

Psychological safety in debriefing

La seguridad psicológica en las sesiones de análisis posterior

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Abstract

Psychological safety (PS) has emerged as a key factor in simulation-based medical education, particularly during debriefing sessions, where reflection and feedback are essential for meaningful learning. This narrative review explores the role of PS in facilitating effective debriefing, emphasizing how it influences learners' confidence, emotional regulation, and engagement in reflective dialogue. A literature search was conducted in PubMed and Google Scholar for articles published between 2020 and 2025, using the terms "psychological safety," "debriefing," "medical simulation," and "assertive communication." Findings suggest that establishing PS before and during debriefing fosters inclusion, open communication, and emotional support—conditions that enhance both technical and non-technical skill development. Facilitators play a central role by promoting respectful interactions, empathy, and assertive communication, which strengthen group trust and reduce stress-related barriers to learning. Moreover, structured debriefing models such as PEARLS, Diamond Debrief, and LEARN provide frameworks that sustain PS by integrating reflection, emotional expression, and shared meaning-making. The creation of psychologically safe environments contributes to reduced error incidence, improved teamwork, and the development of resilient, self-aware healthcare professionals. This review underscores the need to integrate PS training into simulation facilitation to ensure reflective, humane, and effective learning experiences in medical education.

Keywords: Psychological safety. Debriefing. Simulation-based education. Assertive communication. Medical education.

Resumen

La seguridad psicológica (SP) se ha convertido en un factor clave en la educación médica basada en la simulación, especialmente durante las sesiones de debriefing, en las que la reflexión y la retroalimentación son esenciales para un aprendizaje significativo. Esta revisión narrativa explora el papel de la SP en la facilitación de un debriefing eficaz, haciendo hincapié en cómo influye en la confianza de los alumnos, su regulación emocional y su participación en el diálogo reflexivo. Se realizó una búsqueda bibliográfica en PubMed y Google Scholar de artículos publicados entre 2020 y 2025, utilizando los términos «seguridad psicológica», «debriefing», «simulación médica» y «comunicación asertiva». Los resultados sugieren que establecer la SP antes y durante el debriefing fomenta la inclusión, la comunicación abierta y el apoyo emocional, condiciones que mejoran el desarrollo de habilidades tanto técnicas como no técnicas. Los facilitadores desempeñan un papel central al promover interacciones respetuosas, la empatía y la comunicación asertiva, lo que fortalece la confianza del grupo y reduce las barreras al aprendizaje relacionadas con el estrés. Además, los modelos de debriefing estructurados, como PEARLS, Diamond Debrief y LEARN, proporcionan marcos que sostienen la seguridad psicológica al integrar la

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reflexión, la expresión emocional y la construcción compartida de significado. La creación de entornos psicológicamente seguros contribuye a reducir la incidencia de errores, a mejorar el trabajo en equipo y al desarrollo de profesionales de la salud resilientes y conscientes de sí mismos. Esta revisión subraya la necesidad de integrar la formación en SP en la facilitación de la simulación para garantizar experiencias de aprendizaje reflexivas, humanas y eficaces en la educación médica.

Palabras clave: Seguridad psicológica. Debriefing. Educación basada en la simulación. Comunicación asertiva. Educación médica.

Introduction

Simulation-based education is associated with significant effects on the knowledge, skills, and behaviors necessary for patient care. It is a continuously studied educational tool that has been shown to have a positive impact on the quality and safety of medical care¹. Learning through simulation consists of several components and phases, all equally important for ensuring success; one of the most relevant being debriefing.

Debriefing is the phase designed to provide feedback, analyze actions, and encourage participants to improve their future performance. During debriefing, students should be guided through the process of reflecting on the decisions they made during the simulation. It is a largely conversational process in which students feel confident expressing their emotions, insecurities, fears, and uncertainties to create a learning experience before actual medical practice¹.

This process ensures increased knowledge among students, acquisition of skills, improved techniques, and a greater confidence in medical practice. However, to guarantee this learning process, the facilitator must have the necessary tools; otherwise, the full implementation of this learning process may be compromised, thereby undermining the simulation's objective¹.

One of these tools is psychological safety (PS). According to Amy Edmondson,² PS ensures that people are not humiliated or punished for expressing ideas, questions, concerns, or mistakes. The following article reviews the importance of PS in debriefing, its theoretical foundations, and its impact on simulation-based education.

Development

Debriefing is a guided reflection that follows a lived experience. Its importance lies in making the student aware of what they have experienced to facilitate objective learning; for this, reflective feedback must be provided. In this part of the simulation, a space is created to share and analyze theoretical concepts and knowledge related to the practice to complement it³. The session must be led by a trained facilitator who uses

evidence-based methods such as training in communication techniques, group management, simulation methodology, and emotional management, as well as having observed the entire simulation with great attention⁴.

Unlike feedback, debriefing is an interactive, two-way conversation in which the focus is on the learner and their internal reflection on their own learning experiences⁵.

It is essential that the facilitator is trained in all the aspects involved in effective debriefing, one of which is PS. PS is responsible for establishing a safe environment for learning and identifying interpersonal risks within a given context; it helps prevent the negative consequences of making controversial or risky interpersonal decisions in the workplace that could adversely affect the simulated scenario⁶. The facilitator is responsible for establishing adequate PS, and this is a skill (specific strategies that the educator can employ) that facilitates the development of conversations without fear of humiliation or mistreatment. In recent years, there has been discussion of mistreatment in the training of medical professionals; these incidents make it even more important to address concepts such as PS, not only in the area of medical simulation but in all aspects of medical training (lectures, in- and out-of-hospital practical training, clinical rotations, simulated scenarios, etc.). In simulation practice, the application of PS is part of the recommendations for pre-briefing and debriefing practices⁶.

To build trust and a high level of PS, debriefing should begin by recognizing and accepting the value that each person can contribute based on their beliefs and competencies. Openness and motivation should be encouraged, and mistakes should not be highlighted abruptly or individually; this is a space for guidance and preparation for the participants. All of this will allow team members to feel valued and connected, helping them overcome uncertainty. Trust must be established with the participants to avoid stressful situations that lead to a rejection of the learning process. But how can one meet all these necessary criteria for establishing PS?

Through basic communication skills such as assertiveness—a communication style open to others' opinions that stems from respect for others and for oneself, where

one confidently and clearly states what one wants. Looking the other person in the eyes without averting one's gaze, maintaining a tone of voice appropriate to the conversation (neither shouting nor speaking too softly), self-confidence, attentiveness, receptiveness, perceptiveness, and sensitivity to grasp the feelings underlying the student's words –and above all, empathy and mutual respect– are communication skills that optimize PS. One can use the paraphrasing rule, which involves summarizing what the student is asking (in case of doubt) before answering the question to ensure mutual understanding and provide a better response to the student⁷.

Mutual respect is a simple concept that will greatly help team members (students and educators) feel a sense of trust where no one is shamed, punished, or rejected for speaking up⁸. It helps people feel capable of recognizing and changing their behavior in response to organizational challenges and teamwork. According to Schein (1996), PS facilitates overcoming defenses and anxiety related to learning⁹.

On the other hand, PS is subject to two sets of factors. The interpersonal elements of the team (which are promoted by the educator) and, on the other hand, individual factors such as self-awareness (individual disposition) or students' self-efficacy, proactive personality, emotional stability, and learning orientation¹⁰.

Much of PS will depend on the individual members' abilities to exchange information and critical ideas; to identify and make explicit small details and problems; as well as their capacity for creativity and performance². PS will also depend on the extent to which team members reflect and communicate openly about objectives, strategies, and processes regarding how they adapt or anticipate current circumstances⁹. While all these individual factors do not depend directly on the educator, they can be promoted by the educator; this is why debriefing models exist.

Among the styles and phases of debriefing are 3-phase models such as Plus-Delta, Good Judgment, 3D Model, and Diamond Debrief, as well as multi-phase models like PEARLS, Team GAINS, and Four E. The goal of these models is for facilitators to create a psychologically safe learning environment.

For example, the Plus-Delta model offers a high degree of PS due to its simplicity, using two columns: Plus (+) for appropriate behaviors, conduct, or actions carried out during the simulation (basically what went well), this encourages learners to feel more confident in themselves so they can later discuss what "went wrong" – specifically, the Delta column for behaviors, attitudes, or actions that need improvement or change in the future¹¹.

The Diamond model consists of three phases: description, analysis, and application of the case. Some of the questions commonly asked are: "What happened?" and "How did this experience make you feel?" Although these questions sound quite simple, they encourage the participant to share the emotions they felt during the simulation¹².

The four E's model proposes that debriefing be conducted through a discussion addressing Events, Emotions, Empathy, and Explanations¹².

Another example is the LEARN model, which is organized into one phase for learning objectives, another for emotions (participants should be asked to express an emotion related to the simulation), another for actions and reflection, and finally one for next steps¹².

These models help us avoid group silence or silence among participants, which would achieve the exact opposite of a psychologically safe environment, where concerns and doubts are kept to oneself due to a lack of trust¹³.

PS is not stable but rather a dynamic and fragile perception; not all team members may experience the same degree of PS at any given moment⁸.

A psychologically safe environment focuses on the relationships among all members involved. Edmonson views it as a cognitive construct at the group level; other authors describe it as one of the components of a positive work climate, which translates into positive relationships within teams.

PS supports and highlights qualities such as creativity, ingenuity, commitment, performance, active participation, information sharing, and self-expression⁸. Some individual traits that contribute to PS include a proactive personality (a disposition to act independently of external forces present in the learning situation), emotional stability, and, finally, a learning orientation –the tendency to focus on developing new skills rather than on the apprehension of demonstrating high performance – all of which can in turn be fostered by the facilitator¹⁴.

The importance of fostering PS in high-performance teams for managing critical situations lies in reducing the incidence of medical errors, which are defined as an unintended act that may include communication problems, errors in planning or executing therapeutic management, deficiencies in medical training, unforeseen failures in the hospital system, among other factors¹⁵.

The protocols developed by high-performance teams to address these critical situations began with the "code heart attack" protocol, implemented in 2015 by the Mexican Social Security Institute. Due to its success, this protocol paved the way for subsequent protocols, which

have been created, used, and practiced thanks to medical simulation, which builds confidence among students and healthcare professionals through the acquisition of technical and non-technical skills, such as communication, care management, knowledge sharing, and workload distribution, contributing significantly to the reduction of errors and fostering well-prepared and organized teamwork; however, it is important to emphasize that all these aspects are possible thanks to the PS established and fostered within the various work teams through the use of assertive communication strategies applied in pre-crisis and post-crisis situations, since assertiveness is a subset of behavioral social skills that function to maximize the probability of achieving certain social objectives¹⁶. As mentioned earlier, some strategies for achieving assertiveness are relatively simple guidelines to follow, such as avoiding both aggressiveness and passivity, being open to ideas, maintaining the desired emotional state, and exhibiting open, comfortable social behavior—which, in addition to being reflected in spoken language, manifests in non-verbal communication such as body posture, gestures, facial expressions, and tone of voice¹⁶.

All of this also reduces employee burnout, as it increases job satisfaction and maintains optimism among team members¹⁵.

In the field of medicine, as in other industries, it is very common to reward employees who do not make mistakes, but no space is ever set aside to discuss them. That is why so many doctors or medical students do not speak up for fear of being embarrassed in front of their peers; mistakes are not corrected, but rather punished, mistreated, or reprimanded without allowing space to discuss them.

Thus, the participants' engagement in the debriefing depends on how educators approach them; if the student feels safe to take risks – for example, by admitting they made a mistake or simply don't know something – then the debriefing in that scenario was successful¹⁷.

In the healthcare field, there is a concept known as “secondary victims,” referring to healthcare workers who, for various reasons, are involved in an adverse event, resulting in physical, emotional, psychological, or occupational repercussions. Some countries, such as the United States, have implemented emotional support measures, such as the Resilience in Stressful Events program at Johns Hopkins Hospital in Baltimore¹⁸.

The metaphor of a “container” or a “holding environment” is a term widely used in psychology that originates from psychoanalytic disciplines and helps simulation educators understand how to support students' risk-taking. In debriefing, this safe container is described as a

place where difficult conversations, emotions, or feedback can be tolerated and transformed into learning opportunities for students¹⁷ (Table 1).

Methodology

A narrative review of the available literature on the impact of PS in debriefing for medical education was conducted. The PubMed and Google Scholar databases were consulted. Publications from 2020 to 2025 in English and Spanish were considered. The terms used were “psychological safety,” “debriefing,” “medical simulation,” and “assertive communication.” We included original articles and previous reviews, as well as studies directly related to the use of simulation and debriefing in medical education. We excluded articles without access to the full text, editorials or letters to the editor, and studies that did not address debriefing and PS in an educational context. We reviewed titles and abstracts to rule out irrelevant articles, then read the preselected articles in full, removed duplicates, and selected those that met the established criteria.

Discussion

Inclusive leadership – that is, the words and actions of leaders when they invite and value the contributions of others – promotes PS. Work design characteristics, such as clarity of roles, interdependence and autonomy, optimal planning and implementation by the instructor, peer support, and mutual trust and respect among students, are all features that contribute to building PS⁶.

PS does not eliminate the feeling or perception of insecurity; it merely allows participants to take risks and experiment within an environment of trust and active listening. Teachers must demonstrate confidence in students' abilities².

It is necessary to identify emotional states through active listening, validate emotions, foster understanding of emotions, accept frustration as a sign of the desire for things to improve, and seek possible solutions through reflection (debriefing)⁶.

Specific management strategies for debriefing include intervening, addressing power dynamics, reconciling unproductive differences, leveraging diverse perspectives, and avoiding and resolving conflicts⁶.

Lee et al.¹⁹ discuss experiences regarding the explicit and implicit practices provided by facilitators during clinical simulations. Several authors have investigated specific strategies to make debriefing a psychologically safe space; for example, this study discusses how

Table 1. Explicit and implicit contributions of psychological safety during debriefing³

Explicit contributions	Implicit contributions
Establish the simulation objectives	Conduct the debriefing in a private setting away from distractions
Commit to confidentiality and transparency during the process	Pause to listen after asking a question
Promote inclusion by allowing all participants to contribute ideas	Accompany questions with non-verbal cues such as eye contact or nodding
Use active listening	Ask open-ended questions to encourage students to engage in dialogue
Offer emotional support and be available if needed	Avoid displays of contempt

creating a space for reflection, building trust, and managing emotional dynamics are key actions for generating a simulation environment where participants can feel heard and protected during debriefing¹⁹.

A qualitative interpretive descriptive study by Turner et al.²⁰ examines what constitutes and sustains student-centered learning in simulation from the perspectives of both nursing students and facilitators. The study was guided by the National League for Nursing's Jeffreys Simulation Theory model, as this model posits that PS is necessary to achieve desired learning outcomes and examines the relationship between the student, the facilitator, and the simulation-based educational strategies employed. In addition, the debriefing model for meaningful learning was used, which is a question-based model that guides reflection, allowing the facilitator to assess how students are feeling and determine whether they are comfortable and engaged through their interactions. It is also a dynamic interaction model where the facilitator can encourage the student to seek clarity or assistance during the simulation if they do not feel supported. Similarly, a physical change of environment was implemented, which consists of conducting the debriefing in a location separate from where the simulation took place, as this fosters PS by removing the pressure associated with the active scenario. The results revealed a "gap" or divergence in thinking between what students and faculty believe constitutes PS in the simulation: while facilitators focus on simulation design, believing that PS "is created" by establishing modifiable risk factors; students focus on the simulation experience (the dynamic interaction with the facilitator) and their

self-reliance, where PS depends on the quality of the relationship and communication. In other words, although facilitators believe they have created a psychologically safe environment through design elements and models, this belief is not always shared by students; rather, it depends more on humanistic interaction and the pre-established trust between students and the facilitator²⁰.

This highlights the need to consider both perspectives to foster PS, thereby promoting deep and meaningful learning²⁰.

The concept of PS in simulation-based education at the undergraduate level was explored by Armijo et al. (2024)⁶ through a small sample of faculty and students who had no prior relationship, concluding that PS is not a facilitator-driven condition but rather a shared, culturally situated process actively shaped by students, faculty, and institutional rituals. They identified five conditions that influence PS in simulation-based education:

- Student capabilities (internal resources: self-confidence, emotional self-regulation, adaptability, and motivation) explain why insecurity, fear of judgment, and personal stressors are associated with the level of participation
- Instructor influence: credibility, empathy, non-judgmental communication tone, quality of feedback, and preparation
- Social and peer dynamics: mutual respect, social trust, collaboration, and support
- Structural and physical environment: planning, clear briefing, scenario flow, and space design
- Institutional and cultural framework: confidentiality agreements and the statement of respect.

This allows us to conclude that improvisation and weaknesses in planning within a given scenario directly influence the PS of that scenario and all students involved. It follows that PS does not depend solely on the facilitator, and just because the instructor believes they have used tools to establish PS during a scenario does not mean they have succeeded in doing so; there are other factors beyond our personal attitude as facilitators that must be managed to effectively establish PS.

This review emphasizes that PS is not simply a "state of mind" or a pedagogical courtesy, but a critical structural component for the success of simulation-based education. Unlike traditional teaching, where error is often penalized, simulation requires students to expose themselves to vulnerability; therefore, without a safe environment, reflective learning is blocked by emotional defense mechanisms.

Despite the clear benefits, implementing PS in medical settings presents deep-rooted cultural challenges.

The traditional hierarchical structure of medicine often conflicts with the horizontal structure necessary for effective PS. Furthermore, individual student factors (self-confidence, emotional stability) can cause different students to perceive varying levels of safety in response to the same stimulus from the facilitator.

It is important to foster students' ability to admit mistakes and express doubts without fear of humiliation; this lays the foundation for a culture of hospital safety. Teams that practice SP in simulation are better prepared to implement critical protocols (such as the heart attack code) and to reduce the incidence of "secondary victims," thereby protecting the mental health of the healthcare professional and the patient's well-being.

Conclusion

Attempting to establish PS from before the simulation begins through to the debriefing helps participants feel included from start to finish. Simple actions such as tone of voice, pace, eye contact, facial expression, incorporating students' perspectives, and making them feel part of the team can determine the course of the simulation. However, different factors are needed to establish a psychologically safe practice, as it is a co-constructed tool that does not depend solely on the facilitator. Although the criteria for creating an environment with PS may be easy to deduce, implementing it may be difficult, since in the present moment of a practice, various stressors can develop at the same time and may lead us to forget our efforts to maintain a psychologically safe environment. Which is why we consider it extremely important to discuss PS in all learning spaces as part of the facilitator's preparation.

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Conflicts of interest

J. Loría-Castellanos is member of the editorial committee of the journal *Anales Médicos*. The other authors declare no conflicts of interest.

Ethical considerations

Protection of human subjects and animals. The authors declare that no experiments on humans or animals were performed for this research.

Confidentiality, informed consent, and ethical approval. This study does not involve personal patient data, medical records, or biological samples, and does not require ethical approval. SAGER guidelines do not apply.

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