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Educating Beyond the Clinical: A Simulation-Based Pedagogical Model for Socio-Emotional Skill Development in Medical Students

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ABSTRACT

Contemporary medical education faces the challenge of balancing technological advancement with the need for more humanized practices. The increasing technification of medicine, along with factors such as work overload and poor communication skills, has contributed to the loss of empathy and a rise in psychological distress among medical students. In this context, the development of socio-emotional skills (SES)—such as empathy, teamwork, doctor-patient relationship, medical confidentiality, effective communication, and self-Knowledge—becomes essential.

This experience report describes the implementation of a socio-emotional realistic simulation activity designed for final-year medical students at FMB-UNESP. The initiative aimed to create an experiential space for the development of behavioral competencies essential to medical practice, such as breaking bad news, expressing empathy in cases of treatment non-adherence, and conflict management.

Activity involved trained professional actors performing patients in complex scenarios, allowing students to engage in practical experiences and reflect about their own emotional and behavioral responses. The methodology included an initial checking-in, topic briefing, simulation, and collective debriefing. Collaboration between doctor and psychologist coordinating activity provides a safe and supportive environment in which feelings can be recognized and shared, as students discuss ethical and communication challenges.

The main difficulties identified among students included: managing silence, interpreting non-verbal signs of distress, asking open-ended questions, and dealing with intense emotions such as anger and frustration. Debriefing highlighted the importance of recognizing learning gaps, personal vulnerabilities, and the variability of individual coping mechanisms when facing human suffering. Simulation created a safe environment for support and sharing, aimed at developing socio-emotional skills.

It is concluded that socio-emotional realistic simulation is a powerful pedagogical strategy to promote empathy, effective communication, and compassionate care in medical practice, contributing to the formation of more humane physicians who are better prepared for the emotional challenges of clinical work.

Introduction

Contemporary medical education faces the challenge of balancing technological advancement—especially following the development of artificial intelligence—with the need for a humanized and compassionate clinical practice. While the technification of medicine has led to remarkable progress in the diagnosis and treatment of diseases, it can also result in devaluation of human interaction and patient's subjectivity. There is a growing mistrust of the medical profession, often stemming from communication breakdowns, that can be caused by work overload, the technologization of healthcare, lack of empathy among professionals, medical errors, or even the perception of healthcare as a commodity[1].

The development of socio-emotional skills (SES)—such as empathy, communication, and self-awareness, self-regulation—emerges as a crucial element for the integral medical training[2]. Studies have shown a trend of declining empathy throughout medical school[3]. This phenomenon can be attributed to multiple factors, including low sense of well-being, depression, competition and fear of failure, exposure to suffering and death, reduced quality of life, and difficulty coping with one's own emotions. Medical academic environments are often associated with high levels of stress, excessive workload, anxiety, burnout, and mental distress among students[4,3,5]. The low capacity for empathy may compromise the doctor-patient relationship and weaken one of the pillars of medical practice: compassion. Without compassion, physicians may become detached from emotional bonds and human suffering, prioritizing economic aspects over human values. A lack of compassion can impair clinical reasoning, diagnosis and treatment planning, and is associated with patient and family dissatisfaction as well as increased healthcare costs[6]. Furthermore, In this regard, the development of socio-emotional skills can serve as a protective factor for the mental health of future physicians, promoting well-being and resilience[7].

In this scenario, it is essential to invest in educational interventions that promote the development of socio-emotional skills and the teaching of empathy in undergraduate health programs. Programs like RULER have proven effective in fostering emotional intelligence, improving academic and interpersonal performance, and reducing risk behaviors and conduct problems[8]. By promoting emotional awareness, emotional regulation, and the development of healthy relationships, it is possible to educate more humanized, competent professionals who are committed to comprehensive patient care[1].

It is widely recognized that medical students should be systematically and continuously exposed, throughout their graduate period, to situations involving empathy and the doctor-patient relationship[4]. Such continuous exposure allows students to develop a deeper and more nuanced understanding of the complexities inherent in patient care, preparing them for the emotional and ethical challenges of medical practice.

There are various pedagogical strategies for teaching empathy, each with its own strengths[4,8,9,2].

Theoretical approaches: Lectures and discussions on the concepts of empathy, emotional intelligence, and communication can provide a solid knowledge base.

- **Real case discussions**: Discussions of real-life cases, patient narratives, or films where the doctor-patient relationship is central allow students to analyze emotional dynamics in complex situations and learn from the successes and mistakes of experienced professionals.
- **Simulations**: Clinical case simulations and role-playing exercises allow students to practice communication and empathy skills in a safe, controlled environment. These simulations are especially useful for developing the ability to understand patients' perspectives and respond to their emotional needs.
- **Focus groups**: Focus groups and group discussions provide a space for students to share experiences, reflect on their feelings, and learn from one another. This approach fosters self-awareness and emotional intelligence, while strengthening a sense of community and support among students.

By combining different pedagogical approaches, in continuously exposed activities, medical programs can create a rich and diverse learning environment that promotes development of socio-emotional skills and prepares future physicians to deliver compassionate, effective, and patient-centered care[10].

The importance of incorporating scenarios aimed at fostering empathy and socio-emotional skills in medical education is widely recognized[11]. In recent years, there has been a growing number of publications exploring diverse strategies to

achieve the goal of teaching empathy to medical students. In this context, the present report aims to contribute to the ongoing discourse in medical education by presenting an experience that has been implemented for over three years. The report offers a detailed description of the strengths and challenges encountered in the design, implementation, and development of this educational activity, with the intention of informing and enriching current pedagogical practices related to empathy training.

Objective of the Experience Report

The objective of this experience report is to share the structure of a socio-emotional skills teaching scenario, the bureaucratic process involved in integrating this pedagogical strategy into the undergraduate medical curriculum, and major insights about students' knowledge and challenges in SES.

Methods

This study presents a detailed account of the implementation of a realistic simulation-based teaching and learning activity, designed to foster the development of socio-emotional skills in final-year medical students. The activity has been conducted regularly since August 2021 and is the result of an ongoing pedagogical initiative. The narrative is grounded in the reflective analysis conducted by the faculty members who have been involved in this strategy since its inception. The methodological approach includes a comprehensive description of the planning, execution, and evaluation processes, highlighting the educational context, the intended learning outcomes, and the perceived impact on students' emotional and professional growth. The reflective insights of the instructors serve as the primary source of analysis, providing a deep understanding of the pedagogical implications and outcomes of the simulation experience.

Report

Where We Started

It all began with the realization that our medical training lacked an experiential environment that allowed students to discuss behavioral skills essential to medical practice, such as active listening, communication, empathy, leadership, teamwork, conflict resolution, physician-physician and physician-patient relationships, and medical ethics, among others. One member of our team already had experience with a learning model from other universities, based on realistic simulations of various themes to foster the development of socio-emotional skills.

Financial Feasibility

A key factor in implementing socio-emotional realistic simulation was the hiring of actors capable of improvisation and trained to perform roles in simulated scenarios. The presence of professional actors ensured a high level of realism, allowing students to interact with simulated patients who expressed a wide range of emotions and behaviors.

Integrating the Activity into the Formal Curriculum

Incorporating a pedagogical moment focused on socio-emotional skills development into the Medical School's curriculum posed significant challenges. A recent curricular reform had already established modules and rotations with defined hours and themes. Although socio-emotional topics were addressed throughout the course—especially in the communication, psychology, and oncology components—these concepts were often approached theoretically and during stages in which students had not yet engaged directly with patient care in a meaningful way.

This initiative could revisit and deepen some of the content offered in the first three years of medical school, bringing it back at a later, more advanced stage, when challenges of the physician-patient relationship are more frequent and tangible. For this purpose, the activity was implemented in the final year of medical school (sixth year), ensuring that students had already accumulated experience from the first two years of internship (fourth and fifth years), which allowed for more mature perceptions and engagement during the simulations. Beyond seven clinical stages: Pediatrics II, Women's Health II, Emergency Medicine II, Gastroenterology, Public Health, Neurology, Emergency Medicine III, and Internal Medicine III, the Internal Medicine III rotation was selected for this activity, with coordinators' support and flexibility in scheduling. The activity is conducted on two Tuesdays per rotation, with half-groups participating in each session. This way, the activity is repeated 14 times per year, always with groups of six to seven students.

Institutional support was a key factor in making the project feasible. The FMB-UNESP administration provided both administrative and financial backing,

including funding for the hiring of actors to carry out the clinical simulations.

Hiring and Training of Actors

Selection of actors included the contact with a local theater school, looking for students or professional actors. Located in a small town, with no history of collaboration between arts professionals and health education programs, it has been a challenge to find the appropriate ways to arrange the financial transaction.

Actor training was conducted by one of the physicians responsible for the project and involved presenting the scene's theme, character development, life history, clinical context, and emotional state. Actors are also informed about the objectives of the activity, the approaches expected from students, the main dilemmas that may arise during interaction, and the conceptual aspects to be explored. Each actor is encouraged to build the character with creative freedom, incorporating their own historical and cultural perceptions, and to use improvisation in response to student behavior during the simulation. During training, actors are also guided on possible scene developments depending on the students' actions.

The teaching team selected two scenes to be developed each year. These scenes were chosen to present students with a variety of challenges in building rapport, providing emotional support, developing empathy and compassion, preventing and managing conflict, and addressing barriers to medication adherence. Over the past two years, the selected themes have been: delivering bad news and demonstrating empathy in situations of treatment non-adherence and conflict.

TRAINING EXAMPLE

Scene 1 – Breaking Bad News

Setting: Doctor's office during a scheduled routine consultation. **Patient:** 32-years-old woman with a history of colon cancer, who underwent partial colectomy (colostomy) two years ago, followed by chemotherapy and radiotherapy. After a year and a half, she developed liver metastases and underwent another round of chemotherapy. **Clinical Situation:** The patient returns for a routine outpatient follow-up to review recent routine staging test results, with the expectation of having her colostomy reversed. **Objective of the Activity:** Students must attend to the patient, communicate tests' results which presented metastases in various organs and systems, using strategies as SPIKES[11], and support her emotional distress using palliative care principles.

Scene 2 – Empathy and Adherence in a Conflict Situation.

Setting: Medical ward, hospital discharge briefing. **Patient:** Woman with a history of type I diabetes since adolescence, hospitalized for the fourth time in two years due to diabetic ketoacidosis. After stabilization, she is ready for discharge and outpatient follow-up. **Clinical Situation:** The patient is not committed to her treatment, refuses the prescribed medications, and displays confrontational and disrespectful behavior toward the medical staff. **Objective of the Activity:** Students must identify the changes in treatment needs over the past two years, asking the patient about life aspects to understand the reasons behind the hospitalizations (e.g., the death of her mother), and develop empathy despite her aggressive and reactive behavior. They are expected to acknowledge her suffering and build a trusting relationship that allows for negotiating the prescription until her follow-up appointment.

Simulation Methodology

The activity takes place over the course of an afternoon and is divided into four main phases: 1. Welcome and Purpose, 2. Briefing- Introduction to the Theme, 3. Simulation- Scene, and 4. Debriefing- Group Reflection.

Welcome and Purpose two instructors—one physician and one psychologist—welcome the group, emphasizing the importance of socio-emotional skills in clinical practice. The activity's gols was discussed, highlighting the need for a safe, non-judgmental environment and openness to listening and acknowledging the various challenges involved in the physician–patient interaction.

Briefing – Introduction to the Theme:Initially, a formal lecture was given about the topic of the scene, covering theoretical concepts and clinical tools, and students were encouraged to recall memories of similar situations they had experienced or observed—whether positive or negative. Over time, the lecture was replaced for a more informal conversation about the theme of the scene, prioritizing students' lived experiences, whether

personal or from medical training, and revisiting tools they had previously encountered.

Simulation – The Scene: The scene takes place in the Skills Lab of FMB-UNESP. Half of the group (three or four students) receives basic information about the patient, the scenario, clinical situation, and the activity's goals. After a brief discussion and preparation, they enter the simulation room while coordinators and the rest of the group observe from outside of the one-way mirror room. The coordinator signals the end of the scene with a sound cue.

Debriefing – Group Reflection: All participants came back together in a circle. The initial discussion focuses on the feelings experienced by the students who participated directly in the scene. Coordinators guide the conversation, offering their own insights and questions when appropriate. Students who observed the scene also share their perspectives, thoughts on their colleagues' performances, and suggestions for unexplored approaches or alternative strategies. The coordinators provide feedback, highlighting both strengths and areas for improvement and stimulate main reflections and sharing thoughts.

Critical Reflection

Socioemotional realistic simulation has increasingly established itself as an effective tool for developing technical, cognitive, and behavioral competencies among healthcare students[13,14]. Its application in medical education provides a safe, controlled, and reflective approach to managing complex clinical situations. It supports the development of expanded and humanized clinical reasoning, as highlighted by Prieto et al.[15].

The reported experience confirms its educational potential within the medical curriculum, particularly in the final year of undergraduate training and with the participation of the psychology department, fostering a multiprofessional perspective.

This activity has enabled the development of empathy and communication skills—essential competencies that reflect a humanized approach to medical education[16]. (Moreira et al., 2025). Such training aligns with comprehensive care, which integrates the biological, psychological, and social dimensions of individuals in the health–illness process[17] (Menezes et al., 2024).

There is broad consensus in the literature regarding the importance of effective communication in healthcare. This is reinforced by the Brazilian National Curriculum Guidelines for Medical Education, which state that graduates should be prepared to communicate using both verbal and non-verbal language, with empathy, sensitivity, and interest, promoting person-centered care and a shared, horizontal relationship with the patient[18, 19].

In the experience described, teaching non-verbal communication (such as body language and silence) has proven to be a challenge. During the post-scene discussion, many students report difficulty maintaining a supportive silence during the simulation, especially after the patient receives distressing news[20]. They describe feelings of discomfort or an urge to respond in a way that might ease the patient's suffering, which leads to what is often experienced as an awkward silence[20].

Another difficulty observed in the discussions and simulations relates to recognizing body language. In one of the scenes, the patient faints upon realizing the gravity of the news. Despite showing physical signs of distress (such as a blank stare, mental confusion, and muscle weakness), students were unable to anticipate the fainting episode and often did not know how to respond to support the patient in that moment.

Additionally, even in verbal communication, students often struggle to ask open-ended, complex, or sensitive questions, such as: *"What is important to you?"*, *"What does quality of life mean to you?"*, or *"What are your fears?"*. Students frequently rely on preconceived notions of what the patient might be feeling or needing, without creating space for the patient to express their own emotions or needs. From the perspective of Narrative-Based Medicine, this raises the question of why physicians do not listen to their patients' stories and what the limits of objectivity are in the clinical method[21].

Given these difficulties in listening to the patient, empathy—defined as a multidimensional skill that enables one to perceive and understand another's feelings from their perspective[21]—was also compromised. Students often expressed feelings of anger, frustration, or indifference toward the patient, with thoughts such as: *"How can she not follow my recommendations?"*, *"Doesn't she realize she'll be hospitalized again if she doesn't comply?"*, or *"If she won't follow treatment, it's her problem!"*

A previous study by Keskitalo et al. discussed the undergraduate student's emotional variations when exposed to simulation based education highlighting the positive emotions after debriefing[22].

This study also revealed variables that may explain emotional variations. The article provides practical implications of the findings for simulation-based medical education and higher education in general.

As discussed by Carelli and Pompilio[21] in relation to "the exercise of power," students recognized their difficulty in listening to the patient, in acknowledging the patient's knowledge and pain—particularly in situations involving direct confrontation—and associated this struggle with the "medical authority" they've been taught to assume.

Empathy involves various domains, including cognitive, affective, and emotional[23]. Truly putting oneself in another's shoes is a well-documented challenge in literature[23], and this is echoed in the experience described here. Undergraduate students admitted to lacking the tools to deal with someone else's suffering, often unsure of how to help, which led to feelings of helplessness and frustration. A previous study, based on undergraduate students' narratives following simulation-based education, highlighted the potential of simulation to help identify the pathways that contributed to successful task performance, as well as the importance of developing strategies to manage fallibility as an inherent aspect of professional practice[24].

The timing of the reported activity—during the final year of medical school—acknowledges the knowledge students have accumulated through their experiences up to that point, providing an opportunity for the sharing and reflection on clinical practice, thereby making the learning content more meaningful and transformative for future professional practice, as described by Freire, in Pedagogy of Oppressed, in 1987[25].

While the ethical and humanistic aspects of medical training addressed in realistic simulation are not exclusive to the field of psychology, supporting students in the process of self-awareness is closely aligned with psychological expertise. Recognizing one's own strengths and vulnerabilities contributes to the development of self-efficacy—the personal judgment of one's ability to act and persist in efforts to successfully achieve a goal[26]. It is not uncommon for students to acknowledge difficulties experienced during the scene, even if they previously considered themselves skilled in similar situations.

Throughout the post-simulation reflections, it has become clear that traditional training environments do not offer systematic opportunities for students to recognize and explore their doubts, challenges, or personal difficulties. The proposed methodology, when integrated with a safe and supportive environment in which challenges and vulnerabilities can be openly shared and discussed, promotes a deeper awareness of the complex dynamics inherent in interpersonal and physician-patient relationships. This, in turn, enhances the development of new competencies and skills through reflective engagement with lived experiences. This is where the contribution of the psychology department is particularly valuable.

Final Considerations

The experience confirms the educational value of socioemotional realistic simulation in developing key competencies for clinical practice, particularly in the final year of medical training. It fosters the integration of cognitive, emotional, and communicative skills essential for person-centered care. The involvement of the psychology department adds depth by promoting self-awareness and reflective capacity, supporting the development of professional self-efficacy. Difficulties encountered—such as managing silence, interpreting non-verbal cues, and engaging in narrative-based communication—highlight critical gaps in traditional curricula. When implemented in a structured and psychologically safe environment, this methodology enables the development of more humanized and effective clinical reasoning, aligned with current pedagogical and ethical frameworks in medical education.

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References:

1. Hsu WC, Fuh LJ, Liao SC. Tickling the heart: integrating social emotional learning into medical education to cultivate empathetic, resilient, and holistically developed physicians. *Front Med*. 2024; 11:1368858. doi:10.3389/fmed.2024.1368858.

2. Ibrahim T, Silva M. A importância do desenvolvimento de habilidades sociais na formação de estudantes de medicina: uma revisão sistemática. *Rev Tópicos*. 2024;2(8). ISSN: 2965-6672.

3. Neumann M, Edelhäuser F, Tauschel D, et al. Empathy decline and its reasons: a systematic review of studies with medical students and residents. *Acad Med*. 2011 Aug;86(8):996-1009. doi:10.1097/ACM.0b013e318221e615.

4. Zhou YC, Tan SR, Tan CGH, et al. A systematic scoping review of approaches to teaching and assessing empathy in medicine. *BMC Med Educ*. 2021;21:292. doi:10.1186/s12909-021-02697-6.

5. Dyrbye LN, Thomas MR, Shanafelt TD. Systematic review of depression, anxiety, and other indicators of psychological distress among U.S. and Canadian medical students. *Acad Med*. 2006;81(4):354-373.

6. Malenfant S, Jaggi P, Hayden KA, Sinclair S. Compassion in healthcare: an updated scoping review of the literature. *BMC Palliat Care*. 2022; 21(1):80. doi:10.1186/s12904-022-00942-3.

7. Teixeira JIS, Guimarães ABM, Vasconcelos MIO, et al. Competências socioemocionais na formação do enfermeiro: representações de estudantes, docentes e enfermeiros assistenciais. *Contrib Cienc Soc*. 2024;17(5):e6768. doi:10.55905/revconv.17n.5-110.

8. Queiroz TSC. Adaptação de um programa de desenvolvimento de habilidades socioemocionais para universitários: implementação e avaliação em estudantes de medicina [dissertação]. [Brasil]:; 2020.

9. Chua JYX, Ang E, Lau STL, Shorey S. Effectiveness of simulation-based interventions at improving empathy among healthcare students: a systematic review and meta-analysis. *Nurse Educ Today*. 2021; 104:105000. doi:10.1016/j.nedt.2021.105000.

10. Sampieri-Cabrera R. Integration of socioemotional competencies in medical training: a case study on the assessment of an educational intervention in a disciplinary course. *MedEdPublish*. 2024;14:40. doi:10.12688/mep.20376.1.

11. Stepien, K. A., & Baernstein, A. (2006). Educating for empathy: A review. *Journal of General Internal Medicine, 21*(5), 524–530. https://doi.org/10.1111/j.1525-1497.2006.00443.x.

12. Baile WF, Buckman R, Lenzi R, Glober G, Beale EA, Kudelka AP. SPIKES-A six-step protocol for delivering bad news: application to the patient with cancer. *Oncologist*. 2000;5(4):302-311. doi:10.1634/theoncologist.5-4-302.

13. Coelho DL, Amaral RC, Silva IC, et al. Realistic simulation and medical students' performance in the Advanced Cardiac Life Support course: a comparative study. *Adv Physiol Educ*. 2024;48(1):61-68. doi:10.1152/advan.00113.2023.

14. Lanza-Postigo M, Abajas-Bustillo R, Martin-Melón R, Ruiz-Pellón N, Ortego-Maté C. The effectiveness of simulation in the acquisition of socioemotional skills related to health care: a systematic review of systematic reviews. *Clin Simul Nurs*. 2024;92:101547.

15. Nápoles Prieto Y, Rojas Sánchez GA, Arturo Puga García A. The discipline of medical psychology in the ethical-humanistic education of medical students. *Semin Med Writ Educ* [Internet]. 2023 Dec 29 [cited 2025 Apr 29];2:42. Available from: https://mw.ageditor.ar/index.php/mw/article/view/15

16. Moreira L. Masterclass in medicine: lessons from the experts. *Fam Med*. Published April 11, 2025. doi:10.22454/FamMed.2025.358983.

17. Menezes MCD, Rocha SR, Sá L, Aquilante A. "The most used remedy in medicine is the doctor himself": comprehensive care and professionalism in medical training. *Trab Educ Saúde*. 2024;22: e02905276. doi:10.1590/1981-7746-sol2905.

18. Grosseman S, Hokama NK, Cruvinel AFP, et al. Consenso Abem para o ensino de comunicação nas escolas médicas brasileiras. *Rev Bras Educ Med*. 2022;46(3):e103. doi:10.1590/1981-5271v46.3-20210392.

19. Rocha SR, Romão GS, Setúbal MSV, Collares CF, Amaral E. Revista Brasileira de Educação Médica 43 (1 Supl. 1):236-245; 2019. *Rev Bras Educ Med*. 2019;43(Supl 1):236-245. doi:10.1590/1981-5271v43suplemento1-20190154.

20. Back AL, Bauer-Wu SM, Rushton CH, Halifax J. Compassionate silence in the patient-clinician encounter: a contemplative approach. *J Palliat Med*. 2009;12(12):1113-1117. doi:10.1089/jpm.2009.0175

21. Carelli FB, Pompilio CE. The silence of the innocents: for a narrative study of medical practice. *Interface (Botucatu)*. 2013;17(46):601-612. doi:10.1590/S1414-32832013005000020.

22. Keskitalo, T., & Ruokamo, H. (2021). Exploring learners' emotions and emotional profiles in simulation-based medical education. *Australasian*

Journal of Educational Technology, 37(1), 15–26. https://doi.org/10.14742/ajet.5761.

23. Batista NA, Lessa SS. Aprendizagem da empatia na relação médico-paciente: um olhar qualitativo entre estudantes do internato de escolas médicas do nordeste do Brasil. *Rev Bras Educ Med*. 2019; 43(Supl 1):2019. doi:10.1590/1981-5271v43suplemento1-20190118.

24. Bearman, M., Greenhill, J., & Nestel, D. (2019). The power of simulation: A large-scale narrative analysis of learners' experiences. *Medical Education, 53*(4), 369–379. https://doi.org/10.1111/medu.13747.

25. Freire P. *Pedagogia do oprimido*. Rio de Janeiro: Paz e Terra; 1987.

26. Vieira LMN, Paiva ACA, Dutra HT, et al. Self-regulated learning and medical education: a literature review. *Rev Bras Educ Med*. 2023;47(1):e01. doi:10.1590/1981-5271v47.1-20220017.

