299:445-7.
 19. Lynch N, Kerin M. Effect of the World Health Organization Checklist on Patient Outcomes. *Ann Surg*. 2016; 263:e24.
 20. Makary MA, Daniel M. Medical error-the third leading cause of death in the US. *BMJ*. 2016; 353:i2139.
 21. Street RL, Gordon HS, Ward MM, Krupat E, Kravitz RL. Patient participation in medical consultation: Why some patients are more involved than others. *Med Care*. 2005; 43:960-9.
 22. Wang F, Song Z, Zhang W, Xiao Y. Medical humanities play an important role in improving the doctor-patient relationship. *Biosci Trends*. 2017;11: 134-7.
 23. Pittet D, Allegranzi B. Role of Hand Hygiene in Healthcare-associated Infection Prevention. *J Hosp Infect*. 2009; 73:305-15.
 24. Catchpole KR, Giddings AEB, Wilkinson M, Hirst G, Dale T, de Leval MR. Improving patient safety by identifying latent failures in successful operations. *Surgery*. 2007; 142:102-10.
 25. Anderson E, Thorpe L, Heney D, Petersen S. Medical students benefits from learning about patient safety in an interprofessional team. *Med Educ*. 2009; 43:542-52.
 26. Kleber C, Giesecke MT, Tsokos M, Haas NP, Buschmann CT. Trauma-related preventable deaths in Berlin 2010: Need to change prehospital management strategies and trauma management education. *World J Surg*. 2013; 37:1154-61.
 27. Okuyama A, Wagner C, Bijnen B. Speaking up for patient safety by hospital-based health care professionals: a literature review. *BMC Health Serv Res*. 2014; 14:61.
-