



Letter to Editor

Reflection in Emergency Medicine and Surgery Education

Amin Beigzadeh¹ , Mozhdeh Delzende² , Sara Heydari³ , Zahra Amouzesi⁴  

¹ Assistant Professor, Education Development Center, Sirjan School of Medical Sciences, Sirjan, Iran

² Instructor, Department of Nursing, Sirjan School of Medical Sciences, Sirjan, Iran

³ Assistant Professor, Department of Medical Education, Medical Education and Development Center, Shahid Sadoughi University of Medical Sciences, Yazd, Iran

⁴ Assistant Professor, Department of Nursing, School of Nursing and Midwifery, Cardiovascular Diseases Research Center, Birjand University of Medical Sciences, Birjand, Iran

Corresponding author:

Tel: +989158653091

Email: amouzeshez9039@gmail.com

Dear Editor,

Scholarly literature is replete with many papers on the topic of incorporating reflection in Medical Education, and Graduate Medical Education (GME) considers reflection as a critical component of learning (1). In the field of Emergency Medicine Education, reflection plays a pivotal role as timely and precise actions in emergency situations are crucial. Emergency physicians and residents need to know how to reflect to handle unexpected situations, think quickly about what to do, and solve challenging clinical problems. On the other hand, the development of technical skills is crucial for surgical residents. Self-assessment, giving feedback, reflection, and self-directed learning are key elements in surgical training. Self-assessment and giving feedback also help to strengthen reflection (2).

The role of reflection in Emergency Medicine and Surgery Education

The emergency department, by its nature, is a critical setting (3). The emergency physicians and residents are not only faced with a constant stream of complex and often unpredictable situations but also they need to act promptly to save lives. In this regard, apart from the fact that emergency physicians and residents must keep abreast of any developments in their field, they also need to integrate existing knowledge structures with new information to provide optimal care (4). In addition, their ability to make rapid decisions, manage uncertainty, and respond effectively to dynamic situations is paramount. However, the inherent challenges of the field of Emergency Medicine can also lead to emotional and cognitive strain, which can hinder the learning process and impede personal growth (1). This is where the practice of reflection becomes invaluable.

Citation: Beigzadeh A, Delzende M, Heydari S, Amouzesi Z. Reflection in Emergency Medicine and Surgery Education. *J Surg Trauma*.2024;12(1): In Press

Received: July 11, 2024

Revised: July 13, 2024

Accepted: July 13, 2024

In a similar line, in the surgical field, given the busy nature of the surgical department and the number of surgeries, it can be difficult for surgeons to find time for self-assessment and reflect on activities and achievements. However, the process of reflection is an integral part of professional development as a surgical resident and continued growth as a practicing surgeon (5). Reflection is a cognitive process that helps emergency physicians and surgeons reflect on experiences leading to a mastery over tangible and intangible skills of medicine (6). Reflection allows physicians to be more aware of their performance, enabling them to recognize shortcomings and make adjustments to their attitudes, behaviors, and knowledge (4). The importance of reflection has also been highlighted by well-rounded learning theories such as Kolb's experiential learning theory (7) and Mezirow's transformative learning theory (8). By the same token, reflection is a process in which one's actions, decisions, and experiences are examined thoughtfully in order to gain new insights to improve future performance and foster personal and professional development. This process involves critical self-analysis, the consideration of alternative perspectives, and the integration of theoretical knowledge with practical experience (4). By engaging in reflection, emergency medicine and surgery practitioners can develop a more nuanced understanding of the factors that influence their decision-making, the emotional and cognitive responses they experience, and the impact of their actions on patient outcomes (9).

Techniques for incorporating reflection into Emergency Medicine and Surgery Education

Integrating reflection into Emergency Medicine and Surgery Education requires a multifaceted approach, and research indicates that reflection is a skill that can be developed (4,5).

In this section, we come up with some techniques of reflection that apply in the field of Emergency Medicine and Surgery Education.

Reflective journaling is promoted in emergency medicine and surgery training to support practitioners in documenting their experiences, emotions, and areas for personal development in a structured manner (10). In addition, reflective portfolios are useful for capturing a learner's experiences and thoughts, which can be beneficial for self-assessment, setting goals, and furthering professional development (11). By the same token, integrating reflective practices into simulation-based training can assist emergency medicine and surgery professionals in evaluating their skills, pinpointing areas needing development, and considering different strategies for patient treatment (12). Last but not least, integrating opportunities for reflection within the core curriculum of emergency medicine and surgery education, such as through case studies, written reflections, or structured reflection exercises, can guarantee that the development of reflective skills is a key aspect of the learning experience (13). In conclusion, reflection is a crucial element in the field of Emergency Medicine and Surgery Education, serving as a powerful tool for enhancing the learning experience and fostering personal growth among medical professionals. As evidenced, the healthcare workforce is a critical asset for organizations, playing a significant role in promoting and enhancing the organization (14). Therefore, this workforce must possess reflective skills to drive organizational improvement. In the emergency and surgery department setting, the ability to reflect can have a profound impact on the acquisition of clinical competence as well as the lives of patients. Medical professionals need to know about the techniques on hand and use them to be able to have reflective practice.

Conflict of Interest

There is no conflict of interest to be declared.

References

1. Winkel AF, Yingling S, Jones AA, Nicholson J. Reflection as a learning tool in graduate medical education: a systematic review. *J Grad Med Educ.*

2017;9(4):430-439.

2. Ganni, S, Botden, S. M, Schaap, D. P., Verhoeven, B. H., Goossens, R. H., & Jakimowicz, J. J. "Reflection-before-practice" improves self-assessment and end-performance in laparoscopic surgical skills training. *J Surg Educ.* 2018; 75(2), 527-533.

3. Beigzadeh, A., Naghibzadeh Tahami, A., Rezaei, H., Bahman bijari, B., Nazarieh, M., Askari, S. M. S. Epidemiology of trauma in Shahid Bahonar hospital in Kerman. *Journal of Emergency Practice and Trauma.* 2016; 2(2): 33-36.

4. Sandars J. The use of reflection in medical education: AMEE Guide No. 44. *Medical teacher.* 2009 Jan 1;31(8):685-695.

5. McGlinn, E. P., & Chung, K. C. A pause for reflection: incorporating reflection into surgical training. *Ann Plast Surg.* 2014; 73(2), 117-120.

6. Beigzadeh A, Bahaadinbeigy K, Adibi P, Yamani N. Identifying the challenges to good clinical rounds: A focus-group study of medical teachers. *J Adv Med Educ Prof.* 2019;7(2):62-73.

7. Kolb DA. *Experiential Learning: Experience as the Source of Learning and Development.* Englewood Cliff, NJ: Prentice Hall, 1984.

8. Mezirow J. *Transformative Dimensions of Adult Learning.* San Francisco, CA: Jossey-Bass,

1991.

9. Bernard AW, Gorgas D, Greenberger S, Jacques A, Khandelwal S. The use of reflection in emergency medicine education. *Acad Emerg Med.* 2012;19(8):978-982.

10. Enenbach LA. Exploring reflective journaling, clinical stress, and professional confidence in undergraduate pediatric nursing clinical (Doctoral dissertation, Doctoral dissertation). 2016.

11. O'Sullivan P, Greene C. Portfolios: possibilities for addressing emergency medicine resident competencies. *Academic emergency medicine.* 2002;9(11):1305-1309.

12. Weile J, Nebsbjerg MA, Ovesen SH, Paltved C, Ingeman ML. Simulation-based team training in time-critical clinical presentations in emergency medicine and critical care: a review of the literature. *Advances in Simulation.* 2021; 6:1-2.

13. Grant A, McKimm J, Murphy F. *Developing reflective practice: a guide for medical students, doctors and teachers.* John Wiley & Sons; 2017.

14. Rezaei H, Bahmanbijari B, Beigzadeh A, Askari S M S, Khadir E. Job satisfaction and organizational commitment of nurses in teaching hospitals affiliated to Kerman University of Medical Sciences. *Iranian Journal of Medical Education.* 2017; 17: 245-250.

Previous study showed that extensive burn patients might undergo hypovolemic shock, followed by septic response (10). Moreover, the large amount of devitalized tissues occur invasive infection. Therefore, it is necessary to strengthen resuscitation in shock stage and prevention of infection and MODS. In this report, the patient received good first-aid treatment and was transported to ICU promptly. In order to improve the quality of shock resuscitation: the patient had acute respiratory failure, a tracheotomy was performed in time, and early ventilator support was used, so the hypoxic state was fundamentally corrected. In addition, active anti-infective, symptomatic and supportive treatments were performed for this patient, including maintenance of hemodynamic stability, nutritional support and correction of anemia and hypoproteinemia. The effective supportive therapy is beneficial to maintain the organ function of severely burned patients, enhance the immune mechanism, control infection, and promote wound healing.

Moreover, it was worth mentioning that in this report, the burn patients underwent wound infection and systemic edema due to absorption of toxins from the wound into the blood to increase systemic vascular permeability. After the infection is initially controlled, the escharectomy and skin grafting can prevent further infection and obtain a better clinical prognosis.

However, after removing the necrotic tissue, most skin grafts neither survive nor spread on fresh wounds. It leads to more wounds after surgery and increases the risk of wound infection.

Therefore, the doctor performs the operation on the patient in stages. During the hospitalization, actively and effectively dealt with wounds promptly, and scabs were cut and allograft skin covered the wound to prevent further infection, followed by autologous skin grafting, which could increase the survival rate of skin grafts and shorten the time for wound coalescence.

Conclusion

The patients with severe burns with MODS have high risk of death, which deserves the attention of clinicians. Active and effective anti-infection and skin grafting can effectively promote wound healing. Moreover, working environment should be improved enough to ensure that the workers are free of injury, and the workers should also pay attention to self-protection.

Acknowledgement

We sincerely thank the doctors and nurses in Affiliated Hospital of Zunyi Medical University for maintenance of detailed medical records. This study was granted by National Natural Science Foundation of China (Grant No. 81560534, PI: Xiuquan Shi).

Conflict of Interest

There is no conflict of interest to be declared.

References

1. National Health Commission of the People's Republic of China. China Health Statistics Yearbook in 2019. Beijing: Peking Union Medical College Press; 2019. (in Chinese)ISBN: 978-7-5679-1323-3.
2. Legrand M, Dépret F, Mallet V. Management of burns. *N Engl J Med*. 2019;381(12):1188-1189.
3. American Burn Association. Burn incidence and treatment in the United States: 2016. [Internet]. August 2020; Available from: <http://ameriburn.org/who-we-are/media/burn-incidence-fact-sheet>
4. Sibbald RG, Ayello EA. Deep burns: comparing the developed and developing world. *Adv Skin Wound Care*. 2019;32(1):5.
5. Wanjeri JK, Kinoti M, Olewe THAM. Risk factors for burn injuries and fire safety awareness among patients hospitalized at a public hospital in Nairobi, Kenya: A case control study. *Burns*. 2018; 44(4):962-968.
6. Garcia LP, Huang A, Corlew DS, Aeron K, Aeron Y, Rai SM, et al. Factors affecting burn contracture outcome in developing countries:

areview of 2506 patients. *Ann Plast Surg.* 2016;77(3):290-296.

7. Yen CI, Chiou MJ, Kuo CF, Liao HT. Determination of risk factors for burn mortality

based on a regional population study in Taiwan. *Burns.* 2018;44(6):1591-1601.

8. Hazeldine J, Naumann DN, Toman E, Davies D, Bishop JRB, Su Z. Prehospital immune