OPEN

Closing the Gap: Experienced Simulation Educators' Role and Impact on Everyday Health care

Éva Tamás, MD, PhD; Marie-Louise Södersved Källestedt, RNA, PhD; Håkan Hult, PhD; Klas Karlgren, PhD; Renée Allvin, RNA, PhD

Introduction: Trained simulation educators (SEs) usually work both at simulation centers and in everyday health care, and thus, they possess dual expertise. Experienced SEs are known to grow confident with their expanding experience, but evidence is scarce about how this affects their development as clinical professionals. The aim of this study was to explore how experienced SEs describe their role within the context of everyday health care.

Methods: An explorative descriptive study including 14 semistructured interviews and 27 questionnaires was conducted with 41 experienced SEs. An inductive thematic analysis was used to identify and analyze patterns describing SEs' perceptions of the influence of their educational work on everyday health care.

Results: The SEs' descriptions of their encounters during everyday clinical work, which were affected by the fact that they had experience of facilitating simulation training, were gathered into three main themes with three of their own subthemes: education (educational needs, routines/guidelines, and being a resource), nontechnical skills (communication, feedback, and leadership/coworkership), and clinical proficiency (situational insight, role model, and confidence in clinical practice). The insights gained and actions taken as clinical professionals are all intended to be implemented with the ultimate aim of safe patient care.

Discussion: All the aspects of the SEs' work are perceived to be successfully translated into clinical practice and can be summarized by the main themes of education, nontechnical skills, and clinical proficiency as delineated by this study. These themes are demonstrated at the individual, team, and organizational levels through increased competence and confidence.

Keywords: simulation educator, medical simulation, continuing medical education, patient safety, knowledge translation

DOI: 10.1097/CEH.0000000000000240

Simulation educators (SEs) are a new and expanding group of professionals who are expected to have special pedagogical knowledge in addition to their expert knowledge within a given clinical specialty. There are a growing number of national and international credential programs for SEs, focusing on various aspects of medical simulation. Trained educators are considered to represent one of the three essential components for a successful simulation.[1] They usually work both at simulation centers and in health care, and thus possess dual expertise.

Disclosures: The authors declare no conflict of interest. The study was supported by the Medical Research Council of Southeast Sweden.

Dr. Tamás: *Department of Cardiovascular Diseases, Institute of Medicine and Health, Medical Faculty, University of Linköping, Linköping, Sweden.* ***Dr. Södersved Källestedt:*** *Clinical Skills Center, Center for Clinical Research, Uppsala University, Västerås, Sweden.* ***Dr. Hult:*** *Department of Clinical Science, Intervention and Technology, Karolinska Institutet, Stockholm, Sweden.* ***Dr. Karlgren:*** *Department of Learning, Informatics, Management, and Ethics and Department of Clinical Science and Education, Södersjukhuset, Karolinska Institutet, Stockholm, Sweden.* ***Dr. Allvin:*** *Clinical Skills Center, Faculty of Medicine and Health, School of Medical Sciences, Örebro University, Örebro, Sweden.*

Correspondence: *Éva Tamás, MD, PhD, Department of Cardiovascular Diseases, Institute of Medicine and Health, Medical Faculty, University of Linköping, Linköping 58183, Sweden; e-mail: Eva.Tamas@liu.se.*

Development of expertise has been described as a five-stage process from novice to expert. The first four levels involve an analytical approach to theoretical knowledge and practical implementation of it, whereas at the expert level information is processed intuitively based on a holistic approach.[2] "Phronesis," which entails the mastering of situation-based skills, judgment, and wisdom in a clinical or educational situation, is another approximation of the above-mentioned holistic thinking.[3–5]

Nontechnical skills (eg, communication, leadership, and teamwork) are essential for well-functioning interprofessional teams[6,7] to ensure patient safety. Team learning has been described as a result of four interrelated processes on two levels.[8] Experiences and creative insights (intuition) of the team members are filtered both at individual and team levels (interpretation), and transformed into explicit concepts. Concepts that are shared and applied by the whole team are documented (codification). Codification is the final product of learning, and thereby it can be assumed that team learning has taken place.[8]

Organizational learning is collective learning of individuals at a community level.[9–11] Through its culture, structure, roles, routines, and documentation, an organization may provide a context for learning, which can lead to improvements of the organization.[12–15]

To date, despite extensive studies about medical simulation, a knowledge gap about the role SEs have in a clinical context still exists. Although previous research demonstrated that experienced SEs grow confident with expanding experience,[16] evidence is scarce about their development as clinical professionals.

Therefore, the aim of this study was to explore how experienced SEs describe their role within the context of everyday health care.

METHODS

The study has an explorative descriptive design,[17] using individual interviews and questionnaires as means of data collection. Ethical approval was obtained from the Regional Ethical Board in Linköping (ref: 2014/204-31).

A purposeful sampling was used to include experienced SEs. To be considered as an experienced SE, a criterion for study participation was that subjects had been working as an educator for at least 2 years and performed a minimum of 100 simulations as educators to secure adequate proficiency.

Two experienced SEs from each of seven simulation centers in Sweden were personally asked about participation in individual interviews, and all accepted. Members of a Swedish nationwide network for SEs, who fulfilled the inclusion criterion, were invited to answer an electronic questionnaire during a national conference. Twenty-seven responded. A total of 41 experienced SEs participated in the study. Demographic data are presented in Table 1.

Two sources of data were used. Individual interviews were conducted using a semistructured interview guide. All informants worked part time as SE and part time as clinicians in different hospital departments. Data were collected by one researcher at each simulation center. All the researchers had a range of experience in simulation education, including both their own participation and educational work. The interviews started with the open-ended question: "Can you please tell me about how you think and act in your work as a SE?" The first question was followed by: "Do you discuss your work as a SE with the manager of your clinical workplace"? and "What does your SE background mean for your clinical work?" To reach a deeper understanding, probing questions were asked, such as, "Could you describe that in detail?" Demographic data were collected at the beginning of each interview. The interviews were audio-recorded and lasted between 35 and 65 minutes. All the interviews were transcribed verbatim.

An electronic questionnaire was administered to members of a national network during an annual national conference. Oral information about the study was given at the beginning of the conference. The questionnaire consisted of written information, demographic data, and two questions: (1) "Do you discuss your work as a SE with the manager of your clinical workplace"? and (2) "What does your SE background mean for your clinical work (please give examples)?" Returning the questionnaires was regarded as consent to participate.

An inductive thematic analysis[18] was used to identify and analyze patterns describing SEs' perceptions of the influence of their educational work on everyday health care. Interview and survey data were first viewed separately. As data conformity was high, data from both sources were analyzed as an entity further on. In a first step, the transcribed interviews and the questionnaire answers were read several times to get an overview of the content. Ideas or patterns of interest for study purposes were marked in the text, and ideas about what the data contained were written down. In the next step, meaningful groups of text that referred to the SEs' experiences of having two different assignments and how these experiences were utilized were identified and coded. The different codes were discussed by the whole research team and collated into potential overarching themes. Finally, the specifics of each theme and the overall narrative were refined. During the analysis, discussions among the researchers were held to increase the trustworthiness. In the following, quotations are used to illustrate the findings.

The five researchers began with coding the interview text on their own. The codes were then compared and discussed among the researchers. During the analysis process, discussions about coding and categorization were held between the researchers to increase trustworthiness.[19,20]

RESULTS

The SEs' perceptions of their encounters during everyday clinical work, affected by the fact that they had experience in facilitating simulation trainings, were gathered into three main themes: education, nontechnical skills, and clinical proficiency (Figure 1).

TABLE 1.
Participant Characteristics

	Interviews (n = 14)	Questionnaire (n = 27)	Total (n = 41)
Gender, male/female (n/n)	7/7	9/18	16/25
Age, year mean (range)	49 (35–63)	48 (31–61)	48 (31–63)
Clinical profession, n (%)			
Physician	4 (29)	5 (19)	9 (22)
Registered specialist nurse	9 (64)	22 (81)	31 (76)
Midwife	1 (7)	0	1 (2)
Educator experience, year mean (range)	7 (4–15)	9.5 (3–25)	9 (3–25)
Instructor education course, n (%)*			
CAMES†	9 (64)	11 (41)	20 (49)
CAMST‡	2 (14)	8 (30)	10 (24)
CEPS§	4 (29)	0	4 (10)
Other	0	16 (59)	16 (39)
None	1 (1)	1 (4)	2 (5)

*Some of the participants had completed more than one course.

†Copenhagen Academy for Medical Education and Simulation.

‡Center for Advanced Medical Simulation and Training.

§Center for Education in Pediatric Simulation.

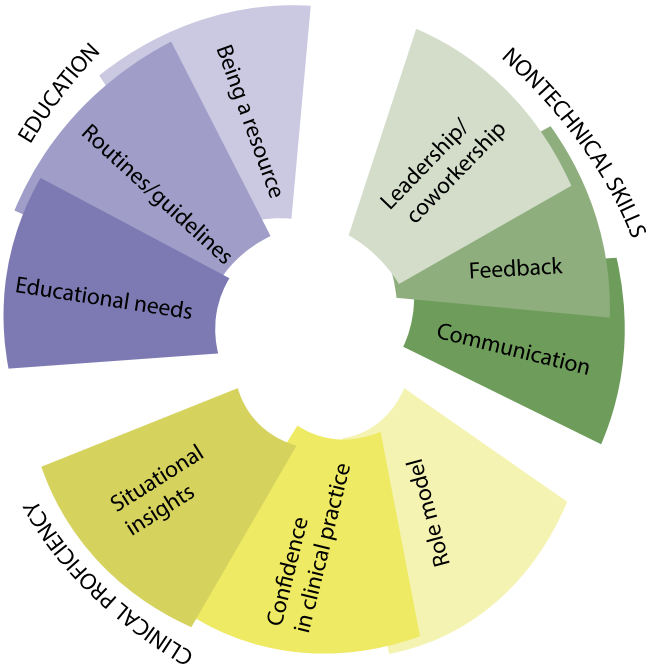

FIGURE 1. Concept map of the thematic analysis. The concept map shows the three main themes and nine subthemes.

Education

Under the main theme of "education," the SEs described the process of understanding gaps in their own competence, and in team and organizational learning, thereby identifying educational needs.

> "I often hear from colleagues if anything has gone wrong in a department and I can then bring that up in a scenario. I'm familiar with the ER." (I 13)

They believed that clinical staff who rarely or never participated in simulation education could not be expected to have the same structured way of acting as those who did.

> "Understanding that the specialties that rarely/never get to practice cannot be expected to have the same structured handling and communication." (I 7)

They developed an understanding of the different perspectives of the different professional backgrounds in clinical situations; thus, they stressed the importance of clear and structured communication. During the years they had been working as SE, they developed both as individuals and as health care professionals through the experiences from different medical simulation activities. The SEs said that they closed their own knowledge gaps by continuous learning.

> "After all, being an instructor involves constantly learning to be an instructor and being involved in the courses, even we are continuously learning; that's the way it is. Then there are emergency situations; and having the knowledge of what you're teaching until they can feel comfortable with it, it kind of also reflects on the others too." (I 7)

> "I'm getting better and better all the time at seeing myself through an instructor's eyes when I'm working clinically. I reflect a lot more now, about how I work in the team, how clear I am. Everything that I hear others reflecting on when I work at the clinical skills center... it can echo in my head when I look at myself" (I 13)

At a team level, the SEs described how simulation training contributed to the identification of breaches in compliance for ***routines and guidelines*** in the clinical setting.

> "We most often simulate in situ and situations or improvement ideas constantly come up in connection with these exercises. Here, we test through our routines and have the possibility to make improvements." (E24)

> "This has contributed to the development of guidelines and documents that form the basis of working safe, such as at the beginning of shifts for the team, and workplace adapted "Time Outs" for safe cooperation when the team takes in a new patient or when we go from calm situations to dangerous situations." (Q 19)

At an organizational level, they had a broader perspective from which they identified educational needs and wants for developing new routines, guidelines, and checklists in the clinical settings. Through simulation activities, they gained an understanding of the work at other hospital departments, which they could communicate to the manager of their own department. *"[I] get a different understanding of what other departments' "everyday lives" can be like." (Q 1)*

> "I have a broader foundation to stand on. [I] catch situations where I can see a need for training. [I] often see situations where my instructor background is of use." (Q 7)

Having experiences of simulation training, the SEs said that they contributed to overall health care development through suggestions of further development of guidelines and documents that support patient safe clinical practice.

Being a resource was the third subtheme under "education". Having the feeling of being alone with the responsibility for educational activities in the clinical setting could be seen as a challenge at an individual level. Likewise, the SEs reflected on the fact that they felt exploited as educators even at times when they needed education themselves.

> "Well, as an instructor, you don't actually have the role of a participant. After all, I also need to hone my practical skills. So, it's really great that they want to use me as an instructor, because it's proof that maybe they feel that I'm doing a good job. But at the same time ... Sometimes it's just nice to be a participant and not have to think like an instructor. And skills-wise, I actually sometimes just need to be a participant too." (I 4)

Being a resource was reported to be mostly appreciated. Some of the SEs had a manager who considered simulation training as an integrated part of the clinical practice. This support was described as a prerequisite for going ahead with their work. These SEs had discussions with the manager about ways of applying their knowledge acquired from being a SE and implementing the training goals from simulation training into clinical practice. By contrast, some other SEs described

managers who did not look upon the educators as resources. They did not show any interest or seem to understand the principles of simulation training or what it could lead to in the clinical setting.

> "I have a monologue with my boss about me being an instructor. Because I'm not . . . I really try to remind her that she has a resource in me, but I could be much more use than she thinks, but on the other hand, she actually doesn't have any insight into how this works . . ." (I 2)

Nontechnical Skills

The SEs were aware of how they communicated and acted, especially in emergency situations, and emphasized the importance of clear ***communication*** to prevent misunderstandings.

> "[Simulation is] of major significance. Especially in terms of knowledge about the team and communication. I can ensure that these topics are brought up at the clinic, like at training sessions and study days." (Q 14)

> "[Simulation affects] everything, both on a personal level, at work, when I'm under stress and so on. When I'm working, and an emergency situation comes up that can get dicey, I can go in and take control without being authoritarian or threatening to the team leader. I see myself as providing support and help. Most people are happy when I'm there because they know that I work with teamwork and think that it's fun. So patient safety first, and we do that by having good cooperation and keeping a positive atmosphere, which gives us job satisfaction. [It means that we are] able to see early stress and relieving each other from stress. [We have] clear communication to prevent misunderstandings. [We are] able to figure out unclear situations/discussions in a positive way. So, there is more patient safety, more job satisfaction, less stress". (Q 13)

Purposeful use of ***feedback*** or lack of it in clinical situations was described by the SE. They said that their experiences and training as SEs resulted in improved capability for giving feedback in everyday clinical situations as well.

> "I think that I'm much better at giving feedback to my younger colleagues now than I used to be. I do it in a much more humble and constructive way, I think. But it's also [about] my own development, after all I have to live up to my teaching . . ." (I 13)

> "Because you think in a different way, have experience of handling different people, practice your way of handling groups since you're subjected to this more as an instructor. So, it comes in handy in your other work." (I 3)

The subtheme of ***leadership/coworkership*** was described in terms of translation of knowledge gained during simulation sessions into clinical practice. Through their experience of simulation training, the SEs said they had gained a team perspective in their clinical work. They observed how colleagues handled different clinical situations and reflected on how to support them. They observed early signs of stress and could therefore give support in time. The SEs said that they strived to apply crisis resource management (CRM) principles in clinical work. They stated that simulation training provided a structure where everyone had a clear role in acute situations in clinical work.

> "[I] am clearer in my way of working in emergency situations, [and I] often hear that my clarity as a co-worker and in communication is appreciated by the people I work with." (Q 4)

> "I've probably acquired skills in situations that are hard to handle, that there are actually strategies for how I can 'speak-up' or take the lead if needed and turn over leadership." (I 2)

Clinical Proficiency

Confidence in clinical practice was described as a state where one had reached a higher level of self-confidence, especially in emergency care situations.

> "I've developed in everyday clinical activities through lessons I've learned myself in the simulation" (Q 5)

> "I feel more basic confidence in myself in the meetings with the patients, especially in emergency situations." (Q 1)

> "When you run a lot of scenarios, you learn something new all the time. I work as an intensive care nurse and often encounter emergency situations that I think I handle better because I see, lead, and practice a lot of scenarios." (Q 6)

Their professional skills of SE were strengthened by participating in a large number of learning activities and simulation training sessions along with other professions. During simulation training, they learned how to communicate in a structured way and to take responsibility for their actions, which helped them in their clinical work. The simulation education experience kept them updated and gave them confidence in everyday work. It taught them to appreciate their own strengths and weaknesses when facing complicated and complex clinical situations. Furthermore, it made them reflect on their own work performance in relation to being able to provide support and help for others.

> "Somehow, you spread a kind of sense of confidence when you get there since they know that they've met you before and that you're an instructor" (I 7)

The SEs described their intention to lead by example and perceived themselves as ***role models*** spreading confidence among the colleagues and coworkers.

> "It's incredibly important to the capital of trust to 'live as I teach' which forces me to apply the principles we practice and try to be a good example. I'm expected to be a role model." (Q 19)

> "Being a good role model for my colleagues." (Q 15)

The SEs felt that they had both competence and responsibility to intervene if needed in clinical situations, both to avoid medical errors and to correct failures in teamwork, which can be summarized as increased ***situational insights***.

> ". . . everyone does what they're supposed to [in a clinical situation] and as long as things move along, you might not need to change gear [in your role as an instructor], but if you

see that it's getting off track and there are a lot of people involved and if there's somebody who really knows what we are doing now, it's happened that I've sort of raised my voice a little and tried to clarify that I'm on this side and I've experienced this, exactly as I . . . and now we are going to do this. You do this and you do that, and so . . . yes . . . So, I would claim that you have a great deal of use for it [ie, simulation]" (I 9)

". . . and you feel a responsibility yourself, I'm not going to just stand and watch when something happens, rather it feels like, for one thing, this is supposed to be my specialty and you stand up when something happens, and many people turn to me when things go awry, or when we expect a very sick child." (I 10)

DISCUSSION

The common feature of the delineated three main themes is identifying and closing knowledge gaps at different levels of the clinical context. Working as a SE requires up-to-date, evidence-based theoretical knowledge of medical issues. It provides ample opportunities for observation and analysis of how technical and nontechnical skills are implemented in the simulated environment. Thereby, the SE learns how to be an explorer and identify knowledge gaps during simulation sessions.[21,22] Furthermore, giving constructive feedback is an essential part of the work of SEs, and such feedback would not be possible without being confident both as an educator and as a clinical professional. The experience of working as a SE provides tools for closing the identified gaps with confidence. This confidence is built as much on experience as on lifelong learning.[16,23] Translation of knowledge about the above features of SEs' work into clinical practice could be identified at the individual, team, and organizational levels in this study.

As clinical professionals, the SEs said that they developed the ability to look at themselves from a distance and to identify their own knowledge gaps and fill those gaps without any external supervision to keep the desired standards.[24] CRM refers to the nontechnical skills (communication, decision making, situational awareness, and recognition of own and colleagues' reaction patterns) required for effective teamwork in a crisis situation. CRM originates from aviation and was adopted for health care.[25] The SEs perceived that they performed technical skills and used nontechnical skills in a clinical context at a higher level of competency, which was acknowledged by their colleagues and health care managers. They described themselves as confident clinical professionals possessing the ability to simultaneously act based on a holistic interpretation of clinical events and to support their team either as leaders or coworkers. This holistic interpretation as basis for patient management and teamwork is a key feature of becoming an expert. Their self-esteem and confidence were believed to originate from the long hours of practice and work in a simulated environment, and their reflections connected to those experiences.

From a clinical team perspective, it is important to have a team member who can identify the actual and relevant needs of continuing education.[26,27] Beyond having responsibility for educational activities, the SE regarded themselves as role models for their colleagues. They described having the ambition to act as role models as well as experiencing the expectation from other team members to act as role models. The extent of their theoretical knowledge of both technical and nontechnical skills and the way they were able to implement this knowledge transferred their confidence to the team they were part of.[28] Their increased situational insights facilitated improved teamwork, although they did not necessarily take the lead but were able to give support adequately and to reduce the stress level (which was reported usually to be high) for their team members.[6] This was made possible by using their experience of simulation education sessions about how individuals act and react.

Also, SEs actively supported the learning of the organization. Having identified gaps and having the means of closing these gaps placed the SEs in a key position even in the clinical context. They were used as resources for educational issues in all the possible aspects such as design, training, logistics, and evaluation of simulation sessions, sometimes to such a degree that they expressed worry about missing opportunities to take part in simulation training themselves and train in simulation sessions as participants. Local guidelines were often developed by the SEs who perceived that they were given the mandate to take actions to close the gaps they had identified. Those who did not have a formal mandate within the organization expressed their frustration. Local guidelines are written codes that summarize and formalize local practice based on the shared knowledge and practice of the community. Thereby, they are the products of the codification of the organization's learning processes. Their existence is a testimony that learning has happened. At the organizational level, the ultimate objective named by the SEs was patient safety, and all actions for increasing competency were intended for the benefit of their patients in the long term.

Confidence is perceptible at every level: confidence in excelling in clinical practice at the individual level; boosting the confidence of other team members by sharing competence; and confidence in improving patient management by codifying the common values and shared knowledge of the community by establishing local guidelines.[11] These are made possible through a process that starts by gaining insights (eg, identifying needs or gaps), followed by decisive development work to raise standards.[29]

We used a qualitative design with the intention of seeking information on SEs' role and impact on everyday health care, rather than generalize to a larger population. A strength of this study is that two sources of data, which turned out to have high conformity, were used to get a wider view of the research question.[19] The SEs had substantial experience of working as a SE and had varying backgrounds and experience regarding educator courses and clinical professions. Moreover, they worked at medical centers in different parts of Sweden. Just over 100 persons, including both university and health care professionals, participated in the national meeting where the questionnaire was presented. As we do not know how many of those met the inclusion criteria, we cannot specify a response rate. Furthermore, the authors represent different areas of expertise, which brought different perspectives and opportunities to the analytical discussions of the findings.

CONCLUSION

In conclusion, this study revealed that all the aspects of the SEs' work are perceived to be successfully translated to clinical

practice and can be summarized by the main themes of education, nontechnical skills, and clinical proficiency. These themes are demonstrated at the individual, team, and organizational levels through increased competence and confidence. The insights gained as educators and actions taken as clinical professionals are all intended to be implemented with the ultimate aim of safe patient care.

Lessons for Practice

- All the pedagogical aspects of simulation educators' work were perceived to be successfully translated to clinical practice and can be summarized by the main themes of education, nontechnical skills, and clinical proficiency.
- The identified themes are demonstrated at the individual, team, and organizational levels through increased competence and confidence.
- The insights gained as educators and actions taken as clinical professionals are all intended to be implemented with the ultimate aim of safe patient care.

ACKNOWLEDGMENTS

The authors thank Magnus Berndtzon, RNA (Region County Jönköping), Liisa Carlzon, MD (Sahlgrenska University Hospital), Samuel Edelbring, PhD (Karolinska Institutet), and Magnus Hultin, MD, PhD (Umeå University) for interviewing SEs for the study.

REFERENCES

1. Issenberg SB. The scope of simulation-based healthcare education. *Simul Healthc*. 2006;1:203–208.
2. Dreyfus SE. The five-stage model of adult skill acquisition. *Bull Sci Tech Soc*. 2004;24:177–181.
3. Leathard HL, Cook MJ. Learning for holistic care: addressing practical wisdom (phronesis) and the spiritual sphere. *J Adv Nurs*. 2009;65:1318–1327.
4. Svenaeus F. Hermeneutics of medicine in the wake of Gadamer: the issue of phronesis. *Theor Med Bioeth*. 2003;24:407–431.
5. Vaughan-Graham J, Cott C. Practical wisdom the role of professional practice knowledge in the clinical reasoning of Bobath instructors. *J Eval Clin Pract*. 2017;23:935–948.
6. Sexton JB, Thomas EJ, Helmreich RL. Error, stress, and teamwork in medicine and aviation: cross sectional surveys. *BMJ*. 2000;320:745–749.
7. Shapiro MJ, Morey JC, Small SD, et al. Simulation based teamwork training for emergency department staff: does it improve clinical team performance when added to an existing didactic teamwork curriculum? *Qual Saf Health Care*. 2004;13:417–421.
8. Kostopoulos KC, Yiannis EP, Gregory P. Structure and function of team learning emergence: a multilevel empirical validation. *J Manag*. 2013;39:6.
9. Brown JSD P. Organizational learning and communities of practice: toward a unified view of working, learning and innovation. *Organ Sci*. 1991;2:40–57.
10. Crossan ML H, White R, Djurfeldt L. Organisational learning: dimensions for a theory. *Int J Organizational Anal*. 1995;3:337–360.
11. Wenger E *Communities of Practice: Learning, Meaning, and Identity*. Cambridge, United Kingdom, New York, NY: Cambridge University Press; 1998.
12. Cohen MDB P. Organizational routines as stored in procedural evidence from a laboratory study. *Organ Sci*. 1994;5:554–568.
13. Schulz M. The uncertain relevance of newness: organisational learning and knowledge flows. *Acad Manage J*. 2001;44:661–682.
14. Walsh JPU GR. Organizational memory. *Acad Manag Rev*. 1991;16:57–91.
15. Weick KE, Roberts KH. Collective minds in organizations: heedful interrelating on flight decks. *Administrative Sci Q*. 1993;38:357–381.
16. Allvin R, Berndtzon M, Carlzon L, et al. Confident but not theoretically grounded—experienced simulation educators' perceptions of their own professional development. *Adv Med Educ Pract*. 2017;8:99–108.
17. Polit DF, Beck CT. *Nursing Research: Generating and Assessing Evidence of Nursing Practice*. 7th ed. Philadelphia, PA: Lippincott, Williams, & Wilkins; 2011.
18. Braun VCV. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3:77–101.
19. Kitto SC, Chesters J, Grbich C. Quality in qualitative research. *Med J Aust*. 2008;188:243–246.
20. Lincoln YS, Guba EG. *Naturalistic Inquiry*. Beverly Hills, CA: Sage Publications; 1985.
21. Burgess A, Nestel D. Facilitating the development of professional identity through peer assisted learning in medical education. *Adv Med Educ Pract*. 2014;5:403–406.
22. Fraser SW, Greenhalgh T. Coping with complexity: educating for capability. *BMJ*. 2001;323:799–803.
23. Dieckmann P, Birkvad Rasmussen M, Issenberg SB, et al. Long-term experiences of being a simulation-educator: a multinational interview study. *Med Teach*. 2018;40:713–720.
24. Ziv A, Ben-David S, Ziv M. Simulation based medical education: an opportunity to learn from errors. *Med Teach*. 2005;27:193–199.
25. Ostergaard D, Dieckmann P, Lippert A. Simulation and CRM. *Best Pract Res Clin Anaesthesiol*. 2011;25:239–249.
26. McPherson K, Headrick L, Moss F. Working and learning together: good quality care depends on it, but how can we achieve it? *Qual Health Care*. 2001;10(suppl 2):ii46–ii53.
27. Aggarwal R, Mytton OT, Derbrew M, et al. Training and simulation for patient safety. *Qual Saf Health Care*. 2010;19(suppl 2):i34–i43.
28. Heaven C, Clegg J, Maguire P. Transfer of communication skills training from workshop to workplace: the impact of clinical supervision. *Patient Educ Couns*. 2006;60:313–325.
29. World Health Organization. Transforming and scaling up health professional education and training. In: *Policy Brief on Regulation of Health Professions Education*. Geneva, Switzerland: WHO Press; 2013.