Qualities of Effective Vital Anaesthesia Simulation Training Facilitators Delivering Simulation-Based Education in Resource-Limited Settings

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BACKGROUND: Lack of access to safe and affordable anesthesia and surgical care is a major contributor to avoidable death and disability across the globe. Effective education initiatives are a viable mechanism to address critical skill and process gaps in perioperative teams. Vital Anaesthesia Simulation Training (VAST) aims to overcome barriers limiting widespread application of simulation-based education (SBE) in resource-limited environments, providing immersive, low-cost, multidisciplinary SBE and simulation facilitator training. There is a dearth of knowledge regarding the factors supporting effective simulation facilitation in resource-limited environments. Frameworks evaluating simulation facilitation in high-income countries (HICs) are unlikely to fully assess the range of skills required by simulation facilitators working in resource-limited environments. This study explores the qualities of effective VAST facilitators; knowledge gained will inform the design of a framework for assessing simulation facilitators working in resource-limited contexts and promote more effective simulation faculty development.

METHODS: This qualitative study used in-depth interviews to explore VAST facilitators' perspectives on attributes and practices of effective simulation in resource-limited settings. Twenty VAST facilitators were purposively sampled and consented to be interviewed. They represented 6 low- and middle-income countries (LMICs) and 3 HICs. Interviews were conducted using a semistructured interview guide. Data analysis involved open coding to inductively identify themes using labels taken from the words of study participants and those from the relevant literature.

RESULTS: Emergent themes centered on 4 categories: Persona, Principles, Performance and Progression. Effective VAST facilitators embody a set of traits, style, and personal attributes (Persona) and adhere to certain Principles to optimize the simulation environment, maximize learning, and enable effective VAST Course delivery. Performance describes specific practices that well-trained facilitators demonstrate while delivering VAST courses. Finally, to advance toward competency, facilitators must seek opportunities for skill Progression.

Interwoven across categories was the finding that effective VAST facilitators must be cognizant of how context, culture, and language may impact delivery of SBE. The complexity of VAST Course delivery requires that facilitators have a sensitive approach and be flexible, adaptable, and open-minded. To progress toward competency, facilitators must be open to self-reflection, be mentored, and have opportunities for practice.

CONCLUSIONS: The results from this study will help to develop a simulation facilitator evaluation tool that incorporates cultural sensitivity, flexibility, and a participant-focused educational model, with broad relevance across varied resource-limited environments. (Anesth Analg 2021;133:215–25)

KEY POINTS

- **Question:** What are the essential attributes of effective simulation facilitators delivering educational content in resource-limited settings?
- **Findings:** Four main categories of attributes emerged (Persona, Principles, Performance, and Progression) with underlying themes and competencies displayed by effective facilitators.
- **Meaning:** Themes and competencies presented in this article can be used to inform development of a rubric, evaluating the performance of simulation facilitators delivering simulation-based education in resource-limited settings.

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Accepted for publication March 30, 2021.

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DOI: 10.1213/ANE.0000000000005584

Funding: None.

Conflicts of Interest: See Disclosures at the end of the article.

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GLOSSARY

HIC = high-income country; **LMIC** = low- and middle-income countries; **REB** = research ethics board; **SBE** = simulation-based education; **VAST** = Vital Anaesthesia Simulation Training; **VAST FC** = VAST Facilitator Course

In low- and middle-income countries (LMICs), lack of access to safe and affordable surgical and anesthesia care is the a contributor to death and disability.[1] Effective education initiatives are one viable mechanism to address critical gaps in skills and processes.[2] In high-income countries (HICs), simulation-based education (SBE) is an established teaching methodology with the potential to improve patient outcomes.[3,4] In resource-limited environments, the capacity to deliver SBE is constrained by cost, lack of contextually relevant teaching materials, and shortage of qualified simulation educators.[5] In this setting, it is imperative that training initiatives be relevant, cost effective, sustainable and uphold high standards.

Despite the expanding number of self-reflective and objective evaluation tools for rating simulation facilitators,[6–9] there is a dearth of knowledge regarding factors supporting effective simulation facilitation for perioperative teams in resource-limited environments.[5] Culture, language, and contextual factors have variable impacts on the delivery of health care, education, and implementation of simulation training in resource-limited environments.[10] Validated tools assessing simulation debriefing in HICs may not adequately evaluate the full range of skills required by simulation facilitators working in resource-limited environments.[11] The specific qualities needed for effective simulation facilitators working in this environment remain unknown.

Vital Anaesthesia Simulation Training (VAST) was founded in 2017 to overcome barriers limiting widespread application of SBE in resource-limited environments. The VAST Course is a 3-day program focusing on core practices that promote the provision of safe anesthesia and perioperative care. Using multidisciplinary, immersive, low-cost simulation training, the course addresses anesthesia and resuscitation for obstetrics, pediatrics, and trauma, as well as safe general surgery and pre- and postoperative care, with an underlining focus on nontechnical skills.[12]

To promote sustainability, VAST Courses are paired with a 2-day VAST Facilitator Course (VAST FC) that introduces trainee-facilitators to the core concepts of SBE and practice in facilitating and debriefing VAST simulation scenarios. Using a framework adapted from the Scottish Centre for Simulation and Clinical Human Factors (https://scschf.org), VAST scenario debriefing has 4 stages: Reactions, Agenda, Analysis, and Take-Home Messages (Figure 1). Reactions gauges emotional response to the scenario and allows for expressing concerns before exploring specific aspects of the scenario. Agenda uses a plus-delta technique,[13] in which participants comment on "what went well" and "what was challenging," setting the stage for items to be discussed in the Analysis phase. In Analysis, advocacy-enquiry[14] and focused facilitation principles[15] are promoted. Debriefing concludes with participants summarizing their Take-Home Messages from the session. While the VAST facilitator training encourages trainee-facilitators to use a limited set of rehearsed phrases for generating their questions, no specific script is followed. Trainee-facilitators are mentored by experienced instructors over successive VAST Courses; their skills are reinforced with repeated practice, meta-debriefing, and progressive assumption of facilitator responsibilities.

By drawing on insights of experienced VAST facilitators, this study sought to explore the qualities of effective VAST facilitators and how those attributes can be nurtured in trainee-facilitators. Knowledge gained may inform the design of a competency-based framework to strengthen VAST facilitator training methods and provide insight into effective faculty development for simulation educators in resource-limited environments.

METHODS

Study Design

This qualitative study used in-depth interviews to explore study participants' perspectives on attributes and practices of VAST simulation facilitators. It adheres to the Standards for Reporting Qualitative Research guidelines.[16]

Ethical Considerations

This study was approved by the Dalhousie University Research Ethics Board (REB#: 2020-5109). Written informed consent was obtained from all study participants. Data were de-identified before analysis.

Participant Recruitment and Characteristics

Experienced VAST facilitators were eligible for inclusion. From a total pool of 29 trained VAST facilitators, we used purposive sampling[17,18] to request interviews from individuals representing a range of viewpoints: LMIC/HIC country of practice, limited or extensive

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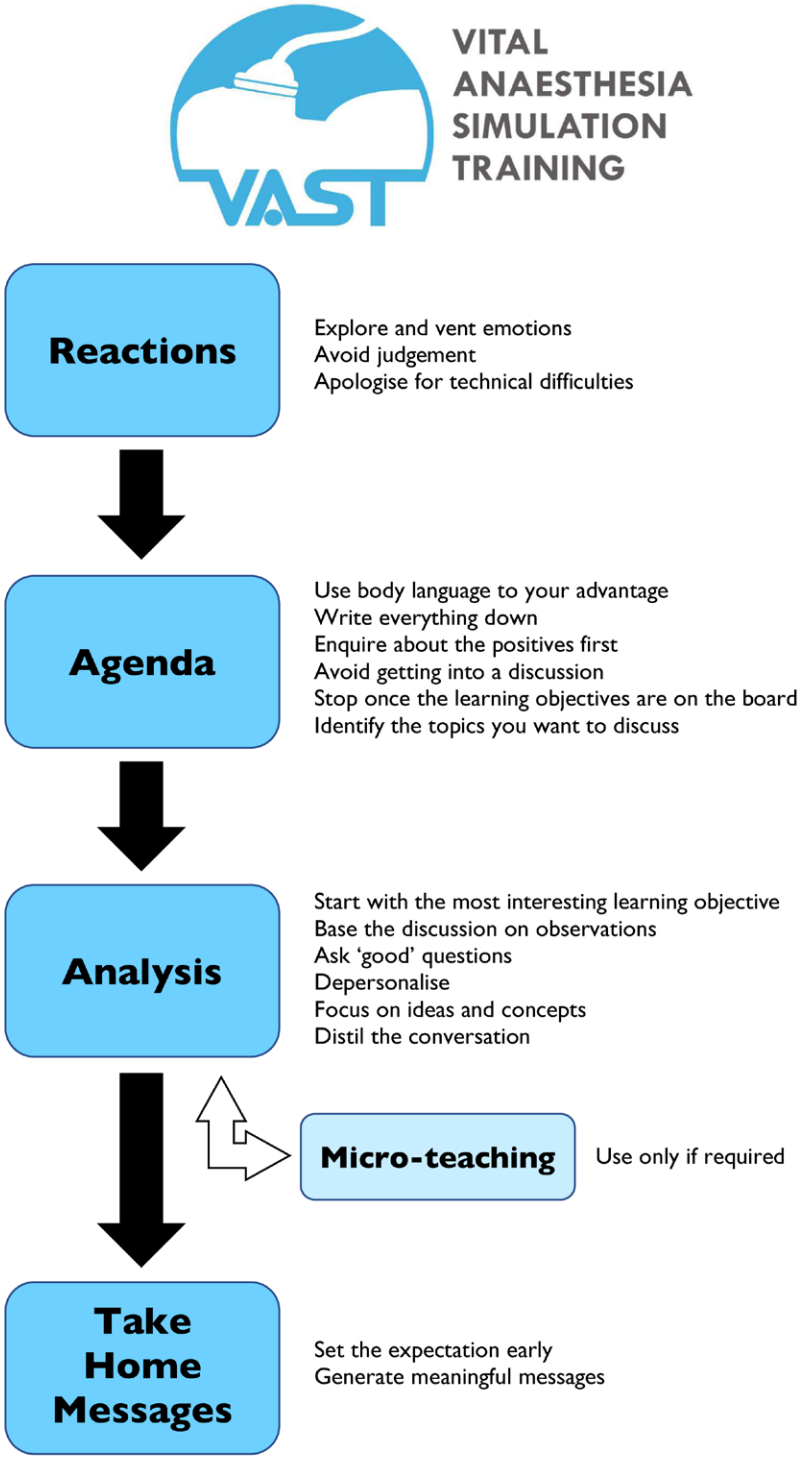

*Adapted from the Scottish Centre for Simulation and Clinical Human Factors https://scschf.org

Figure 1. VAST's debriefing framework. VAST = Vital Anaesthesia Simulation Training.

prior experience with simulation, and professional role (nurse, surgeon, or anesthesiologist). Purposive sampling is the intentional selection of research participants based on their ability to provide insights into the phenomenon under study.[17] Twenty VAST facilitators (hereafter referred to as study participants) consented to be interviewed and represented 6 LMICs and 3 HICs (Table 1).

Data Collection

Interviews were conducted using a semistructured interview guide (Figure 2) between May and July

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Table 1. Characteristics of Study Participants (20 Total) and Number in Each Category

Country	LMIC (10)	HIC (10)		
Gender	Male (12)	Female (8)		
Experience[a]	<5 y (13)	5–10 y (4)	>10 y (3)	
Profession	Anes (15)	Anes T (3)	Nurse (1)	Surgeon (1)

Abbreviations: Anes T, anesthesia trainee; HIC, high-income country (Australia, Canada, and United Kingdom); LMIC, low- and middle-income countries (Rwanda, Ethiopia, India, Fiji, Sudan, and Kenya).
[a]Experience = years of experience with simulation facilitation.

2020. Two of the 20 interviews were in-person, and the remaining were conducted by videoconferencing. One co-investigator (P.L.) was present for all interviews; a second co-investigator (A.I.M. or J.G.B.) was present for 13 interviews. Study participants knew at least 1 interviewer in all cases. Interviews were audio-recorded and later transcribed verbatim with data de-identified during transcription. Initial data analysis was concurrent with data collection. Data saturation for key themes was reached at approximately 10 interviews, but we continued to interview study participants, as their insights were valuable in obtaining a comprehensive understanding of the study questions.

Data Analysis

The 4 co-investigators independently reviewed all 20 transcripts and analyzed data using the approach to thematic analysis described by Braun and Clarke[19] (summarized briefly in Figure 3). This involved open coding, identifying themes by induction, and assigning labels taken from the words of participants and those from the relevant literature. After independent coding, the study co-investigators met to agree on a core set of themes and to search for context, causal conditions, and consequences. Finally, the co-investigators organized and integrated themes to articulate a coherent understanding of attributes of excellent VAST facilitators.

Semi-structured interview guide

Thank you for consenting to this interview.

1. Please describe your background with simulation-based education.
2. Please tell us about your experience with VAST facilitation.
3. Could you describe a VAST debriefing session that you either observed or conducted that you think went well? (prompt: what made it go well?)
4. What are the qualities of an ideal VAST facilitator?
5. What practices do excellent VAST facilitators employ? (prompt: physical space, psychological security, pre-brief, running the scenario, observations, debriefing)
6. What pitfalls have you observed in VAST facilitation? (prompt: can you describe a VAST debriefing that went poorly?)
7. How can we help trainee facilitators improve at VAST facilitation?
8. How do you build your own expertise?
9. In what ways are the requirements for facilitating VAST different from other simulation facilitation? (prompts: cultural and language barriers, varying levels of clinical experience, prior simulation experience, requirements for international faculty facilitating in LMICs)
10. Is there anything else you would like to add about VAST facilitation?

Thank you for your time.

Figure 2. Semi-structured interview guide.

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Summary of Braun and Clarke's 6 steps to thematic analysis
1. Familiarize yourself with the data by reading the data in an active way to search for meaning and patterns.
2. Generating initial codes or basic segments of data that are relevant to the phenomenon being studied.
3. Searching for themes by sorting the codes into broader overarching themes and considering a visual representation of the data.
4. Reviewing themes is an iterative phase whereby themes may be combined, refined and separated, or discarded by going back to the original data codes to ensure they are appropriately captured in the themes.
5. Defining and naming themes involves identifying the essence of what each theme is about.
6. Producing the report is when example quotes are selected that best illustrate themes and providing a coherent summary of the phenomenon being studied.

Figure 3. Summary of Braun and Clarke's 6 steps to thematic analysis.

Reflexivity

In qualitative research, reflexivity requires that researchers consider their own social and cultural position and how this affects both data collection and analysis. No description is free of interpretation, and we acknowledge this: "researchers seeking to describe an experience or event select what they will describe and, in the process of featuring certain aspects of it, begin to transform that experience or event."[20] The co-investigators are committed to the quality and success of the VAST Course. This was consciously acknowledged throughout data collection and analysis.

RESULTS

During data analysis, the co-investigators independently developed emergent themes and subsequently met via videoconferencing. Group discussion and refinement of these themes occurred until consensus was reached. The themes identified were centered in 4 overarching categories: Persona, Principles, Performance, and Progression. There was some overlap between categories. Competencies associated with each theme are shown in Table 2. The following discussion elaborates on these categories, themes, and competencies and includes representative quotes from study participants. The ideas expressed by study participants appeared consistent, regardless of their background (HIC/LMIC, gender, experience with simulation, and profession). However, given the study population size (20), it is not possible to assert this with statistical certainty.

Persona

Study participants highlighted a set of traits, style, and personal attributes consistently present in skilled facilitators. Flexibility was viewed as important given the varied and rapidly changing environment in which VAST courses are delivered, the diverse course participant groups, and challenges of resource limitation.

> You must be open to new ideas and open to things are not always ideal [laughs] in our sort of setting (participant 19).

> Those excellent facilitators are flexible enough to be able to deliver them in a difficult low-resource environment (participant 1).

Study participants outlined the need for maintaining social awareness and recognizing how culture and contextual factors may impact interpersonal dynamics and experience within the simulation environment. Effective facilitators are approachable and perceptive of course participant experience, and use an inquisitive, curious mindset.

> You really do have to understand the context of the local operating rooms and the local facilities and people who are using them and then the different professional levels, the different educational levels, because that can play a significant role in how people perform (participant 4).

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Table 2. Overview of Categories, Themes, and Competencies

Theme	Competencies
Category 1: Persona (traits, style, and personal attributes of the facilitator)	
Flexibility	Adaptable to change
	Open-minded
	Outcome-orientated, recognizes there is more than one right way
	Adjusts teaching materials and techniques where required
Social awareness	Perceptive of the participants' experience and mindset
	Aware that culture and hierarchy may impact on interpersonal dynamics
	Approachable
	Inquisitive and curious rather than overtly judgmental
Communication skills	Clear communicator
	Active listener
	Charismatic presenter
	Effective manager of people, tasks, and competing priorities
Approach	Passion for teaching, simulation, and global health
	Embraces lifelong learning
	Enthusiastic and energetic
	Prioritizes participant experience over personal ego
	Fosters respect with confidence and clinical expertise
Category 2: Principles (fundamentals that support effective facilitation)	
Theme	**Competencies**
Learning environment	Establishes a safe learning space
	Sets clear expectations
	Promotes buy-in and builds emotional fidelity
	Encourages all-learners' active participation
Participant centered	Demonstrates curiosity toward cultural and contextual factors
	Adapts approach to learners' language, knowledge, and performance
	Builds rapport with learners and validates their contributions
	Encourages participant-driven discussions
Debriefing principles	Generates questions that explore thinking, behaviors, and decision making
	Addresses errors and inconsistencies without shame-based learning
	Distills discussion into tangible learning applicable to real-life clinical practice
	Draws from participant knowledge base
	Recognizes potential language barriers and checks for understanding
Higher level thinking	Focuses on the key learning objectives, broad concepts, and nontechnical skills
	Maintains awareness of logistics, time management, and course flow
	Prioritizes the development of local faculty
	Anticipates potential obstacles and makes contingency plans
Category 3: Performance (specific practices frequently demonstrated)	
Theme	**Competencies**
Anticipation	Reviews objectives and course content before facilitating
	Organizes the teaching space ahead of time
	Confirms equipment setup and function presession
Scenario facilitation	Collaborates well within the facilitation team
	Provides clear orientations and briefings
	Maintains scenario fidelity by minimizing intrusions and interruptions
	Gives responsive and timely manipulations of the scenario
	Recognizes salient actions and omissions while filtering out extraneous information
Debriefing behaviors	Adheres to the VAST debriefing framework
	Selects key learning objectives for further discussion
	Guides the discussion using targeted interventions
	Uses silence as a tool to facilitate engaging discussion
	Balances contribution from all participants
	Uses body language and eye contact effectively
	Employs microteaching selectively
	Avoids "traditional" teaching
	Summarizes key concepts and provides smooth transitions during debriefing
Category 4: Progression (methods for advancement toward competency)	
Theme	**Competencies**
During a course	Seeks and is receptive to feedback
	Reflects on own performance
	Observes and incorporates effective practices from other facilitators
	Undertakes graded responsibility and a stepwise approach to facilitation
Following a course	Seeks opportunities to practice simulation in the workplace
	Applies facilitation skills in other settings (postevent debriefing, feedback conversations)
	Seeks opportunities for ongoing mentorship
	Reinforces learning with additional reading, training, and other courses
	Builds regional and global networks

Abbreviation: VAST, Vital Anaesthesia Simulation Training.

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> […] There are oftentimes some gender related issues in terms of the male-female power differential, hierarchies … The instructor needs to be aware of that or find out what those hierarchies may be that may negatively impact the educational experience (participant 20).

Study participants indicated that how facilitators communicate, engage, work with, and influence people is crucial.

> […] sensitive to the communication and closing the loops when people have questions and making sure that questions don't go unanswered (participant 3).

> […] gently lead the participants to where they want to go and … clearly articulate what it is we're trying to achieve and how we're going to get there (participant 4).

The final theme in Persona is the facilitator's passion for teaching and learning and the care dedicated to the learning of others.

> The core requirement to be a facilitator is the passion. If that passion for simulation, for teaching, is not there, the facilitation, the debriefing, could just be a task, which is pretty much seen by the participants (participant 12).

> You have to be quite humble. So, you might think you know the answer but actually if you really want to "teach" … You have to want to help facilitate learning rather than wanting to tell people the answer (participant 14).

Principles

Study participants highlighted fundamental principles to optimize simulation environment, maximize learning, and enable effective course delivery. Nearly all emphasized the importance of fostering the right learning environment and creating a safe learning space where all course participants feel supported and encouraged. Recognition of the influence of culture and social hierarchy on power dynamics was regarded as a core competency for facilitators working in diverse settings.

> Reminding everybody that there are no hierarchies and no barriers and that this is a safe place for people who ordinarily might not voice their opinion (participant 3).

> Make the environment a friendly environment so the participants can freely speak their minds, give positive reinforcement rather than making it some kind of blaming or shaming session (participant 17).

Core competencies were reflected in a participant-centered approach. Facilitators need to be curious about culture and context and be capable of adapting facilitation techniques based on the groups' language, understanding, and performance. In addition, meaningful debriefing is supported by encouraging a learner-centered setting[21] and validating course participant contributions.

> If you come across a group of participants whose knowledge base is perhaps not as strong as you were led to believe, then you can upscale it or downscale it in order to still achieve a good learning environment for those participants (participant 15).

> Questions when posed certain ways or when reframed in certain ways either validate a participant's experience or actually potentially invalidate a participant's experience (participant 7).

Within the theme of debriefing principles, study participants touched on learning theories that support effective debriefing and experiential learning. They commented on the advocacy-enquiry approach[14] to address performance and to construct new understanding. They noted the value of distilling discussions to focus on transferable knowledge and skills.

> […] facilitators asking questions with curiosity and trying to uncover information about the decision making and the thinking processes of their learners is what makes, in my experience, the debriefs effective (participant 1).

> [the facilitator] was helping you to bring out from your ideas to build up and to understand. It was amazing to see how everyone was able to express himself, and at the end we were able to get solutions or response from us, not from [the facilitator] (participant 9).

To promote effective facilitation and VAST Course delivery, study participants expressed the need for higher level thinking and recognition of the overall context. Competencies associated with this theme include the specifics of scenario delivery and debriefing (eg, focusing on the key learning objectives) and an appreciation of logistics and time management. More broadly, effective VAST facilitators anticipate and plan for potential obstacles and prioritize local faculty development.

> You had full control of the situation … [and] let participants talk…you were able to stop people and lead them back to the main point, especially when the group was going off topic (participant 19).

> Keeping an eye on the overall picture, how the day, the course is proceeding, both in the interests of keeping to time but also making changes to the course from day-to-day (participant 16).

Performance

Study participants identified specific practices that effective facilitators demonstrated during course delivery. The theme of anticipation reflects the need to be familiar with course content and to prepare the learning space ahead of time by confirming the setup and functionality of equipment.

> If there was confusion or chaos going into the simulation, there's probably going to be some confusion and chaos coming out of it… it is the job of the facilitator to make sure that the simulation is set up and organized appropriately (participant 10).

> Move things, move furniture, prepare, have a checklist kind of attitude to be able to prepare things because simulation, … if you are going to run a good scenario and have the participants go through it, you have to have all your equipment ready, you have to have all your setup ready, you have to understand what individual roles each person is going to play (participant 19).

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The theme of scenario facilitation relates to how facilitators work within their team, brief course participants, manipulate the scenario, and extract salient observations on which to base their debriefing discussion.

> Communication skills with your other facilitator. Making sure you understand each other's roles. Who's going to co-facilitate? Who's going to debrief? Being very clear on that (participant 2).

> So, I think an ability to, as I said before, to zone out some of the noise and to make sure you know what you are looking for that is going to be important in the debrief (participant 3).

Competencies consistently reported for debriefing behaviors were the use of the VAST debriefing framework to structure the debrief, focusing the discussion on key learning objectives and avoiding didactic teaching. Appropriate body language and using silence to promote course participant–led discussion also enhanced debriefing quality.

> So, there is a framework that you can follow easily. At the same time, there is no constraints, or there [are] limited constraints, still that you can bring your own way using the framework. And this is great (participant 13).

> Debriefing that I thought went particularly well was when the facilitators spoke very little in the debrief and actually encouraged the participants to set the scene for the debrief and also generate the dialogue and direction of the debrief (participant 15).

Progression

The final category, Progression, relates to how facilitators advance toward competency in course delivery. Self-reflection, seeking feedback, and learning from others were commonly reported ways to improve facilitation skills. Study participants indicated that after course completion, opportunities to practice newfound skills in the workplace should be sought. Mentorship and establishing regional and global networks were viewed as important mechanisms for facilitator development.

> The well performing trainee facilitators, after a day, maybe two days of practicing simulation facilitation, they start to realize their own limitations and they start to get a feel for how they're going to improve in the future (participant 1).

> I did the course and I found the debriefing to be something that is applicable not only in VAST but in numerable aspects of life. I personally used it once in a very unfortunate event with a patient in anesthesia. We had a debrief as a team and actually I applied exactly the same thing I had learnt from VAST on how to do a debriefing (participant 18).

> One of the very huge things I appreciate about VAST is that it brings together people from different countries, different backgrounds and at the end of the day when you talk about it and share your experiences, I think it's quite helpful for the future of anesthesia, for building simulation in anesthesia (participant 17).

DISCUSSION

Delivery of SBE in resource-limited environments poses a unique set of challenges. VAST Courses are routinely conducted by a heterogeneous group of facilitators outside a clinical or purpose-built simulation environment. Courses are delivered by faculty from both HICs and LMICs and incorporate both trainees and experienced facilitators. Potential language barriers, cultural factors, and the participation of learners with limited exposure to SBE add further complexity. It is not surprising that study participants identified aspects of Persona—for example, flexibility, social awareness, and an enthusiastic approach—as positive attributes for facilitators in this setting.

Study participants asserted that the Principles category should be used by VAST facilitators to incorporate core learning theory and educational methodology in the simulation environment.[22] They valued the structured VAST debriefing framework. This may reflect the finding that scripted debriefing by novice instructors was associated with improved performance following simulation training.[23] The VAST facilitator trajectory has a progression reflective of Benner's novice-to-expert model, starting at "trainee-facilitator," progressing to "facilitator," and finally to "instructor" (equivalent to course director).[24] While all VAST Course faculty are encouraged to use the VAST framework for debriefing, this consistent and structured approach is likely of greatest value to trainee-facilitators.

Cultural context is increasingly recognized as influencing all aspects of SBE, in particular debriefing.[10] Perry et al[25] noted that host community culture impacts the norms of communication and teamwork. Various cultures may have teaching and learning practices that are substantially different from the facilitators' educational background,[10] resulting in disparate expectations for how feedback is delivered.[26] Debriefing practices used by simulation facilitators from different countries reflect their culture and the extent of social hierarchy in their community.[27] VAST promotes the cross-cultural educational collaboration, a process increasingly seen in the context of globalization.[28] Imposition of principles and practices from one cultural context on another can disrupt learning experiences in a cross-cultural setting, or worse, be perceived as disrespectful.[29,30]

In a discussion on debriefing and cultural differences between the "west and east," Lateef[26] proposed that approaching with an inquisitive and culturally curious mindset may enhance the impact of education in this setting. Study participants valued experiential learning and participant-driven reflection.[31] In some contexts, this may be a novel and uncomfortable expectation for learners. Study participants addressed the need for VAST facilitators to be sensitive to and curious about elements of culture and language that may impact simulation performance. As Chung et al[10] describe, it is essential to identify which aspects of

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culture are "safety neutral" and which aspects could impact patient safety. By debriefing in a way that sensitively explores the role culture plays in clinical performance, VAST facilitators may promote a deeper understanding of underlying factors impacting team behavior and develop insights into the perspective of others.[32]

A safe learning environment is essential for any effective SBE activity[33]; however, the specific elements that constitute this environment may vary with context.[34] Expectations of learners, such as active participation, suspension of disbelief, and open discussion during debriefing, could pose significant challenges in a cross-cultural setting.[26,29] Study participants noted that facilitators must set clear expectations, validate participants' contributions, and establish a space for open discussion to ensure a safe learning environment. This includes sensitivity, awareness of the underlying patterns of communication, and perception of power dynamics within a group. Facilitators should aim to understand how debriefing can be integrated into varying contexts to optimize outcomes for learners.[10] Furthermore, there is also a responsibility to provide a "safe container" for those undertaking facilitator training or delivering the simulation. Awareness of the safety needs of all involved in simulation training is imperative.[35]

The VAST Course has been delivered in both LMICs and HICs (https://vastcourse.org). Though resource-limited environments are often thought of as existing exclusively in LMICs, there are many resource-limited environments in HICs that present challenges similar to their LMIC counterparts.[36] In resource-limited environments, low-cost simulation is emerging as a useful educational method.[5] VAST has demonstrated the capacity to produce sustained improvements in course participants' nontechnical skills.[37] Competencies of effective VAST facilitators identified in this study reflect the core qualities promoted in best practice standards for simulation educators.[22,38]

Key points of difference from this study are the requirements for facilitators in resource-limited settings to be highly flexible and to explore the contextual, cultural, and communication factors that may impact learners' performance. Existing facilitator-assessment tools may not be reliable when applied in resource-limited environments[11] and are likely to overlook the full complement of skills required for delivery of SBE in these settings. A tool for assessing facilitator competency in this environment allows for refinement of facilitator training methods, thus enhancing faculty development.

The principles of simulation faculty development are currently guided by lessons learned from health care education in general.[39] However, literature on simulation facilitator development for SBE in resource-limited settings is lacking.[5] This study explores VAST facilitators' opinions on the experiences and training requirements required for delivery of VAST courses or SBE in a cross-cultural, resource-limited environment. Study participants highlighted the need for facilitators to develop an understanding of the local culture and practices that influence clinical performance and teamwork. Attention must be paid to language and to ensuring course participant understanding. There should be an established pathway for practice of new skills and ongoing mentorship opportunities. VAST uses a "train-the-trainer" model for faculty development. Peer and/or instructor observation and feedback using structured assessment tools are important mechanisms for honing expertise and supporting skill development among facilitators.[40]

The study is limited in applicability outside of VAST facilitation. Purposive sampling of VAST facilitators from 9 HIC and LMIC countries does not represent the entirety of experience with SBE in resource-limited environments. The study focuses on the attributes of effective facilitators from a facilitator standpoint, whereas a more holistic investigation would aim to also include course participants' perspectives. Deeper exploration of the course participants' expectation and experience would provide insight into how to utilize SBE in cross-cultural settings. The interviewers had preexisting relationships with the study participants that may have influenced the responses; however, the principle of reflexivity is accepted in qualitative research. The influence of researchers is a recognized and valuable aspect of understanding the phenomenon under study.[20] Despite these limitations, establishing the effective attributes of VAST facilitators is a major step toward developing a purpose-built tool for training them to deliver SBE in resource-limited environments.

CONCLUSIONS

This study describes the qualities of effective VAST facilitators for delivery of immersive, multidisciplinary SBE in resource-limited settings. Interwoven across all responses was the finding that effective VAST facilitators must be cognizant of how context, culture, and language may impact delivery of SBE. To progress toward competency, facilitators must be open to self-reflection, be provided with mentorship, and have opportunity for practice. These findings are unique in their nuanced exploration of practices of effective simulation facilitation in cross-cultural and resource-limited settings. The study highlights the need for a validated tool capable of assessing simulation facilitator performance outside the refined scope of existing frameworks designed for resource-rich settings.

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ACKNOWLEDGMENTS

While this work was unfunded, it is one component of a larger project funded by Royal College International to improve capacity for simulation-based education of health care providers in low-resource settings.

DISCLOSURES

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Contribution: This author helped contribute to study design, ethics protocol development/approval, data collection, data analysis, and manuscript preparation.
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