Twelve tips for the pre-brief to promote psychological safety in simulation-based education

Somerville, Susan Geraldine; Harrison, Neil Malcolm; Lewis, Steven Anthony

Published in:
Medical Teacher

DOI:
10.1080/0142159X.2023.2214305

Publication date:
2023

Medical Teacher

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/imte20

Twelve tips for the pre-brief to promote psychological safety in simulation-based education

Susan Geraldine Somerville, Neil Malcolm Harrison & Steven Anthony Lewis

To cite this article: Susan Geraldine Somerville, Neil Malcolm Harrison & Steven Anthony Lewis (2023): Twelve tips for the pre-brief to promote psychological safety in simulation-based education, Medical Teacher, DOI: 10.1080/0142159X.2023.2214305

To link to this article: https://doi.org/10.1080/0142159X.2023.2214305

Published online: 21 May 2023.

MEDICAL TEACHER
https://doi.org/10.1080/0142159X.2023.2214305

MEDICAL TEACHER
Taylor & Francis
Taylor & Francis Group

TWELVE TIPS

Twelve tips for the pre-brief to promote psychological safety in simulation-based education

Susan Geraldine Somerville[a*], Neil Malcolm Harrison[b*] and Steven Anthony Lewis[b*]

[a]Centre for Medical Education, University of Dundee, Dundee, Scotland; [b]Clinical Skills Centre, Dundee Institute for Healthcare Simulation, School of Medicine, University of Dundee, Dundee, Scotland

ABSTRACT

It is recognised that simulation-based education can be stressful, and this can impact negatively on learning. A fundamental aspect of facilitating simulation is creating a safe educational environment. Edmondson's seminal work on creating psychological safety among interpersonal teams has been embraced by the healthcare simulation community. Psychological safety is an underpinning philosophy for creating simulation experiences in which learners can develop within a stimulating and challenging yet supportive social atmosphere. Through careful design and thoughtful delivery, the introductory phase of simulation, the pre-briefing, can effectively prepare learners for simulation, reduce learner anxiety, and promote psychological safety, to enhance learning experiences. These twelve tips provide guidance for conducting a pre-brief and promoting a psychologically safe environment for simulation-based education.

KEYWORDS

Simulation-based education; pre-brief; psychological safety

Introduction

A primary aim of healthcare simulation is to engage learners in applying knowledge to activities, rehearsing clinical skills and behaviours so as to learn, demonstrate and maintain competent healthcare practice and improve patient safety (Gaba 2004). To achieve this aim, a fundamental aspect of facilitating simulation is the intention to create a safe educational environment (Ng et al. 2019), where learners can be appropriately challenged according to their level of ability. However, it is recognised that simulation-based education (SBE) can be an emotionally charged and stressful experience which can adversely impact on learning (LeBlanc and Posner 2022). SBE espouses educational safety and SBE also induces stress in learners, in inconsistent and unintended ways, therefore strategies are needed to help educators support learners in SBE (Hamilton et al. 2022). Learners in SBE anticipate being challenged and may experience anxiety, however, recent publications have proposed that being surprised and stressed by a hidden learning agenda or feeling unfairly misled whilst participating in simulations may negatively impact simulation learning experiences (Monteiro and Sibbald 2020; Alinier and Oriot 2022; Brazil et al. 2023).

Existing simulation research evidence has extensively explored modalities of simulation and post-event debriefing, informing and advancing the practice of educators in SBE (Nestel et al. 2019); in contrast, fewer publications have considered the educator's approach to the pre-simulation briefing phase. 'Establishing a safe container' (Rudolph et al. 2014) is arguably the most widely cited publication on pre-briefing, informing social media outputs (http://simulationpodcast.com/), training resources (https://harvardmedsim.org/) and simulation standards publications (https://www.inacsl.org/). Collectively, these resources acknowledge the importance of insightful SBE design and delivery to create a safe, but not a soft, learning environment (Kolbe et al. 2015; Tyerman et al. 2016; Brazil 2023). Correspondingly, there is a need for educators to create sufficiently challenging learning opportunities which reflect the clinical encounters experienced, whilst ensuring the psychological safety of learners so that the potential of SBE can be realised (Groot et al. 2004; Gaba 2013; Auerbach et al. 2018).

Practice points

- The simulation pre-briefing can effectively prepare learners for simulation, reduce learner anxiety, and promote psychological safety.
- The pre-brief is the introductory phase of SBE when an atmosphere of psychological safety can be established, but this is a fluid and dynamic state.
- Intentional design and thoughtful delivery of the pre-brief promotes a psychologically safe environment for the simulation activity, enhancing learning.

Psychological safety

There is increasing awareness of psychological safety and its relevance to SBE and Edmondson's (1999, p. 350) seminal definition of psychological safety as a construct for

CONTACT Susan Geraldine Somerville s.g.somerville@dundee.ac.uk Centre for Medical Education, University of Dundee, Dundee, Scotland
*The three authors are co-first authors.

workplace practice has been widely embraced by the healthcare simulation community:

> *Psychological safety is a shared belief held by members of a team that the team is safe for interpersonal risk taking.*

This assertion acknowledges that collaborative learning events, such as SBE within healthcare teams, are not risk-free, and learners may experience negative emotions and anxiety. Therefore, the potential for causing discomfort should be acknowledged at the outset of simulation pre-briefings, underpinned by expressions of sincere respect for learners by educators (Rudolph et al. 2014; Madsgaard et al. 2022). The impression of psychological safety by learners is not implicit in all healthcare teams which are socially, culturally and context dependent (Edmondson and Lei 2014; Purdy et al. 2022; Eller et al. 2023). Psychological safety in simulation can be cumulative but also fragile, requiring monitoring and modulation by educators (Rudolph et al. 2014; Kolbe et al. 2019).

Simulation design and the pre-brief

The design of simulation may be considered in three phases: the pre-brief, the learning activity, and the debrief, with the pre-brief typically involving introductions to the participants, educators, environment, and proposed activities. In this introductory phase of SBE an atmosphere of educational safety can be established (Kostovich et al. 2020): the pre-briefing can effectively prepare learners for simulation, reduce learner anxiety, and promote psychological safety (Rudolph et al. 2014). Intentional design and thoughtful delivery of the pre-brief promotes a psychologically safe environment for potentially challenging simulation activities, enhancing collaborative learning opportunities for learners (Stephenson and Poore 2016; Brazil et al. 2023). Therefore, these Twelve Tips for pre-briefing (Figure 1) synthesises the published literature and scholarly outputs and are informed by the authors' collective experiences of facilitating simulation in both postgraduate and undergraduate healthcare education in the UK and internationally with cohorts of novice to expert simulation faculty.

Designing the pre-brief

Tip 1

Ensure constructive alignment

The concept of constructive alignment defined by Biggs (1996), advocated the intertwining of constructivist learning theory and instructional design as the fundamental pedagogical underpinning of learning activities in outcomes-based education (Biggs and Tang 2011; Loughlin et al. 2021). The principles of constructive alignment are that learning activities should meet identified stakeholder needs, leading to and aligning with clearly identified learning outcomes integrated within a wider programme of education or a learning journey (Biggs and Tang 2011). Constructive alignment principles impact the pre-brief in simulation in several ways.

It is imperative that simulation facilitators define and share Intended Learning Outcomes (ILOs) with learners. Clarity and transparency in this aspect of SBE design and facilitation aims to ensure learners are appropriately prepared for each new simulation event, promoting psychological safety (Rudolph et al. 2014). Designing a simulation activity with careful consideration to constructive alignment promotes teaching and learning that occurs in a logical and progressive manner, with appropriately increasing levels of cognitive challenge (McGaghie et al. 2010).

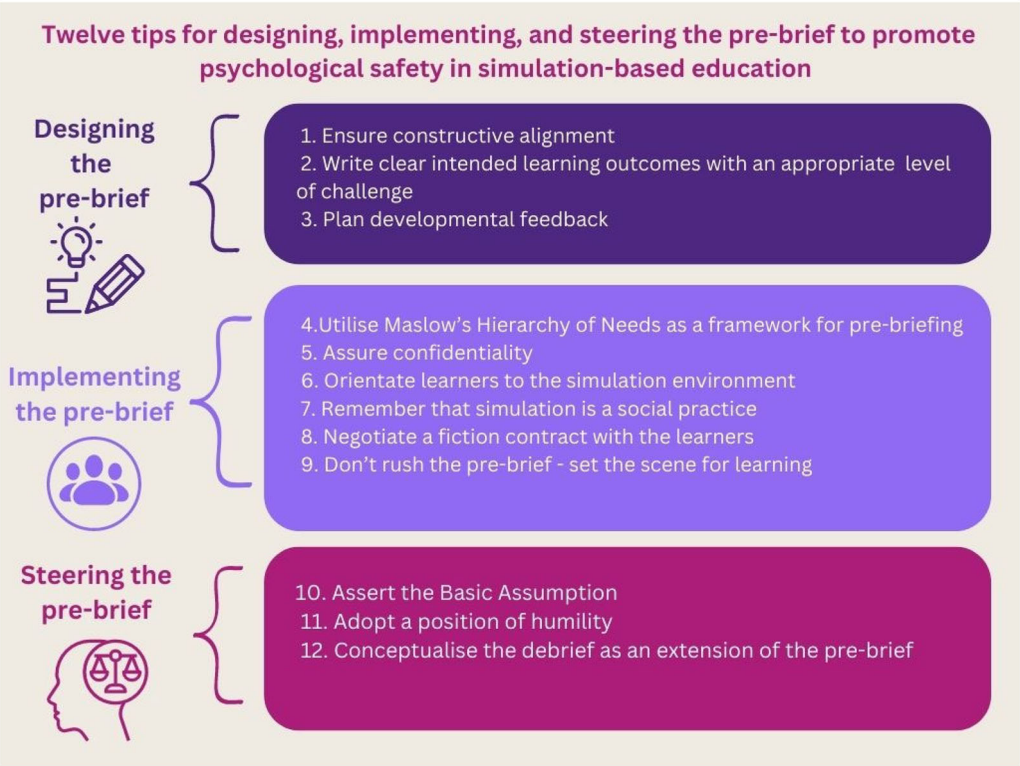

Figure 1. Twelve tips for designing, implementing, and steering the pre-brief to promote psychological safety in simulation-based education.

This approach is underpinned by experiential learning theory (Kolb and Kolb 2017) in that learners can look back to past experiences and feed forwards to future opportunities, promoting a shared understanding of how individual sessions relate to the learner's broader context of learning. Constructive alignment also delineates how learning activities are aligned to, yet separate from, summative assessment processes (Biggs and Tang 2011). Consequently, during simulation-based teaching sessions, faculty can focus on facilitating learning and development (see Tip 3) rather than making evaluative judgements and can assure learners of the formative nature of a simulation activity (Kolbe et al. 2023).

Tip 2

Write clear intended learning outcomes with an appropriate level of challenge

Purposeful crafting of ILOs is one of the pedagogical foundations of establishing a simulation activity (Issenberg et al. 2005). ILOs provide the pillar of simulation design and can be used in the pre-brief to define the purpose of the simulation concisely and transparently to a specific group of learners. A fundamental pre-requisite when creating ILOs is an understanding of the learner's context, allowing an appropriate challenge level to be determined (Guadagnoli et al. 2012). When simulation educators understand the learners' existing knowledge and clinical experience, their *primary frames* (Dieckmann et al. 2007), they can determine an appropriate challenge level for the simulation (Biggs 1996).

Clarifying the expectations of educators with participants in the pre-brief through the ILOs, may include more or less information about the specific scenario, the patient diagnosis or simulation activity content. Rudolph (Simulcast 2016) advocates being *artfully vague* with ILOs, allowing orientation for learners to create psychological safety, while allowing for a degree of challenge and problem-solving within the activity. This balances the principles of Vygotsky's (1978) zone of proximal development against stretching learners to the point of anxiety through lack of ILO transparency (LeBlanc and Posner 2022). Recognising the challenge level for a group of learners during simulation is a dynamic process as the simulation activities and stimuli evolve to expose learners to scenarios to challenge performance (Fraser et al. 2012; 2015). Revealing ILOs in the pre-brief makes the intended purpose of the simulation activity both transparent and explicit and should not detract from but rather enhance the safety and utility of the simulation (Rudolph et al. 2014; Kolbe et al. 2015).

We have observed disagreement about transparency when writing and sharing ILOs for SBE. For procedural skills, there is typically agreement that fully explicit ILOs are helpful, however, debate arises with immersive, scenario-based simulation. A common expression of not wanting to *spoil the surprise*, is supported by an argument proposing that hiding the details of ILOs is necessary to raise the challenge level and promote problem solving. Monteiro and Sibbald (2020, p. 514) explored this phenomenon and contend that there is a harmful and ingrained myth that uncertainty and surprise promote learning in SBE and conclude that 'ambiguity does not lead to effective clinical education'. Conversely, they advocate investing in learner preparation for simulation events to reduce stress and promote learning (Monteiro and Sibbald 2020). To stimulate a safe and conducive learning environment, participants should feel reassured that the simulation activity will present appropriate clinical challenges, but not present hidden surprises or perceived trickery (Monteiro and Sibbald 2020, Brazil et al. 2023).

Tip 3

Plan developmental feedback

The debrief is known as the *heart and soul* of simulation (Fanning and Gaba 2007), however, to enhance psychological safety, a vital element of the pre-brief is planning and discussion of the debrief, it's structure and purpose (Auerbach et al. 2018). Feedback in SBE should be developmental, rather than judgemental (Rudolph et al. 2007), and so, during the pre-brief, the intentions of developmental feedback in the debrief, can foster a growth mindset (Richardson et al. 2021; Ross 2021), stimulate authentic learning partnerships, and build trust between learners and facilitators (Brazil et al. 2023). Simulation involves a degree of formative assessment with feedback (Rudolph et al. 2008), with the aim that feedback on performance is utilised by learners to improve future performance (Brazil et al. 2023; Kolbe et al. 2023;). We have observed a judgemental mindset being introduced in formative simulation activities, and advocate that during the pre-brief the opportunities from experiential learning (Kolb and Kolb 2017) and the benefit of reflection (Cheng et al. 2016) are expressed to make overt the formative assessment and developmental purpose of the simulation activity (Groot et al. 2004). Drawing upon the principles of constructive alignment, educators should reassure learners that the simulation debrief and feedback will be aligned to the ILOs (Rudolph et al. 2007), and this conversation may extend to signposting where this will be summatively assessed on a future occasion.

Implementing the pre-brief

Tip 4

Utilise Maslow's Hierarchy of Needs as a framework for pre-briefing

Maslow's Hierarchy of Needs (1943) is commonly illustrated as a hierarchical pyramid, representative of the priorities which need addressed to support an individual's potential for achievement of goals. The hierarchy denotes that humans are motivated in a progressive way from a focus on basic human needs to the capacity for intellectual self-fulfilment (Madsen and Wilson 2012). In our experiences of facilitating simulation faculty development courses for UK and international audiences, using Maslow's hierarchy in the pre-brief, acts as a visual reminder and a cognitive aid of the cumulative mechanisms which can promote psychological safety and a conducive learning atmosphere (see Figure 2).

Figure 2. Maslow's Hierarchy as a framework for the simulation pre-brief.

Learners may require time to transition, physically and mentally to the simulation environment and during the pre-brief, through words and actions we can recognise, respect and, where appropriate, support an individual's physiological needs by welcoming and answering questions or offering refreshments. Metaphorically if not literally, bringing a taste and flavour of one's local cuisine to the simulation pre-brief can be a refreshing and nourishing educational icebreaker. In the following tips we continue adopting Maslow's focus on educational needs, social needs and esteem needs as the overarching concepts for the pre-brief, as a means to build rapport between simulation learners and educators (Auerbach et al. 2018).

Tip 5

Assure confidentiality

Confidentiality is a key tenet of addressing the educational safety needs of leaners in SBE. Indeed, there is an ethical duty for all involved in a simulation activity to respect confidentiality (Fanning and Gaba 2007), and learners need to be assured of confidentiality each time they attend for simulation teaching. Without the expression and assurance of confidentiality, learners may feel disempowered to fully engage with and thus gain the most from experiential learning (Madireddy and Rufa 2022). Explicitly stating that one of the ground rules of engagement in SBE is confidentiality is paramount for creating psychological safety and creating a safe learning environment.

The Chatham House Rule (Martin 1995) was proposed to encourage openness in political debate and is synonymous with a familiar adage heard which is *what happens in sim stays in sim*, and while this maxim is useful; it can be helpful to expand upon this with learners. The specifics of what happened and who did what in the simulation should remain confidential, but the learning derived from simulation experiences can and should be discussed outside of the session and carried froward to enhance practice (Cleaver et al. 2022). What happens in simulation is a sociocultural learning experience however the transition of learning to the healthcare workplace is an essential function of simulation and the educational safety needs of learners (Figure 2), and experiential learning in simulation (Yardley et al. 2012).

Tip 6

Orientate learners to the simulation environment

Recognising the diverse range of backgrounds and experiences learners come from, the pre-brief must also involve a degree of orientation to the simulation environment (Rutherford-Hemming et al. 2019). This aspect of the pre-brief is vital in encouraging learner engagement and promoting a safe and effective learner experience (Sikon and Lei 2021). At an elementary level, this involves ensuring learners know what equipment is available to them for the simulation and ensuring they know how it works, what it can do. The degree of orientation needed will vary and be determined by the level of technology used and the learner's prior simulation experience. However, learners may also need orientation to the wider physical environment depending on their prior experience. Familiarisation to orientate learners is widely accepted as an essential component of the pre-brief (McDermott 2016). Orientation in the pre-brief involves making authentic connections with the behind-the-scenes simulation team and technologies, this helps the learner 'tolerate' the artificialness and nuances of realism in simulation, and hence engage more with the creative nature of the simulation learning event (Owen 2016, p. 12). For example, explaining the role of technicians, embedded participants, and the (dis)functionality of manikins, or other technologies involved in simulation experiences (Alinier and Oriot 2022). Establishing these connections during the pre-brief connects the learner with the *entangled* components of a simulation activity (Fawns et al. 2022) and intends to avoid adding to the feeling of surprise and uncertainty described by Monteiro and Sibbald (2020), and deception described by (Alinier and Oriot 2022). Orientation prior to simulation activities brings several benefits, it is crucial in reducing learner anxiety (Rudolph et al. 2014) and consequently improving learner confidence and engagement in the simulation environment (Bommer et al. 2018).

Tip 7

Remember that simulation is a social practice

Considering simulation in this way acknowledges that it is 'a complex social endeavor' (Dieckmann et al. 2007, p. 183) an activity which frequently engages technology and simulators, but which is principally a social practice assembling groups of learners. Whilst many aspects of SBE involve benchtop procedural skills rehearsals, perhaps in isolation from others, the simulation space can induce feelings of uncertainty and stress which can adversely influence learners' social and cognitive experiences. SBE brings together individuals who are little or unknown to each other, and who are then expected to work together on communication, procedural or in team-based scenarios. Familiarity with colleagues or a lack of prior acquaintance can generate social anxiety and potential discomfort amongst learners (Madireddy and Rufa 2022).

The pre-brief is the opportunity for the facilitators to promote an atmosphere which is conducive to creating informal learning opportunities by building social connections among the learners (Cleland 2018). Sincere and welcoming introductions from facilitators can start forming the unfamiliar group into a collaborative learning community by taking time to build rapport among colleagues (Auerbach et al. 2018). Colleagues can learn with, from and about each other, both in the simulation learning activities and just as importantly in the informal activities during transitions and breaks between learning skills and rehearsing scenarios (Cleland et al. 2016). Ways this can be achieved depend on the context, for example, we typically begin our international and remote simulation sessions quite informally by sharing humorous aspects of our Scottish culture and invite learners to do the same. *Round the room conversations* (Simulcast 2020) during the pre-brief allow learners to get to know peers and facilitators and invites each to share experiences which relate to the purpose of the session (Brazil et al. 2023). Interprofessional teams who are already known to each other, and to simulation may find psychological safety a familiar concept (O'Donovan and McAuliffe 2020) and using team huddles such as the *circle-up framework* (Rock et al. 2020) are approaches aiming to catalyse learning opportunities building upon the social needs of the learners.

However, cultural awareness and sensitive acknowledgement of the context and atmosphere in the room is always needed (Torralba et al. 2020). Establishing social connections in some healthcare contexts can be challenging where hierarchical professional cultures are prevalent, and this can become a barrier to open communication and psychological safety (Torralba et al. 2020). In turn this can adversely impact simulation experiences, and moreover, can limit the ambitions and goals of translational simulation to improve health and social care delivery (Purdy et al. 2022). Social practices and professional environments are entirely context dependent and can be complex, wherein psychological safety cannot be prescribed, imposed nor assumed to be a universally understood or accepted concept and value (Edmondson and Lei 2014). Therefore, being mindful of workplace contexts, social interactions and the organisational culture can aid the simulation facilitator in leading groups towards collaboration and increased potential from shared learning experiences (Purdy et al. 2022; Eller et al. 2023).

Tip 8

Negotiate a fiction contract with the learners

As part of fostering the esteem needs of learners, Rudolph et al. (2014, p. 341) advocate 'establishing a fiction contract' as an essential step in the pre-briefing to invite learners to suspend their disbelief in the proposed simulation. The fiction contract pertains to inviting learner engagement in the fictitious occasion of the simulation activity, and yet encouraging learners to act *as-if* the simulation is an authentic experience and treat the simulation as they would a realistic clinical encounter (Dieckmann et al. 2007).

The counter construct is the artificiality of simulation. Simulation is deliberately not real-life, for educational and patient safety reasons (Yardley et al. 2013). The gap between simulation and clinical practice creates an *ex-reality* (Alinier and Oriot 2022), and thus, there may exist tensions between these two apparently opposing viewpoints. We want the learners to treat the simulation activity as authentic in order to observe their usual practice and encourage skill development and problem solving, but we also ask learners to be mindful that the simulation is just that; a simulated encounter contrived to facilitate learning (Gaba 2004). The concepts of fidelity and reality have been widely discussed in the SBE literature, and we will not revisit this in detail here other than to advocate that transparency and consistency are key to reassuring learners they will not be tricked or deceived during the simulation (Monteiro and Sibbald 2020). Learners in simulation will be open to buy-in (Rudolph et al. 2014), to tolerate a lack of realism in simulation (Yardley et al. 2013; Owen 2016) provided they are sufficiently pre-briefed of what to expect as part of an orientation to the simulation environment and experience (see Tips 2 & 6). Declaring some level of unreality (e.g. the physical environment) or hyper-reality (e.g. speeding up or slowing down clinical events) is a deliberate part of orientating and engaging learners in a fiction contract (Owen 2016; Johnston et al. 2020).

Disregarding the importance of the fiction contract will reduce learner engagement and may increase learner stress through the perceived potential to cause patient harm, or the perception that learners may be made 'to look like an idiot' (Owen 2017, p. 93). When transparently articulated and carefully balanced, a conducive learning environment in SBE can create appropriate challenges and promote opportunities for problem solving, within an atmosphere of psychological safety (Yardley et al. 2013). Explicitly acknowledging the necessary tension between fiction and reality within the pre-brief can reassure learners of the learning intentions that deliberately influencing reality can create effective learning opportunities and promote psychological safety (Alinier and Oriot 2022).

Tip 9

Don't rush the pre-brief - set the scene for effective learning

The design of SBE sessions should include ample time for the pre-brief, relative to the simulation activity and debrief, as there is a lot to consider in this phase of the simulation learning experience. Perceptions of psychological safety are diminished if learners are rushed into simulation activities (Stephen et al. 2020). Inadequate pre-briefing is likely to increase or induce stress by reducing the opportunity for learners to comprehend the session aims, understand the ILOs, and ask questions of the facilitators (Soffler et al. 2021). Session scheduling and lesson plans should allow adequate time for the pre-brief and avoid hurrying learners and educators into and out of this phase. In our experience this can then save time in both the simulated event when all parties are orientated to the purpose of the simulation activity as learners better understand and engage with the activity, and in the debrief when having been orientated to the areas on which the debrief will focus, discussions follow on as an extension of the pre-brief conversation.

Steering the pre-brief

Tip 10

Assert the Basic Assumption

The Basic Assumption (Center for Medical Simulation 2022) is a statement to assert the core values underpinning simulation practice to establish a safe learning environment for learners, it states:

> *We believe that everyone participating in simulation activities is intelligent, capable, cares about doing their best and wants to improve.*

This message is now widely and internationally endorsed in simulation centres and facilities and encourages educators to champion an authentic developmental relationship with learners in simulation sessions, and in our view, aligns with Maslow's framework proposed in Tip 4, in that it encourages respect for each learner's esteem needs and their capacity for self-actualisation. Declaring this Basic Assumption can address and augment the esteem needs of learners, particularly if their previous simulation experiences have generated negative simulation legacies (Monteiro and Sibbald 2020). These legacies may inhibit future buy-in to simulation but may be addressed through what Bearman and Molloy (2017) describe as *intellectual streaking*, which is that educators share stories of their own discomfort and vulnerability to acknowledge that these prior emotions and experiences are ubiquitous.

Prior simulation experiences will affect the lens through which new learning events are perceived. Learners may have been, ill-informed in a pre-brief, presented with too great a skill-based or cognitive challenge, they may feel they were misled by the simulation educators, have been judged by their peers or criticised harshly in a debrief. Such vestiges serve to heighten anxiety for learners when facing new simulation activities (LeBlanc and Posner 2022). Therefore, an overt expression of respect for learners by facilitators of simulation in the pre-brief intends to rebuild confidences and trust in the new experience, however, research by Ng et al. (2019, p. 1057) acknowledges a 'plurality of epistemic cultures in SBE' amongst educators and learners. In other words, different social and professional cultures may be less familiar or comfortable with the notion of not knowing, making mistakes, appearing vulnerable and loosing face publicly, and understanding the educational context in which one is practicing is critical (Brazil et al. 2023). Educators need to be able to recognise and learn how to pause simulations and diffuse emotions when the learner discomfort becomes apparent, overwhelms, and detracts from the educational experience (Hamilton et al. 2022; LeBlanc and Posner 2022). Therefore, what is key to the simulation facilitators' translation of the Basic Assumption is a recognition and appreciation of the wider and pre-existent beliefs and values within diverse educational climates which will influence the understanding, implementation and conduct of SBE (Ng et al. 2019; Eller et al. 2023).

Tip 11

Adopt a position of humility

The behaviours and motives of all involved in a social activity, such as simulation, will influence the learning atmosphere and the educator has a lead role in this dynamic. The idea of relational humility (Davis et al. 2011) describes how an individual's intuitive empathy and perspective shapes communication and relationships. Humility is a philosophical standpoint, which can promote psychological safety and learning, Gruppen (2014) espouses humility and respect as core values in medical education and we believe this is of particular importance in SBE. If educators are reflective and honest in assessing their motives during a simulation learning activity, setting aside competing professional values, such as critical scepticism, competition, and confidence (Gruppen 2014), the learner's needs and development can then remain central to a simulation. Sincerely communicating that the primary responsibility of the educator is learner development can promote an atmosphere of prioritisation and collaboration (Richardson et al. 2021), and a culture of safety for learning (Watling and Ginsburg 2019). Molloy and Bearman (2019) propose that educators engage in *intellectual candour;* that is, to consider expressing one's own vulnerabilities, to build trust and aid learning. However, intellectual candour should be driven by learners' needs and carefully considered alongside the importance of retaining credibility. The intended result of intellectual candour is that learners are likely to be more relaxed in the presence of the educator, more trusting of their intentions, more confident to take part and to ask questions, and as a result the potential for learning is enhanced (Hsiang-Te Tsuei et al. 2019).

Tip 12

Conceptualise the debrief as an extension of the pre-brief

The simulation debrief should be underpinned by the ILOs (Fanning and Gaba 2007); perceived in this way, the debrief is an extension of the pre-brief conversation. Congruence between the debrief and the pre-brief reassures learners that the psychological safety groundwork established prior to the simulation activity is being upheld and that the debriefing will focus on the agreed learning contract (Ross 2021). There are several approaches to, and frameworks for, debriefing to support facilitators in structuring and conducting their debrief conversations, and whichever is adopted we advocate that educators focus the debrief on circling back to the ILOs agreed in the pre-brief and closing the feedback loop (Rudolph et al. 2008). Simulation allows individuals to learn with, from, and about each other, enhancing the healthcare team's mutual understanding, contributing to improvements in healthcare for the benefit of patients (Purdy et al. 2022). This is underpinned by the relationship with educators, the interplay between the pre-brief conversations and the analytical discussions of the debrief, which includes proposing future practice developments.

Conclusion

There is increasing recognition of the value of an effective pre-brief and of the importance of psychological safety within SBE as a requisite component of effective learning (Kolbe et al. 2019), with the ultimate aim that this learning will lead to improved outcomes for patients. These twelve tips have synthesised research, scholarly

contributions, and expert opinions to illustrate how the pre-brief can be utilised to promote a safe educational environment for learning across the spectrum of applications of simulation in healthcare education. Psychological safety does not prohibit engagement in challenging simulations but rather requires that learners be appropriately orientated to ILOs for their level of experience and practice, allowing them to be involved in simulated clinical events which are in and of themselves challenging but are pitched at a level of challenge for their knowledge and skill, to effectively prepare them for the difficult realities of clinical practice (Gaba 2013, LeBlanc and Posner 2022; Brazil et al. 2023).

The twelve tips presented are not structured as a step-by-step framework; rather they outline the important features of pre-briefing for simulation educators and centres to consider in their practice. We offer this paper as a summary of best practice for simulation facilitators focussing on the pre-briefing, acknowledging that there are education contexts which will be more or less familiar and comfortable with these approaches. It is hoped this paper, which draws on our experiences of SBE, will encourage ongoing discussion and will support novice educators to conduct effective pre-briefings and promote the psychological safety needed for enabling and enhancing learning in simulation, to improve practice in healthcare.

Acknowledgment

Grateful thanks for creating the infographics in Figures 1 and 2 to Jordan Napier, Staff Development Lead, School of Medicine, University of Dundee, Scotland.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Glossary

Pre-brief: Introductory phase of Simulation-Based Education events.

Psychological Safety: An underpinning philosophy for creating simulation experiences in which learners can develop within a supportive social atmosphere.

The Basic Assumption: Asserts the core values underpinning simulation practice to establish a safe learning environment for learners.

Funding

No funding was awarded for preparing this manuscript.

Notes on contributors

Susan Somerville, RGN, PhD, is a Senior Lecturer in Medical Education and Program Lead for the simulation speciality pathways in the Centre for Medical Education, University of Dundee.

Neil Harrison, MBChB, FRCGP, MMEd, FHEA, is Co-Director of the Dundee Institute for Healthcare Simulation and Director of the Clinical Skills and Simulation Centre at the University of Dundee. In his clinical role he is a general practitioner in NHS Tayside.

Steven Lewis, MBChB, is a Clinical Teacher in the Clinical Skills and Simulation Centre at the University of Dundee. He is a general practitioner in NHS Tayside.

ORCID

Susan Geraldine Somerville http://orcid.org/0000-0001-9630-927X
Neil Malcolm Harrison http://orcid.org/0000-0003-0988-9267

References

Alinier G, Oriot D. 2022. Simulation-based education: deceiving learners with good intent. Adv Simul. 7(1):1–13.
Auerbach M, Cheng A, Rudolph JW. 2018. Rapport management: opening the door for effective debriefing. Sim Healthcare. 13(1):1–2.
Bearman M, Molloy E. 2017. Intellectual streaking: the value of teachers exposing minds (and hearts). Med Teach. 39(12):1284–1285.
Biggs J. 1996. Enhancing teaching through constructive alignment. High Educ. 32(3):347–364.
Biggs J, Tang C. 2011. Teaching for quality learning at university. UK: McGraw-Hill education.
Bommer C, Sullivan S, Campbell K, Ahola Z, Agarwal S, O'Rourke A, Jung HS, Gibson A, Leverson G, Liepert AE. 2018. Pre-simulation orientation for medical trainees: an approach to decrease anxiety and improve confidence and performance. Am J Surg. 215(2): 266–271.
Brazil V. 2023.'Safe, not soft' – hitting the sweet spot for simulation-based education – ICE Blog www.royalcollege.ca
Brazil V, Orr R, Canetti EF, Isaacson W, Stevenson N, Purdy E. 2023. Exploring participant experience to optimize the design and delivery of stress exposure simulations in emergency medicine. AEM Educ Train. 7(2):e10852.
Center for Medical Simulation 2022. https://harvardmedsim.org/resources/the-basic-assumption/
Cheng A, Grant V, Robinson T, Catena H, Lachapelle K, Kim J, Adler M, Eppich W. 2016. The Promoting Excellence and Reflective Learning in Simulation (PEARLS) approach to health care debriefing: a faculty development guide. Clin Simul Nurs. 12(10):419–428.
Cleaver K, Essex R, Narramore N, Shekede H, Malamateniou C, Weldon SM. 2022. 'A much kinder introduction': exploring the benefits and challenges of paediatric simulation as a transitioning tool prior to clinical practice. Inter J Healthcare Simul. 2:12–20
Cleland J. 2018. Simulation-based education: what's it all about? Perspect Med Educ. 7(Suppl 1):30–33.
Cleland J, Walker KG, Gale M, Nicol LG. 2016. Simulation-based education: understanding the socio-cultural complexity of a surgical training 'boot camp. Med Educ. 50(8):829–841.
Davis DE, Hook JN, Worthington EL, Jr Van Tongeren DR, Gartner AL, Jennings DJ, Emmons RA. 2011. Relational humility: conceptualizing and measuring humility as a personality judgment. J Pers Assess. 93(3):225–234.
Dieckmann P, Gaba D, Marcus R. 2007. Deepening the Theoretical Foundations of Patient Simulation as Social Practice. Simul Healthc. 2(3):183–193.
Edmondson A. 1999. Psychological safety and learning behavior in work teams. Administr Sci Quart. 44(2):350–383.
Edmondson AC, Lei Z. 2014. Psychological safety: the history, renaissance, and future of an interpersonal construct. Annu Rev Organ Psychol Organ Behav. 1(1):23–43.
Eller S, Rudolph J, Barwick S, Janssens S, Bajaj K. 2023. Leading change in practice: how "longitudinal prebriefing" nurtures and sustains in situ simulation programs. Adv Simul. 8(1):3.
Fanning R, Gaba D. 2007. The role of debriefing in simulation-based learning. Simul Healthc. 2(2):115–125.
Fawns T, Hislop J, Oliver N, Somerville S. 2022. An entangled view of an educational activity. OpenEd.
Fraser K, Ma I, Teteris E, Baxter H, Wright B, McLaughlin K. 2012. Emotion, cognitive load and learning outcomes during simulation training. Med Educ. 46(11):1055–1062.
Fraser KL, Ayres P, Sweller J. 2015. Cognitive load theory for the design of medical simulations. Simul Healthc. 10(5):295–307.
Gaba DM. 2004. The future vision of simulation in health care. Qual Saf Health Care. 13(suppl_1):i2–i10.

Gaba DM. 2013. Simulations that are challenging to the psyche of participants: how much should we worry and about what? Simul Healthc. 8(1):4–7.
Groot F, Jonker G, Rinia M, ten Cate O, Reinier G. 2004. Simulation at the Frontier of the Zone of Proximal Development: a Test in Acute Care for. Acad Med. 79(3):219–228.
Gruppen LD. 2014. Humility and respect: core values in medical education. Med Educ. 48(1):53–58.
Guadagnoli M, Morin MP, Dubrowski A. 2012. The application of the challenge point framework in medical education. Med Educ. 46(5): 447–453.
Hamilton PK, Gormley GJ, Vage A, Spence AD. 2022. Spoonful of sugar: a case for stress-reduction interventions in medical simulation. Inter J Healthcare Simul. 2(1):41–43.
Hsiang-Te Tsuei S, Lee D, Ho C, Regehr G, Nimmon L. 2019. Exploring the construct of psychological safety in medical education. Acad Med. 94(11S Association of American Medical Colleges Learn Serve Lead: proceedings of the 58th Annual Research in Medical Education Sessions):S28–S35.
Issenberg SB, McGaghie WC, Petrusa ER, Gordon DL, Scalese RJ. 2005. Features and uses of high-fidelity medical simulations that lead to effective learning: a BEME systematic review. Med Teach. 27(1): 10–28.
Johnston JL, Gormley GJ, Kearney GP, Reid H. 2020. Into the uncanny valley: simulation versus simulacrum? Med Educ. 54(10):903–907.
Kolb AY, Kolb DA. 2017. Experiential learning theory as a guide for experiential educators in higher education. Exper Learn Teach Higher Educ. 1(1):7–44.
Kolbe M, Eppich W, Rudolph J, Meguerdichian M, Catena H, Cripps A, Grant V, Cheng A. 2019. Managing psychological safety in debriefings: a dynamic balancing act. BMJ Simul Technol Enhanc Learn. 6(3):164–171.
Kolbe M, Grande B, Lehmann-Willenbrock N, Seelandt JC. 2023. Helping healthcare teams to debrief effectively: associations of debriefers' actions and participants' reflections during team debriefings. BMJ Qual Saf. 32(3):160–172.
Kolbe M, Grande B, Spahn DR. 2015. Briefing and debriefing during simulation-based training and beyond: content, structure, attitude and setting. Best Pract Res Clin Anaesthesiol. 29(1):87–96.
Kostovich CT, O'Rourke J, Stephen L-A. 2020. Establishing psychological safety in simulation: faculty perceptions. Nurse Educ Today. 91:104468.
LeBlanc VR, Posner GD. 2022. Emotions in simulation-based education: friends or foes of learning? Adv Simul. 7(1):3.
Loughlin C, Lygo-Baker S, Lindberg-Sand Å. 2021. Reclaiming constructive alignment. Europ J Higher Educ. 11(2):119–136.
Madireddy S, Rufa EP. 2022. Maintaining confidentiality and psychological safety in medical simulation. StatPearls Publishing. https://www.statpearls.com/ArticleLibrary/viewarticle/63831
Madsen SR, Wilson IK. 2012. Humanistic theory of learning: Maslow. In: Seel NM, editor. Encyclopedia of the sciences of learning. Boston (MA): Springer. DOI:10.1007/978-1-4419-1428-6_1022.
Madsgaard A, Røykenes K, Smith-Strøm H, Kvernenes M. 2022. The affective component of learning in simulation-based education – facilitators' strategies to establish psychological safety and accommodate nursing students' emotions. BMC Nurs. 21(1):91.
Martin L. 1995. Chatham House at 75: the past and the future. Inter Affairs. 71(4):697–703.
Maslow AH. 1943. A theory of human motivation. Psychol Rev. 50(4): 370–396.
McDermott DS. 2016. The prebriefing concept: a Delphi study of CHSE experts. Clin Simul Nurs. 12(6):219–227.
McGaghie WC, Issenberg SB, Petrusa ER, Scalese RJ. 2010. A critical review of simulation-based medical education research: 2003-2009. Med Educ. 44(1):50–63.
Molloy E, Bearman M. 2019. Embracing the tension between vulnerability and credibility:'intellectual candour'in health professions education. Med Educ. 53(1):32–41.
Monteiro S, Sibbald M. 2020. Aha! Taking on the myth that simulation-derived surprise enhances learning. Med Educ. 54(6):510–516.
Nestel D, Hui J, Kunkler K, Scerbo MW, Calhoun AW. 2019. Developing expertise in healthcare simulation research. In Healthcare Simulation Research (pp. 3–7). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-030-26837-4_1.
Ng SL, Kangasjarvi E, Lorello GR, Nemoy L, Brydges R. 2019. 'There shouldn't be anything wrong with not knowing': epistemologies in simulation. Med Educ. 53(10):1049–1059.
O'Donovan R, McAuliffe E. 2020. A systematic review exploring the content and outcomes of interventions to improve psychological safety, speaking up and voice behaviour. BMC Health Serv Res. 20(1):101.
Owen LE. 2016. From fairies to SimMan: tolkien and realism in simulation. J Surg Simul. 3:8–12.
Owen LE. 2017. An exploration of motivation, relevance and realism in simulation based medical education: "I Don't Want to Look Like an Idiot". [Doctor of Education Thesis]. University of Dundee.
Purdy E, Borchert L, El-Bitar A, Isaacson W, Bills L, Brazil V. 2022. Taking simulation out of its "safe container"—exploring the bidirectional impacts of psychological safety and simulation in an emergency department. Adv Simul. 7(1):5.
Richardson D, Kinnear B, Hauer KE, Turner TL, Warm EJ, Hall AK, Ross S, Thoma B, Van Melle E, Collaborators I, ICBME Collaborators 2021. Growth mindset in competency-based medical education. Med Teach. 43(7):751–757.
Rock LK, Rudolph JW, Fey MK, Szyld D, Gardner R, Minehart RD, Shapiro J, Roussin C. 2020. "Circle Up": Workflow adaptation and psychological support via briefing, debriefing, and peer support. NEJM Catal Innov Care Deliv. 1(5)
Ross S. 2021. Twelve tips for effective simulation debriefing: a research-based approach. Med Teach. 43(6):642–645.
Rudolph JW, Raemer DB, Simon R. 2014. Establishing a safe container for learning in simulation: the role of the presimulation briefing. Simul Healthc. 9(6):339–349.
Rudolph JW, Simon R, Raemer DB, Eppich WJ. 2008. Debriefing as formative assessment: closing performance gaps in medical education. Acad Emerg Med. 15(11):1010–1016.
Rudolph JW, Simon R, Rivard P, Dufresne RL, Raemer DB. 2007. Debriefing with good judgment: combining rigorous feedback with genuine inquiry. Anesthesiol Clin. 25(2):361–376.
Rutherford-Hemming T, Lioce L, Breymier T. 2019. Guidelines and essential elements for prebriefing. Simul Healthc. 14(6):409–414.
Sikon JR, Lei C. 2021. Orientation to the medical simulation environment. Treasure Island, FL: StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK560853/
Simulcast 2016. Safe container for simulation. http://simulationpodcast.com/8-safe-container-simulation/
Simulcast 2020. 114 Sim 101: the pre-brief. http://simulationpodcast.com/114-sim-101-the-pre-brief/
Soffler MI, Ricotta DN, Hayes MM, Shapiro CJ. 2021. Avoiding 5 common pitfalls of simulation design in medical education. Acad Med. 96(1):157.
Stephen L-A, Kostovich C, O'Rourke J. 2020. Psychological safety in simulation: prelicensure nursing students' perceptions. Clin Simul Nurs. 47:25–31.
Stephenson E, Poore J. 2016. Tips for conducting the pre-brief for a simulation. J Contin Educ Nurs. 47(8):353–355.
Torralba KD, Jose D, Byrne J. 2020. Psychological safety, the hidden curriculum, and ambiguity in medicine. Clin Rheumatol. 39(3): 667–671.
Tyerman J, Luctkar-Flude M, Graham L, Coffey S, Olsen-Lynch E. 2016. Pre-simulation preparation and briefing practices for healthcare professionals and students: a systematic review protocol. JBI Evidence Synthesis. 14(8):80–89.
Vygotsky LS. 1978. Mind in society: the development of higher psychological processes. Cambridge, MA: Harvard University Press.
Watling CJ, Ginsburg S. 2019. Assessment, feedback and the alchemy of learning. Med Educ. 53(1):76–85.
Yardley S, Teunissen PW, Dornan T. 2012. Experiential learning: transforming theory into practice. Med Teach. 34(2):161–164.
Yardley S, Irvine AW, Lefroy J. 2013. Minding the gap between communication skills simulation and authentic experience. Med Educ. 47(5):495–510.