

SIMULATION ARTICLES OF INFLUENCE

July 2021 – June 2022

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Michelle Kelly, PhD, RN, FSSH

Gabriel Reedy, PhD, FSSH

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**On behalf of the SSH
Research Committee**



IMSH

Society for Simulation in Healthcare

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WELCOME



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DISCLOSURES

Serkan Toy

- Associate Editor, *Advances in Simulation*



Michelle Kelly

- Associate Editor, *Advances in Simulation*
- Assistant Editor, *Clinical Simulation in Nursing*



Gabriel Reedy

- Editor in Chief, *Advances in Simulation*



Cathy Smith

- Associate Editor, *International Journal of Healthcare Simulation*



Learning Objectives

- Identify the range of journals where simulation-focused research and scholarship are regularly published.
- Discuss how a different research approach, identified from one of the articles, might inform your future work.
- Identify how the broad range of articles presented in this session might impact on your own practice.

Building a Research Culture in Simulation

- Developing and celebrating excellent research in simulation
- Highlighting significant work in the field
- Exploring articles you may have missed
- Common in other learned society meetings
- A complex task even in a narrow range
- Influencing simulation practice and research (rather than ranking)
- Refining the process and methodology that is repeatable and builds year-on-year

Process

213 articles sent for review

down from 246 last year

Published research, review, and conceptual articles
July 2021 through June 2022

A total of 50 reviewers included in 17 reviewer groups

2 to 3 individuals reviewed ≤ 15 papers each and
used a **5-point scale** to rate them

Simulation in Healthcare
77 articles included for review

6 reviewer groups
identified 15 articles

Clinical Simulation in Nursing
88 articles included for review

7 reviewer groups
identified 20 articles

Advances in Simulation
36 articles included for review

3 reviewer groups
identified 8 articles

Int Journal of Healthcare Simulation
12 articles included for review

1 reviewer group
identified 1 article

Wildcard Option
(? articles were suggested)

(? article met the
criteria)

rated ≥ 4 by at
least 2 reviewers

44 articles were selected

32 will be featured today

Simulation in Healthcare

Langevin et al (2022)

Improving Safety Recommendations Before Implementation: A Simulation-Based Event Analysis to Optimize Interventions Designed to Prevent Recurrence of Adverse Events

Ahmed et al (2022)

Accreditation of Simulation Fellowships and Training Programs: More Checkboxes or Elevating the Field?

Lauridsen et al (2022)

Cardiopulmonary Resuscitation Training for Healthcare Professionals: A Scoping Review

Finalists*

(rated 4 or 5 by 2 or more reviewers)

Clinical Simulation in Nursing

Hayes et al (2022)

Bouncing off Each Other: Experiencing Interprofessional Collaboration Through Simulation.

White et al (2021)

On the Other Side of Simulation: Evaluating Faculty Debriefing Styles.

Goldsworthy et al (2022)

Combining Virtual and High-fidelity Simulation to Foster Confidence and Competency in Postpartum Assessment Complications among Undergraduate Nursing Students.

Singleton et al (2022)

Effect of Non-Immersive Virtual Reality Simulation on Type 2 Diabetes Education for Nursing Students: A Randomised Controlled Trial.

Lund et al (2022)

Simulation-Based Teaching to Improve Perioperative Care of Transgender Patients.

Clinical Simulation in Nursing

Campbell et al (2021)

Simulation as a Disruptive Innovation in Advanced Practice Nursing Programs: A Report from a Qualitative Examination.

White et al (2021)

On the Other Side of Simulation: Evaluating Faculty Debriefing Styles.

Goldsworthy et al (2022)

Co-debriefing Virtual Simulations: An International Perspective.

Wong et al (2022)

Interprofessional Disaster Simulation During the COVID-19 Pandemic: Adapting to Fully Online Learning.

Herbert & Sibley (2022)

Addressing 4Ms of Age-Friendly Health Systems for Older Adults in Family Nurse Practitioner Education through Simulation-Based Learning.

Finalists*

(rated 4 or 5 by 2 or more reviewers)

International Journal of Healthcare Simulation

Knickle et al (2021)

Authoring and othering: examining bias in scenario design

Advances in Simulation

Behrens et al (2021)

'A roller coaster of emotions': a phenomenological study on medical students lived experiences of emotions in complex simulation

Kainth (2021)

Dynamic Plus-Delta: an agile debriefing approach centred around variable participant, faculty and contextual factors

Lopez et al (2021)

Percutaneous transhepatic biliary puncture simulator: a cord network prototype

Gent & Kainth (2022)

Simulation-based procedure training (SBPT) in rarely performed procedures: a blueprint for theory-informed design considerations

Advances in Simulation

Abildgren et al (2022)

The effectiveness of improving healthcare teams' human factor skills using simulation-based training: a systematic review

Alinier & Oriot (2022)

Simulation-based education: deceiving learners with good intent

Purdy et al (2022)

Taking simulation out of its "safe container"-exploring the bidirectional impacts of psychological safety and simulation in an emergency department

Mosher et al (2021)

Perspectives of engagement in distance debriefings



Featured articles

(mean scores >4)

Simulation in Healthcare (12)

Clinical Simulation in Nursing (11)

Advances in Simulation (8)

International Journal of Healthcare Simulation (1)



Simulation in Healthcare (12)

Balmaks R, Grāmatniece A, Vilde A, Ļuļļa M, Dumpis U, Gross IT, Šlēziņa I. A simulation-based failure mode analysis of SARS-CoV-2 infection control and prevention in emergency departments. *Simulation in Healthcare*. 2021;16(6):386-91.

Background and Methods

- A multicenter, cross-sectional, observational study
- Conducted at 7 hospitals in Latvia from March 2 to 26, 2020.
- A COVID-19 patient was simulated with in situ simulations, followed by a structured debrief.
- Used failure mode analysis during in situ simulations to provide an action plan for mitigating occupational hazards and the spread of COVID-19.

Findings

- A total of 67 healthcare workers participated in the study
- Out of 32 observed failure modes, 27 (84%) were classified as medium or high risk
- Of these:
 - 11 (40.7%) organizational,
 - 11 (40.7%) individual, and
 - 5 (18.5%) were environmental factors.
- Simulation-based failure mode analysis was found helpful in identifying the risks related to the preparedness of the healthcare workers for the COVID-19 pandemic in Latvia.

**Reviewer
comments**

This article discusses the importance of emotional climate while using simulation-based learning; it is influential for me because I use simulation on daily basis with undergrad and postgrad students and face these issues.

Provides simulationists with evidence of what participants experience---Great considerations for all that do simulation-based experiences!



Simulation in Healthcare (12)

Bohnert CA, Combs RM, Noonan EJ, Weathers AE, Weingartner LA. Gender minorities in simulation: a mixed methods study of medical school standardized patient programs in the United States and Canada. *Simulation in Healthcare*. 2021;16(6):e151-8.

Background and Methods

- Standardized patient (SP) programs have little published guidance for gender-affirming care
- Invited US and Canadian medical schools to determine how gender minorities are represented in SP encounters
- Programs representing patients with diverse gender identities were invited to complete semi-structured interviews
- Discussions were analyzed using a modified grounded theory method

Findings

- 59 of 208 programs completed the survey and 24 completed interviews
- 59% of programs used gender minority SPs (n = 35)
- 52.5% of the programs reported portraying gender minority cases (n = 31)
- Interviewees noted the importance of case development, engaging subject matter experts with lived experience, and ensuring psychological safety of gender minority SPs
- Barriers included recruitment, fear of disrespecting gender minority communities, and transphobia

**Reviewer
comments**

... demonstrates the importance of bringing people with cultural and experiential knowledge, through lived experiences, to assist/support with case development and supporting SP roles. Not in the article, but possibly a jumping-off point to utilizing standardized voices(SVs) as part of simulations

A broad data-driven study of highly contemporary issues in LGBTQ inclusion in medical education; highlights variance across the country and provides a valuable perspective in simulation.



Simulation in Healthcare (12)

Koski K, Ostherr K. “I Guess I Didn't Like That Word Unfortunately”: Standardized Patients' Unscripted Techniques for Training Medical Students. *Simulation in Healthcare*. 2021;16(5):334-40.

Background and Methods

- Explores tacit techniques embedded in standardized patients' (SPs) unscripted dialog
- A film-based ethnographic inquiry in a context of breaking bad (BBN) news
- Used conversation analysis to examine echo utterances (SP repeats all or part of what the student has said)
- The data set includes 9 student encounters with 2 female SPs who specialize in the BBN simulation

Findings

- Identified a technique of “repair request” used by the SPs to provide an opportunity for the student to reformulate their utterance in character
- Repair requests emerged from 4 main types of student speech: speculative language, inappropriate utterances, awkward timing, and medical jargon
- These findings suggest the need for further research to identify additional tacit techniques used by SPs to improve medical education

**Reviewer
comments**

Any techniques for improving communication is always welcome and needed.

... highlights the importance of using SP's in communication training and how specific language can impact a patient's perception of their provider.

This study enhances the opportunity for the SP to create an environment of learning that can impact the student.



Simulation in Healthcare (12)

Anton N, Calhoun AC, Stefanidis D. Current Research Priorities in Healthcare Simulation: Results of a Delphi Survey. Simulation in Healthcare. 2022;17(1):e1-7.

Background and Methods

- Society for Simulation in Healthcare (SSH) Research Committee convened summits In 2011 and 2017
- After the second summit, the SSH Research Committee used systematic methodology to develop a prioritized research agenda
- A modified Delphi approach was conducted in 3 survey rounds.
- The agenda developed in this study may help guide and focus researcher efforts and funding agency decisions, ultimately helping advance the field.

Findings

- 17 experts submitted 74 questions, which were reduced to 21 reformulated items.
- The top 3 research question identified by the experts were related to
 - (1) the impact of system level simulation interventions on system efficiency, patient safety, and patient outcomes;
 - (2) the return on investment of simulation for healthcare systems, and
 - (3) whether a dose-response relationship exists between simulation training and performance/patient outcomes.

**Reviewer
comments**

This is a benefit to the research community to understand what current trends in research are.

This paper can set the overall direction for prioritizing simulation research for the foreseeable future.

Helps to move the collective body of simulation in specific directions



Simulation in Healthcare (12)

Suet G, Blanie A, De Montblanc J, Benhamou D. Use of an Observer Tool to Enhance Observers' Learning of Anesthesia Residents During High-Fidelity Simulation: A Randomized Controlled Trial. *Simulation in Healthcare*. 2022;17(1):e75-82.

Background and Methods

- Studies suggest a positive educational value when sim learners are observers
- Uncertain whether using an observer tool (OT) impacts learning outcomes
- 89 anesthesia residents randomized to use an OT (n = 44, OT+) or not (n = 45, OT-)
- Learning outcomes assessed by comparing the change (before-after) in self-reported medical knowledge gain
- Measures also included perceived stress levels and the Anesthetists' Non-Technical Skill items values

Findings

- Mean medical knowledge score was higher in the OT+ group (11.4 ± 2.7 vs. 9.6 ± 2.4 , respectively, $P < 0.001$).
- No difference in the perceived stress levels or value and satisfaction related to the simulation course
- Provides some evidence that using an OT improves the sim's educational value

**Reviewer
comments**

... demonstrated that observers' engagement can be increased with a simple tool and subsequently assessed in regard to knowledge acquisition.

With increasing learner numbers and sim space not expanding, we are increasingly considering the role of the observer participant in our simulation experiences. ... This study influences me to consider using an OT for my observing participants in simulation experiences ...



Simulation in Healthcare (12)

Vera M, Kattan E, Cerda T, Niklitshek J, Montaña R, Varas J, Corvetto MA. Implementation of distance-based simulation training programs for healthcare professionals: breaking barriers during COVID-19 pandemic. Simulation in Healthcare. 2021;16(6):401-6

Background and Methods

- Goal was to provide essential cognitive and technical skills to healthcare professionals returning to the workforce during the COVID-19 pandemic.
- Included 4 distance-based simulations, with asynchronous personalized feedback.
- The courses allowed the acquisition of skills for the
 - personal protection equipment,
 - high-flow nasal cannula,
 - endotracheal intubation, and
 - prone positioning

Findings

- The online platform allowed participants to:
 - Review the material,
 - Practice while recording the session, and
 - Upload the video
- The expert tutor remotely delivered asynchronous feedback
- Participants trained remotely until achieving course approval
- Remote-based simulation seems feasible to provide education, especially in rural areas

**Reviewer
comments**

Thoughtful use of available technology to build confidence and capacity in the workforce in unprecedented times. Applications for training and credentialing for clinicians in remote areas.

Despite the extreme chaos and the uncertainty of the pandemic, the article emphasizes the importance of feedback in learning and continue doing research to improve the quality of simulation learning.



Simulation in Healthcare (12)

Young TP, Estes M, Shank T, Smith DD, Kuntz HM. A Mixed Methods Study of Senior Medical Student Help Calling in an Individual, Acute Care Simulation Experience. *Simulation in Healthcare*. 2021;16(6):e109-15.

Findings

Background and Methods

- The ability to appropriately seek help is a key skill for senior medical students
- Used a simulation to examine help-calling behaviors and attitudes of senior medical students
- Collected quantitative data regarding help calling for 2 simulation cases and qualitative data using a survey
- Used a structured thematic analysis based on grounded theory methodology

- 134 students participated
- More students called for help in the second case (25% in first case; 82% in the second case, $P < 0.001$).
- Qualitative analysis identified 5 themes: (1) students seek to avoid shame, (2) prior sim experience may imprint this behavior, (3) students view help calling as an individual decision vs. team, (4) the complexity of the help calling process overestimated, and (5) the sim environment makes it difficult to observe natural behavior.
- Learners face training-based barriers related to shame and the desire for autonomy and simulation-based challenges related to assessment.

Reviewer comments

The topic is extremely relevant to the simulation with the students we have now and it influences how we can structure the processing of the qualitative data that we have to come up with valid results.

Broadly applicable understandings of med students' experiences and emotions relating to managing deteriorating patients were explored and reported. These are likely able to inform training for undergrad and postgrad health professionals (med, nursing, etc) for reducing hesitancy in calling for help



Simulation in Healthcare (12)

Hastings RH, Tapia VJ, Lurie B, Hallare JA, Dinescu AT, Gabriel RA, Delson N, Suresh PJ. Predicting Trainee Clinical Success From Performance at Simulated Endotracheal Intubation. Simulation in Healthcare. 2021;16(6):e123-8.

Background and Methods

- Prospective, observational study investigated whether simulated laryngoscopy performance can predict patient outcomes
- Enrolled 21 first-year anesthesiology & emergency medicine residents and medical students
- Performed simulated laryngoscopy and ETI
- Metrics included peak dental force, procedure duration, esophageal intubation, laryngeal view, and first-pass ETI success on the mannequins
- Trainee data from 203 patient ETIs were collected centered around the simulation test.

Findings

- The median first-pass success rate at patient ETI was 63%, and the rate of ETI problems was 16%
- Laryngoscopy peak dental force, first-pass ETI success, and duration on individual mannequins were significant predictors of patient ETI first-pass success.
- Performance metrics from simulated laryngoscopy predicted trainee outcomes during patient ETI.
- Mannequin laryngoscopy tests could identify trainees who would benefit from additional practice.

**Reviewer
comments**

Although it is only a prediction of chance of successful intubation, it is a positive move towards patient safety.

Well-constructed study with outcomes that can be used to facilitate targeted training for 'at risk' clinicians learning ETI. Provides a method for predicting poor performance and identifying pt safety risks.



Simulation in Healthcare (12)

Hayes CL, Piehl AM, Rooney DM. Meeting the New Joint Commission's Maternal Safety Requirements: A Quantitative Blood Loss Train-the-Trainer Program for Improved Process and Outcomes. Simulation in Healthcare. 2021;16(4):233-8.

Background and Methods

- To determine whether the train-the-trainer program for quantitative and cumulative assessment of maternal blood loss (QBL) program improved process and patient outcomes
- Program included at least 3 C-section hemorrhage sims
- Champions used the curriculum for staff training for 2 months
- Six months of preintervention and postintervention data were collected (N = 4413)
- Patient outcomes were evaluated by comparing blood transfusion rates and the number of morbid cases (≥ 4 packed red blood cell units).

Findings

- Medical records indicated that 99.8% of 2218 women received QBL posttraining compared with 16.6% of 2195 before training (P = 0.0001.)
- Transfusion rates increased from 54.47 to 69.25 units/1000 mothers.
- Drop in the rate of morbid cases (≥ 4 red blood cell units) from 2.13 to 0.48 cases/1000 mothers.
- The train-the-trainer QBL program associated with improved process/decreased morbidity when implemented with a hemorrhage safety bundle.

Reviewer comments

Reducing morbidity for postpartum hemorrhage is an important endeavor; I plan to share this with the OB groups that do simulation in our center.

Simulation Based Education is supported with this article in the practice setting and can impact patient outcomes.

Useful, especially for new nurses who struggle with estimating blood loss.



Simulation in Healthcare (12)

Won SK, Doughty CB, Young AL, Welch-Horan TB, Rus MC, Camp EA, Lemke DS. Rapid Cycle Deliberate Practice Improves Retention of Pediatric Resuscitation Skills Compared With Postsimulation Debriefing. *Simulation in Healthcare*. 2022;17(1):e20-7.

Background and Methods

- Limited studies compare skill retention between rapid cycle deliberate practice (RCDP) and post-simulation debriefing (PSD).
- Pediatric and emergency medicine residents participated in pediatric resuscitation sim, teams randomized to RCDP or PSD.
- Participants had a follow-up assessment of their team leader performance in a simulated cardiac arrest
- The primary outcome was time to defibrillation
- Secondary outcomes included overall team leader performance and time to chest compressions.

Findings

- 32 residents met the inclusion criteria (16 RCDP, 16 PSD)
- Participants in RCDP had more than 5 times the odds of achieving defibrillation (odds ratio = 5.57, 95% confidence interval = 1.13–27.52, $P = 0.04$).
- The RCDP group had a higher mean Resident Team Leader Evaluation score (0.54 ± 0.19) than the PSD group (0.34 ± 0.16 , $P < 0.001$).
- Concluded that RCDP may improve the retention of pediatric resuscitation skills compared with PSD.

Reviewer comments

Time for both learners and facilitators is tight, so it's important to optimize skills retention. This is a good example of learning retention study. It's also important to point out that post-simulation debriefing is not necessarily a gold standard. This advocates open-mindedness.

Since RCDP method significantly outperformed postsimulation debriefing in resident resuscitation skills by a large margin using robust research methodology, this research influences my practice in advising and mentoring faculty in designing effective sim experiences for learners. Following reading this article, I would encourage faculty to consider using the RCDP sim method for resuscitation skills over postsimulation debriefing.



Simulation in Healthcare (12)

Swinger N, Hocutt G, Medsker BH, Gray BW, Abulebda K. Rapid Cycle Deliberate Practice Versus Traditional Simulation for Training Extracorporeal Membrane Oxygenation Specialists in Circuit Air Emergency Management: A Randomized Trial. *Simulation in Healthcare*. 2022;17(1):e28-37.

Background and Methods

- Optimal methods for sim training for ECMO specialists are not currently established.
- A prospective, randomized, pre-post study to compare the impact of RCDP vs. traditional sim (TS) training on ECMO specialist performance during a simulated ECMO circuit emergency.
- Completed simulated arterial air emergency scenarios before, immediately after, and 3 months post-training.
- The primary outcome was the time to complete critical clinical actions.

Findings

- 24 ECMO specialists completed the study.
- Immediately after the training, the RCDP group had faster times:
 - to dissociate the patient from the ECMO (11-seconds RCDP vs. 16-seconds TS, $P = 0.03$)
 - to re-establish ECMO support (59-seconds RCDP vs. 82.5-seconds TS, $P = 0.01$).
- At 3 months, RCDP showed persistence in faster times to re-establish ECMO (114-seconds RCDP vs. 199-seconds TS, $P = 0.01$).

Reviewer comments

As RCDP sim method resulted in stat. sig. faster times immediately and 3-mo following the experience than traditional simulation, I may consider this method when mentoring faculty in sim development using ECMO or similar patient treatment in emergent situations.

This paper contributes to advancing our thinking in how we combine simulation and debriefing. RCDP provides a tighter mix, and for this complex team-based intervention, it demonstrates better time-based performance and retention as measured in a simulation scenario.



Simulation in Healthcare (12)

Long JA, Webster CS, Holliday T, Torrie J, Weller JM. Latent Safety Threats and Countermeasures in the Operating Theater: A National In Situ Simulation-Based Observational Study. *Simulation in Healthcare*. 2022;17(1):e38-44.

Background and Methods

- Explored latent safety threats (LSTs) identified during in situ multidisciplinary sims in operating theaters across New Zealand
- Included surgical sims lasting between 15 and 45 minutes delivered in 21 hospitals in New Zealand.
- After surgical in situ simulations, instructors used a template to record identified LSTs in a post-course report.
- We analyzed these reports using the contributory factors framework from the London Protocol to categorize LSTs.

Findings

- Of 103 post-course reports across 21 hospitals, 77 contained LSTs
- Common threats included
 - staff knowledge and skills in emergencies, team factors,
 - factors related to task or technology, and
 - work environment threats.
- Team factors were also commonly reported as protecting against adverse events creating a shared mental model.
- In situ simulation is an effective mechanism for identifying threats and prompting initiatives for improvement

**Reviewer
comments**

This study includes a wide breadth of participants, is replicable for most systems, and it moves further along clinical translation than most other studies.



Clinical Simulation in Nursing (11)



*Bradley, CS, Dreifuerst, C, Johnson, BK, & Loomis, A. More than a Meme: The Dunning-Kruger Effect as an Opportunity for Positive Change in Nursing Education. Clinical Simulation in Nursing. 2022; 66: 58-65.

Background and Methods

- Novices overestimate performance, experts underestimate
- Subjective assessment often used in SBE, not always with feedback/ reflection
- Review of the acknowledgement of DKE across disciplines

Findings

- Prevalence of DKE = indicator of need to improve:
 - Self-reflection
 - Metacognition
 - Opportunity for formative feedback

Provides in-depth argument for the need to recognize DKE and incorporate actions that lead to more accurate assessment.

**Reviewer
comments**



Clinical Simulation in Nursing (11)



White, P. & Champion, JD. Transitioning Undergraduate Maternal-Newborn and Pediatric Hospital Clinical Experience to Immersive Simulation-Based Education. *Clinical Simulation in Nursing*. 2021;61:10-3.

Background and Methods

- Restructuring in clinical and academic settings
- Limited experiences in maternal/ newborn & pediatric settings
- SBE with SPs / avatars
- 6 student cohorts
 - 3 pre-transition (n=282); 3 post- transition (n=358)

Findings

- Improved national scores post SBE
 - Maternal/ newborn (70.20 vs. 76.28)
 - Pediatric (72.39 vs. 76.28)
- Pre/post cohort means
 - 4.9041 to 7.2637; pediatric range 3.2887 to 5.5949 (p<.001)
- preliminary evidence - replacement of hospital clinical experiences with SBE is effective.

Sim replacing maternal newborn clinical experiences is necessary - growing need / lack of clinical placements / faculty shortages.

**Reviewer
comments**

*Supports previous research re the role of sim in
developing clinical competencies*

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A STANDARD OF EXCELLENCE**



Clinical Simulation in Nursing (11)



*Leighton K. Holistic Patient Assessment in Simulated Clinical Experiences. *Clinical Simulation in Nursing*. 2021;60:69-73.

Background and Methods

- Nursing = holistic aspects of care (psychosocial, cultural, spiritual, developmental)
- Opportunities for holistic care in SBE lacking
- Insufficient to meet students' learning

Findings

- 21 recommended low-cost inclusions for SBE
- Psychosocial
- Spiritual
- Developmental
- Cultural
 - SP and family responses
 - Props
 - Moulage

Presents details on holistic assessment during SBE to prepare students for professional practice.

**Reviewer
comments**

provides applicable communication and moulage elements to enhance simulations by addressing essential components of nursing care



Clinical Simulation in Nursing (11)



Badowski D, Wells-Beede E. State of Prebriefing and Debriefing in Virtual Simulation. Clinical Simulation in Nursing. 2022;62:42-51.

Background and Methods

- Pandemic +++ virtual sim
- Facilitation and debriefing practices
- Quantitative exploratory research design to explore nurse educators' use of the INACSL Standards of Best Practice: Simulation© (+glossary for definitions)
- Researcher developed survey (rv by 4 experts)
- Snowball sampling via social media

Findings

- Majority of the 129 participants - Certified Healthcare Simulation Educators (CHSE) (41.2%) or Certified Nurse Educators
- 36% not using VS prior to COVID
- Variety of prebriefing and debriefing approaches & % of time
- Offers new perspectives to shape revisions to standards

How to apply HSSOBP to variety of virtual SBEs

Helps to address the need for standardized, best practice for (growing) virtual debriefing





Clinical Simulation in Nursing (11)



*McDermott DS, Ludlow J. A Prebriefing Guide for Online, Virtual, or Distant Simulation Experiences. Clinical Simulation in Nursing. 2022;67:1-5.

Background and Methods

- Sudden switch / continued use of online, virtual, and distant simulation modalities
- Little research on how to specifically prebrief these modalities
- Best practice standards used to develop step-by-step guide (synchronous & asynchronous)
- Reduce facilitator anxiety
- Ensure psychological safety in virtual environment

Findings

- Adaptations to current standards
- Applicable to: synchronous, live, online case studies, debriefings and other audio/video assisted conferencing;
- asynchronous environments such as commercial platforms, simulation videos, and discussion boards

Useful particularly for less experienced simulation educators.

Reviewer comments

online/virtual/distant sim modalities more prevalent; little guidance for how prebriefing might need to be different; provides an important revision to the Standards of Best Practice



Clinical Simulation in Nursing (11)



Andersen P, Guinea S, Reid-Searl K, Levett-Jones T. Designing Tag Team Patient Safety Simulation: An instructional design approach. Clinical Simulation in Nursing. 2021;59:1-9.

Background and Methods

- TTPSS draws on cognitive, social, and constructivist theoretical perspectives; based on Forum Theatre
- Address the challenges with large numbers of learners & inform teaching practice
- group-based simulation approach to enhance skills and knowledge, patient safety, with potential to enhance resilience and capacity to speak up
- Commentary paper

A great concept - well described

The focus on communication and critical thinking skills is an innovative approach to team learning in simulation. can be used for simple to complex patient encounters. Potential for interprofessional teams to learn from each other

Findings

Details:

- Planning and design, setup, briefing and intermission and debriefing.
- Principles of learning and instruction to determine the activities, resource materials and processes necessary for implementation and evaluation.

**Reviewer
comments**



Clinical Simulation in Nursing (11)



Oudshoorn A, Sinclair B, Baruth C. Mental Health Stigma Reduction Through Simulated Professional Practice: A Mixed Methods Study. Clinical Simulation in Nursing. 2021;59:10-6.

Background and Methods

- stigma associated with mental illness is important to address when teaching nursing students
- in-person clinical MH experiences reduce stigma, no parallel studies on simulated clinical experiences
- Comparison of mental health theory course + 5 SBEs with theory only
- Pre and post attitudes assessed using
 - Attitude towards Mental Illness Questionnaire
 - Perceived Stigma Questionnaire
 - Qualitative interviews.

Findings

- Statistically significant lower levels of mental illness stigma post test scores for mental health simulations group
- Themes:
 - Safety in Simulation; Breaking Boundaries; and Open-Minded Students.

Reviewer comments

High priority topic. MH clinical placements limited. Research to demonstrate impact = increased options in teaching strategies.



Clinical Simulation in Nursing (11)



Chike-Harris KE, LaManna JB, Eckhoff DO, Buchanan L, McCumber S, Corcoran KJ, et al. The Missing Link: The iSOAP Model for Incorporating Telehealth Within Simulations. Clinical Simulation in Nursing. 2021;59:39-51.

Background and Methods

- Telehealth became mainstream during COVID-19
- development of telehealth simulation experiences to prepare APRN students
- *iSOAP model (introduction, subjective objective assessment plan) incorporated into sim scenarios*
- *Specific focus on major health issues*

Findings

- Asynchronous
 - information via RPM
- Synchronous
 - tips for using household items during assessments
- Any sim scenario can be modified to include telehealth

Provides educators a structure and framework for supporting students developing the requisite skills for telehealth practices.

**Reviewer
comments**



Clinical Simulation in Nursing (11)



***V Ross JG, Dunker KS, Duprey MD, Parson T, Bartell D, Humphries L. The Use of Simulation for Clinical Nursing Faculty Orientation: A Multisite Study. Clinical Simulation in Nursing. 2022;63:23-30**

Background and Methods

- Aim: explore the effect of simulation training on clinical nursing instructors' anxiety and self-perceived competence related to clinical teaching; identify perceptions of sim use.
- *Multi-site* quasi-experimental, pretest/posttest, MM
- Control: traditional orientation
- Experimental: six Quality and Safety Education for Nurses (QSEN)-based simulation scenarios.
- 3 tools - State-Trait Anxiety Inventory; Clinical Nursing Faculty Competence Inventory ; Satisfaction and Self-Confidence in Learning Scale

Findings

- Control = 28; Experimental = 32
- Stat sig improvements pre/post (both groups)
- Themes: Active Learning; Collaboration; Application.
- variability in control group orientation practices
- First study to examine and quantify/ describe

I never thought about sim being a way to orient adjunct/clinical faculty. This is a great idea.

**Reviewer
comments**

Even though I teach in the graduate program; this is highly applicable; a great multi-site project- interesting!



Clinical Simulation in Nursing (11)



Fielding N, Latour JM, Kelsey J. Experiences of Paediatric End-of-Life Simulation in Undergraduate Children's Nursing Students: A Qualitative Study. Clinical Simulation in Nursing. 2022;65:18-25.



Background and Methods

- End-of-life-care (EOLC) simulation is a new concept preparing student nurses for clinical practice.
- explore the experiences of undergraduate children's nursing students participating in simulation of the imminent death of a child
- 39 third-year children's nursing students
 - open-ended questionnaire
- 5 students
 - focus group

Findings

Themes:

- Learning how to communicate in an end-of-life situation
- Emotional impact of end-of-life simulation
- Value of simulation for teaching end-of-life care
- Preparation for practice

**Reviewer
comments**

Would love to see this be done at the graduate level

Very important topic in simulation especially in light of novice clinicians learning how to deal with devastating news



Clinical Simulation in Nursing (11)



*Franklin AE. **Clinical FACTS: Simulation and Clinical Faculty Time Study.** Clinical Simulation in Nursing. 2022;65:49-56.

Background and Methods

- No industry-wide standard for nursing faculty workload.
- Comparison of work time among simulation and clinical faculty.
- 17 faculty from 5 programs completed 50 daily time logs
- Six taught in clinical settings, six in simulation, five alternated between simulation and clinical teaching.

Findings

- 902 unique daily time logs.
- Mean teaching hours per day were similar.
- Simulation faculty documented more time on class preparation, in meetings, and on scholarship.

**Reviewer
comments**

This research is long overdue, elated there is now research on the topic.



Advances in Simulation (8)

Behrens CC, Driessen EW, Dolmans DH, Gormley GJ. 'A roller coaster of emotions': a phenomenological study on medical students lived experiences of emotions in complex simulation. *Advances in Simulation*. 2021 Dec;6(1):1-9.

Background and Methods

Simulation-based education can induce intense learner emotions. The interplay between emotions and learning is less well understood. This study aimed to understand learners' lived emotional experiences in complex simulation and the perceived impact on learning. Eight final-year medical students participated in the study. Wearing video-glasses, participants took part in a ward-based simulation. Video-footage was used to elicitate exploratory interviews and analysed using Template Analysis reflexively.

Reviewer comments

Findings

Complex simulation can evoke intense emotions in students. If students experienced a positive progression, they reported positive emotions and felt competent which was perceived to have a positive impact on learning. If students experienced failure, they reported strong negative emotions which made them question about their future performance and was perceived as negative for learning.



Advances in Simulation (8)

Kainth R. Dynamic Plus-Delta: an agile debriefing approach centred around variable participant, faculty and contextual factors. *Advances in Simulation*. 2021 Dec;6(1):1-9.

Background and Approach

This paper describes the rationale for choosing an initial debriefing model which evolved overtime to consider multiple contextual factors: demands of the clinical environment, the diverse participants and their learning needs, the variable experience of faculty, and the dynamic nature of available debriefing time. The new approach, termed here as the Dynamic Plus-Delta model, blends the traditional Plus-Delta approach with specific dynamic elements which considers the unique demands of rapidly training large number of staff.

**Reviewer
comments**

Very user friendly/easy to understand tool---like how it expanded on Plus-Delta. This can be used by educators in a variety of setting (e.g. College, hospital, community agencies).



Advances in Simulation (8)

Lopez Benítez R, Reyes del Castillo T, Benz D, Fechner C, Szabo L, Kara L, Monnard E, Kostrzewa M, Roos JE. Percutaneous transhepatic biliary puncture simulator: a cord network prototype. *Advances in Simulation*. 2021 Dec;6(1):1-7.

Background and Methods

A percutaneous transhepatic biliary puncture simulator that can be used without radiation exposure and that reflects the conventional anatomy of the biliary ducts and its vicinity structures.

An anatomically based model of the biliary tree was developed using a cord network fixed to a wooden frame. The simulator was tested with 60 radiology residents to evaluate the confidence and skills transferability of the training model.

Reviewer comments

This article used simulation is a tool to improve students' confidence and competence, which is equally important as procedural skills

Findings

After receiving an introduction of the system and 5 min of training under tutor surveillance, all participants were able to troll a cord of the biliary simulator by themselves in less than 4 min.

This simulator can be an effective tool to improve a trainee's confidence and competence while achieving procedural and non-procedural interventional radiology skills related to the liver.

Creative strategy for hands-on learning. Not my area of expertise--- however valuable information in the design, implementation, and evaluation (quantitatively and qualitatively).



Advances in Simulation (8)

Gent D, Kainth R. Simulation-based procedure training (SBPT) in rarely performed procedures: a blueprint for theory-informed design considerations. *Advances in Simulation*. 2022 Dec;7(1):1-2.

Background and Approach

Simulation-based procedure training is now integrated within health professions education with literature demonstrating increased performance and translational patient-level outcomes. The focus of published work has been centered around description of such procedural training and the creation of realistic part-task models. There has been little attention with regards to design consideration, specifically around how simulation and educational theory should directly inform programme creation. Using a case-based approach in cardiology as an example, we present a blueprint for theory-informed simulation-based procedure training linking learning needs analysis and defining suitable objectives to matched fidelity. We press the importance of understanding how to implement and utilise task competence benchmarking in practice, and the role of feedback and debriefing in cycles of repeated practice. We conclude with evaluation and argue why this should be considered part of the initial design process rather than an after-thought following education delivery.

**Reviewer
comments**

This paper equips the educator to tailor procedure training to the learner.

Advances in Simulation (8)

Abildgren L, Lebahn-Hadidi M, Mogensen CB, Toft P, Nielsen AB, Frandsen TF, Steffensen SV, Hounsgaard L. The effectiveness of improving healthcare teams' human factor skills using simulation-based training: a systematic review. *Advances in Simulation*. 2022 Dec;7(1):1-8.

Background and Methods

Research on human factor training has been limited to marginal and acute care scenarios and often to validate instruments. This systematic review aimed to investigate the effectiveness of simulation-based training in improving in-hospital qualified healthcare teams' human factor skills.

**Reviewer
comments**

Findings

19,767 studies, 72 included studies (2004-2021) covered research from 7 medical specialties. Content analysis identified evidence for the effectiveness & 4 themes: (1) Training human factor skills in qualified healthcare teams; (2) assessment of human factor skills; (3) combined teaching methods, and (4) retention and transfer of human factor skills.

Fantastic highly influential top evidence level systematic review supporting healthcare simulation.

The simulation community tends to focus on skills and procedures in isolation of the human factors. This article is bringing human factors to the forefront for all of us to consider as we design and plan SBEs.



Advances in Simulation (8)

Alinier G, Oriot D. Simulation-based education: deceiving learners with good intent. *Advances in Simulation*. 2022 Dec;7(1):1-3.

Background and Approach

Although there is generally an emphasis on making everything as realistic or "high-fidelity" as possible, it is often futile and this is where the art of simulation comes into play with an element of modulation of realism linked to the intended learning objectives. Although it inevitably carries a negative connotation, some form of "deception" is more commonly used than one may think for the benefit of learners during SBE. This article will discuss how aspects of SBE activities are often manipulated, modified, or hidden from learners to facilitate the learning experience and present a simulation fidelity model encompassing the environmental, patient, semantical, and phenomenal dimensions.

Reviewer comments

Interesting philosophical discussion on deception within simulation to reproduce high fidelity.

Very helpful description of deception in SBE to inform educators in the appropriate/unavoidable use vs inappropriate.

These authors are making a case for rethinking the how we define "deception" within SBE. Taking a fresh look at how we define and use the term is important for all of us.



Advances in Simulation (8)

Purdy E, Borchert L, El-Bitar A, Isaacson W, Bills L, Brazil V. Taking simulation out of its “safe container”—exploring the bidirectional impacts of psychological safety and simulation in an emergency department. *Advances in Simulation*. 2022 Dec;7(1):1-9.

Background and Methods

Simulation facilitators strive to ensure the psychological safety of participants during simulation events, but how does sim psych safety influence clinical practice and vice versa?

Narrative surveys and semi-structured interviews: (1) how does real-world psychological safety impact the simulation experience and (2) how the simulation experience influences real-world psychological safety.

Findings

74 narrative responses, 19 interviews. Simulation experience was both influenced by and impacted psychological safety experienced at the individual, team, and organizational levels of ED practice. Bi-directionality between simulation and clinical practice.

Reviewer comments

Bidirectional impact of psychological safety exists between the simulation and workplace environments which should inform simulation event objectives, design, delivery, and debriefing.

This article is one of a very few that has done empirical research on psychological safety of healthcare teams. Their findings are significant, they offer a representative cognitive model for their findings and many of their points can translate to academic IP education.



Advances in Simulation (8)

*Mosher CJ, Morton A, Palaganas JC. Perspectives of engagement in distance debriefings. *Advances in Simulation*. 2021 Dec;6(1):1-3.

Background and Methods

COVID-19 propelled remote simulation and online distance debriefings. In the online setting, educators face challenges to learner engagement that differ considerably from in-person debriefing.

Thematic analysis of 14 semi-structured interviews with participants who had experience with virtual debriefing as an educator or as a learner, exploring experiences and perceptions understand the factors that influence engagement in online distance debriefing.

Distance learning is an important concept to come out of Covid-19 and likely into the future.

With current global challenges regarding simulation implementation, this study informs the design and facilitation of online debriefings to help provide educators with guidance and innovative solutions to best engage their learners.

Findings

10 themes that support the Community of Inquiry (CoI) theoretical framework and provided additional considerations related to internal and external factors of engagement, including the influence of the simulation, false engagement, and self-presence.

Findings can inform the design and facilitation of online debriefings to help provide educators with guidance and innovative solutions to best engage their learners in the online environment.

Reviewer comments

Distance debriefing presents unique challenges that call for new guidelines not previously addressed in the Community of Inquiry (CoI) framework which can inform the future design and facilitation of online simulation offerings.

International Journal of Healthcare Simulation (1)

Knickle K, Weir K, McNaughton N. Authoring and othering: examining bias in scenario design. International Journal of Healthcare Simulation. 2021 Sep 21;1(1):45-8.



Findings

Background

- In this essay, the authors assert that simulation educators have an ethical and social responsibility to ensure that SP scenarios are educationally sound and clinically representative.
- Engaging critical perspectives, this submission addresses the potential impact of reproducing healthcare inequities through poor scenario design
- Considerations are outlined for distinguishing and ameliorating essentializing and stigmatizing representations.

- Including people with lived experience in the scenario development process and the thoughtful, fair recruitment, training and engagement of SPs is increasingly central to a fair and equitable authoring process.
- Thoughtful consideration and commitment to the objectives of each scenario and its live portrayal assists in mitigating often careless or assumptive details that can limit or interrupt the student's analysis and approach.
- SP educators' engagement in scenario development as authors, reviewers or editors requires a nuanced appreciation for unintended educational, social and cultural effects.
- Learning objectives that determine whether diversity is a relevant scenario component, normalizing diversity in clinical representations when diversity is not the focus and partnering with community members with lived experience all work hand in hand to ensure we avoid tokenism and recreation of stereotypes

Reviewer comments

This paper gives meaningful strategies for examining bias when designing simulations.

Reducing stigma/bias in sim design is key to safe care for vulnerable populations

Common themes

- Professional Development
- Debriefing
- Responses to Covid
- EDI
- Bias
- Clinical applications
- Improved human factors
- Reducing adverse events
- Research
- SPs
- Safety
- Adverse events
- Virtual simulation
- Online learning
- Estimating performance
- Education

Thanks to the reviewers!!



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- Leonora Valdez
- LisaMarie Wands
- Penni Watts
- Melissa Wild
- Barbara Wilson-Keates*

Where to from here?

- Value to, and input from, members
- Articles from previous years included in SSH *Simulation Scholarship Knowledge Map*
 - <https://www.ssih.org/SSH-Resources/Knowledge-Map>
- SSH webpage [Articles of Influence \(ssih.org\)](https://www.ssih.org)
- Interested in being a reviewer?

**Call for service
(April 2023)**

QUESTIONS?

Thank You

