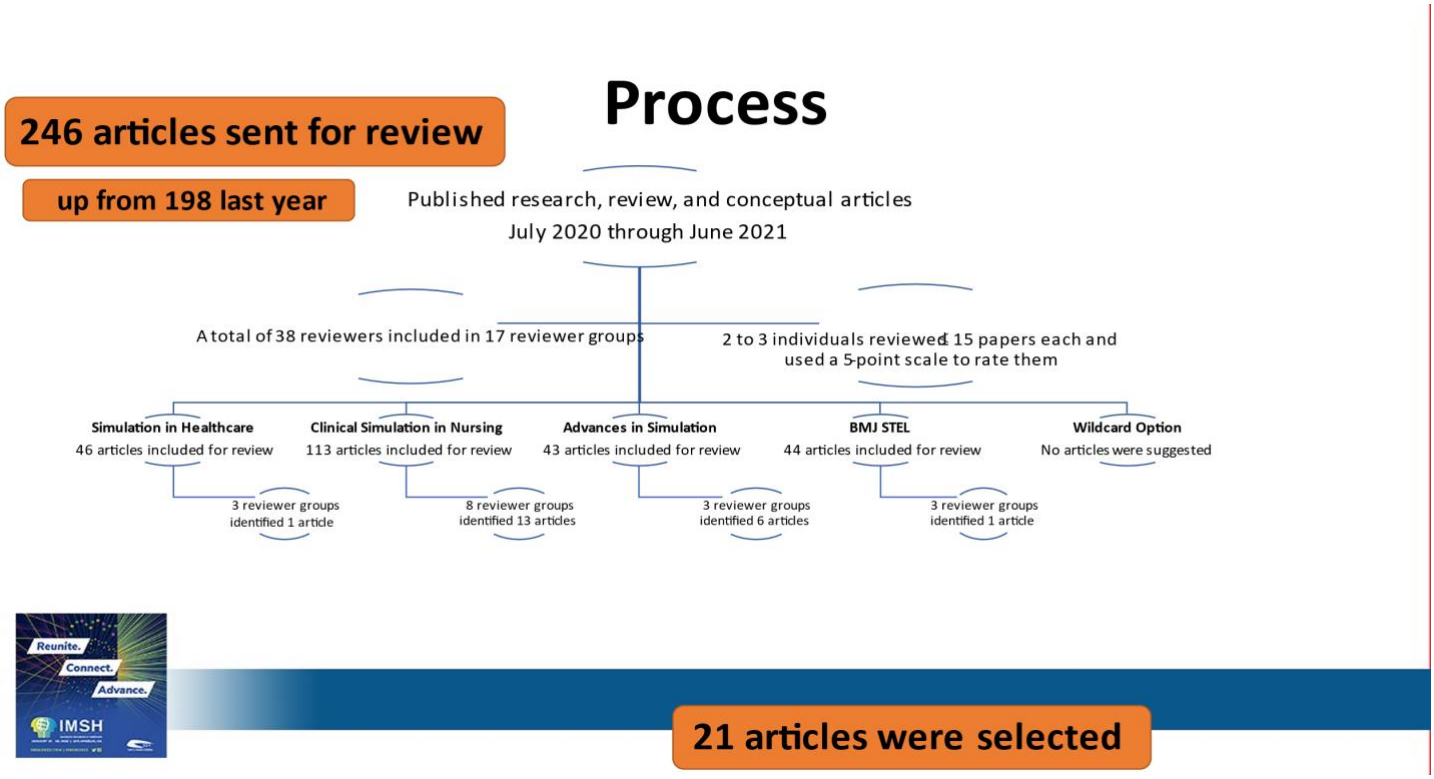
;Articles of Influence (July 2020 – June 2021)



Simulation in Healthcare (1)

Improving the Quality of Evaluation Data in Simulation-Based Healthcare Improvement Projects: A Practitioner's Guide to Choosing and Using Published Measurement Tools 2020;15:341. https://doi.org/10.1097/sih.0000000000000442

Santomauro, C. M.; Hill, A.; McCurdie, T.; McGlashan, H. L.

Simulation is increasingly being used in healthcare improvement projects. The aims of such projects can be extremely diverse. Accordingly, the outcomes or participant attributes that need to be measured can vary dramatically from project-to-project and may include a wide range of nontechnical skills, technical skills, and psychological constructs. Consequently, there is a growing need for simulation practitioners to be able to identify suitable measurement tools and incorporate them into their work. This article provides a practical introduction and guide to the key considerations for practitioners when selecting and using such tools. It also offers a substantial selection of example tools, both to illustrate the key considerations in relation to choosing a measure (including reliability and validity) and to serve as a convenient resource for those planning a study. By making well-informed choices, practitioners can improve the quality of the data they collect, and the likelihood that their projects will succeed.

- This article is key reading for anyone doing research with measurement tools. I found myself referencing this article often for my own research.

- Proper data collection and use of appropriate simulation evaluations is important information to understand and share in a concise document.

Clinical Simulation in Nursing (13)

The Development of a 2-Credit Simulated Specialty Clinical Immersion for 15-Month Senior-Level BSN Students

Kulju L.A.

After experiencing challenges securing specialty clinical experiences for senior BSN students enrolled in a 15-month program, faculty created an 8-week, 2-credit simulated specialty clinical immersion course. Using Tanner's Model of Clinical Judgment, the INACSL Standards of Best Practice: Simulation℠ and core competencies essential to practice, faculty created eight specialty simulations. Students were assigned preparation and then participated in prebriefing, simulation, debriefing, and wrote a reflection. Students had multiple opportunities to experience the role of the nurse. A “clinical pause” ensured a safe environment. After five cohorts, course evaluations continue to be positive. Students noted that the prebriefing activities were the most valuable part of their learning. © 2020 International Nursing Association for Clinical Simulation and Learning

- This article not only demonstrates the importance of simulation, but futher, the concept of a more immersive clincial experience for BSN students, providing opportunities they may not ecnounter in the real clinical setting.

- This method not only supports the impact of simulation on application, but highlights the importance of the pre-breifing activities and aligning simulation development with the currriculum.

Using International Nursing Association for Clinical Simulation and Learning Standards to Evaluate the Rigor of High-Fidelity Simulation Learning Experiences

Grota P.G., O'Neal C.

Background: Ensuring rigorous simulation-based learning experiences (SLEs) is an essential step before substituting two or more clinical hours with one hour of simulation. Methods: SLE evaluation rubric was developed based on international standards to evaluate SLE quality and to promote standardization for 2:1 substitution. Eight SLEs across courses were evaluated using the rubric in blinded peer review. Results: Reliability between reviewers reached 100% agreement before approving for 2:1 substitution. (Cohen's k = 1.0) Conclusions: The rubric is an effective way to standardize plans for high quality SLE. Further studies of validity and reliability need to be conducted. © 2020

- Simulation has been proven as a valid supplement and/or substitute for clinical experiences. This article strenthens the claim and provides additioal insight regarding the issue.

- Assessment of simulations is necesarry to ensure the adherence to standards and meeting objectives. Tools for assessment are a need within simulation.

Hospital Nurses' Simulation-Based Education Regarding Patient Safety: A Scoping Review

Cant R.P., Cooper S.J., Lam L.L.

Background: Little is known about the clinical impact of simulation-based education (SBE) for hospital nurses. Method: Scoping review methodology was used to examine the impact of nurse SBE programs within six patient safety domains. Results: Twenty-six articles described over 20 education topics. Based on Kirkpatrick's four levels of evaluation, programs prioritized superficial levels of evaluation: Level 1—Reaction, Level 2—Learning. Only seven studies measured Level 3—Behavior change (nurses' performance) or Level 4—Results (impact on patient care). Conclusion(s): Nurses' CPD programs should include both short-term evaluations and longitudinal measures to detect practice improvements that may advance patient safety. © 2019 International Nursing Association for Clinical Simulation and Learning

- Very detailed review of the simulation literature, which can provide a basis for future studies. Sadly, only 6 of the 26 studies reported behavior outcomes and patient impacts. I will keep this in mind for future studies.

- Education in hospital systems needs redesigned to incoporate simualtion education at frequesnt itnervals to not only address issues but provide consistent guidance and practice to change behavior/care being delivered at the bedside. Its not just orientation and yearly competency, it needs to be frequent SBE.

Prebriefing: A Historical Perspective and Evolution of a Model and Strategy (Know: Do: Teach)

McDermott D.S.

Background: Prebriefing research and evidence has been emerging over the past ten years; however, controversy has existed on how much information to provide to learners and on the best strategies to prepare learners. An adult learning and Benner's Novice to Expert Framework are used to support this work. Method: The purpose of this article is to discuss the historical aspects of prebriefing research and study from its infancy to the current body of work. A prebriefing model of preparing students for simulation is described, as well as its development through simulation literature, research, and experience in facilitation practice. Results: A three-phase prebriefing model was developed that includes planning, briefing, and facilitating. An active engaged preparation strategy called Know: Do: Teach is provided, as well as the background for how it was developed according to literature surveillance, research, and

simulation practice and experience. Conclusion: Prebriefing strategies may be one way to transition students from knowledge to the clinical thinking required for nursing practice. This model shows promise for the development of engaged student learning before simulation, as well as a guide for novice simulation educators to develop prebriefing activities. © 2020 International Nursing Association for Clinical Simulation and Learning

- This article brings forward areas in prebriefing structure that need to have more focus and research. It will help to shape how we atardardize and improve the process moving forward in simulation which is key to success in simulation education.

- The article posits that there is controversy knowing what and how miuch to say during a prebrief and it does a great job of suggesting what should be said and providing support.

Learning Outcomes of the Observer Role in Nursing Simulation: A Scoping Review

Rogers B., Baker K.A., Franklin A.E.

Background: Simulation-based learning experiences are utilized more frequently to support nursing education. Some programs use observational, rather than active, role assignments to meet the growing demand for simulation-based learning experiences. Despite support for observer learning, educators disagree about whether observers' learning outcomes are similar to those who are active participants. Method: The scoping review strategy established by the Joanna Briggs Institute was followed to investigate what learning outcomes have been measured in nurses serving in observer roles in simulation. Results: Twenty-eight studies matched the search strategy and inclusion criteria. Eight categories of observer learning outcomes were identified: knowledge, clinical skills, clinical judgment, teamwork/collaboration, confidence, critical thinking, insight, and conceptual thinking. Conclusion: The literature suggests that the observer role can lead to measurable learning outcomes. © 2020

- This abstract addresses an important role that is utilized in simulation.
- Interesting topic, It will be great to know what learning objectives are for the observers.

Using Simulation to Provide Culturally Competent Care to Transgender and Gender Nonconforming Patients

Waxman K.T., Rowniak S., Donovan J.B.L., Selix N.

Simulation is widely recognized as an effective innovative teaching methodology in health care. Using simulation allows educators to provide learners with safe, nonthreatening environments where a standardized high-quality clinical experience is assured. Transgender and gender nonconforming individuals experience discrimination, social isolation, stigmatization, and minority stress. Providing nurse educators with the skills to educate students and staff in caring for this population utilizing cultural competency skills in a simulated environment improves patient outcomes. © 2020 International Nursing Association for Clinical Simulation and Learning

- Cultural competence is now a priority in academia. Nurse educators need to rapidly incorporate best practices on cultural competence into their curriculums.

- This article is important to my profession as it promotes cultural humility and addresses the issue of the overlooked sections of simulation. Often there is limited exposure to valuable scenarios that include transgender or persons who have identified differently. It is often added without much thought of substance in which learning about these persons in certain situations would be more beneficial.

Developing a Trauma-Informed Psychologically Safe Debriefing Framework for Emotionally Stressful Simulation Events

Harder N., Lemoine J., Chernomas W., Osachuk T.

As simulation experiences evolve to become more realistic and include events that extend beyond clinical skills performance, the debriefing models that are used also must evolve. There is much discussion regarding the psychological safety of participants during simulation and the debriefing period; however, the discussions generally revolve around the tone and the environment and less on the actual debriefing process. The majority of debriefing models in simulation is based on education frameworks with the intent to address learning objectives and learning outcome stemming from the simulation. They are not explicitly intended to process the feelings and emotions experienced during emotionally or psychologically stressful simulation events. Based on an extensive scoping review, this article reports on the development of a Trauma-informed Psychologically Safe debriefing framework that has been piloted with undergraduate nursing students who experience expected patient death in a simulation experience. © 2020

- First death experiences have proven value to healthcare students. Incorpoating valid and reilable debriefing methods will enhance clincial education to learners on this topic.

- Simulation is an intense form of learning and sometimes the safety of the learners flies under the radar and the focus is more on meeting objectives rather than on how the participants feel about the experience.

“Doctor, please”: Educating Nurses to Speak Up With Interactive Digital Simulation Tablets

Bracq M.-S., Michinov E., Duff M.L., Arnaldi B., Gouranton V., Jannin P.

Background: Courses are developed to train on open communication. This study focuses on speaking-up for scrub nurses. Method: The scenario is implemented on digital tablets, with vignettes involving problematic behaviours of a colleague with the same or different status. The nurses (N = 33) were asked whether they would point out the error, whether they would be embarrassed, and how they would do it. Results: Nurses expressed greater embarrassment with a colleague of a different status. This is confirmed by their phrasing and the strategies they reported when speaking to the surgeon. Conclusion: The scenario was well accepted and could be used to train other health professionals. © 2021

- The topic of logical deference, or tendency to defer final judgement to a person who is perceived to more qualified is one that nurses need to be educated on.

- Communication is often the thing that patients wish their healthcare team would improve upon, there is not enough interdisciplinary training involved in the professional training and development of healthcare team members. Interdisciplinary and interprofessional activities are difficult to schedule due to competing schedules between professions. Effective communication is critical in the care of patients. This activity seems like a great way to promote communication. I would be interested to try out this activity.

Effect of Repeating Simulation Scenarios on Student Knowledge, Performance, Satisfaction and Self-Confidence

Zulkosky K., Minchhoff D., Dommel L., Price A., Handzlik B.M.

Background: Nursing students must master a variety of skills and learn to make sound clinical decisions to safely and effectively care for patients in a variety of settings. Methods: We examined if there was a difference in knowledge, clinical performance, satisfaction and self-confidence in learning when students repeated a simulation scenario after observing the scenario versus being an active participant. Results: Our findings indicated that nursing students (n = 159) exhibited enhanced clinical knowledge when repeating a scenario. Similarly, clinical performance among the active participants improved substantially from the first to the second run of the scenario. The degree of improvement was significantly higher for those who remained in the same role relative to those who switched roles. Finally, students expressed high levels of satisfaction with the repeating scenarios, regardless of whether they remained in the same role or shifted between being an observer and active participant. Conclusions: Students should have the opportunity to repeat scenarios, ideally remaining in the same active participant role, because it affords them the opportunity to improve their own performance. © 2021

- This adds credence to deliberate practice and best practice standards!

- the finding of this study are important for mastering of skills and knowledge for the hands-on learners and provides a good support for the already established approache of repeted shorter targeted simulations for high quality learning

Results of a Nationwide Descriptive Survey on Simulation Center Operations

Tranel G.E., Johanneck M.D., Thompson R.J., Campbell K.K.

Background: The adoption of simulation-based education is growing in the health care sector. There is a paucity of cataloged descriptive data on simulation center (SC) operations and demographics. This study aims to build on previous efforts by systematically collecting, analyzing, and disseminating US-based SCs' descriptive data focused on center operations and demographics. Method: A total of 424 SCs were identified within the United States and sent a 29-question online survey. Results: A total of 159 SCs responded from 38 states. Data were organized in themes of demographics, staffing, governance, funding, and usage. Conclusions: This study found (1) simulation is broadly adopted throughout many health care professions; (2)

center sizes vary, but trends exist based on location, with centers located in hospitals being the smallest; (3) staffing numbers and roles vary, but technicians are the most common; (4) funding sources vary greatly, but most centers are not profitable; and (5) just less than half of centers had a governing body. © 2021

- This article provides necessary information on the reality of simulation center operations, fiscal capabilities in this present state, and can be instrumental in providing support to align current practice to best practice by determining the gaps and needs of simulation practitioners.

- Study reveals need for more extensive systematic approach to establish consistent definitions of simulation center use, workload and capacity to better collect appropriate data. Appropriate data is necessary to establish standards.

Developing a Smartphone App With Augmented Reality to Support Virtual Learning of Nursing Students on Heart Failure

Herbert V.M., Perry R.J., LeBlanc C.A., Haase K.N., Corey R.R., Giudice N.A., Howell C.

Background: The purpose of this study was to develop an Augmented Reality (AR) app on heart failure for remote training of nursing students and compare it against recorded video lecture. We conducted a quasi-experimental study using pretest-posttest design with junior nursing students. Methods: The experimental group used the self-paced app; the control group viewed the same content using pre-recorded video lecture. Results: There were no significant differences in learning, although more students indicated that they preferred the AR app. Conclusion: As a stand-alone teaching method, AR apps may perform as well as video lectures and may encourage student engagement. © 2021

- This study provides valuable information on future possibilities of content delivery and student engagement using an novel method of simulation.

- Reinforces findings from previous studies that simulation and technology are effective educational tools for learning and learner engagement, they will not replace faculty-led instruction.

Immersive Virtual Reality as an International Collaborative Space for Innovative Simulation Design

D'Errico M.

Immersive virtual reality (IVR) is an increasingly utilized modality for nursing simulation. In addition to its role as a simulation setting, IVR has utility as a virtual meeting space in which simulation design teams can collaborate in real time, all while interacting within the simulation environment itself. This article describes how an international simulation design team utilized IVR to develop, implement, and iterate a simulation scenario created for prelicensure nursing

students. The IVR setting allowed the team to efficiently and effectively create and improve on this scenario before successfully delivering it to nursing students. © 2021

- This article introduced the innovation of immersive virtual simulation and opened the door to possibilities of using this technology in future nursing education.

- In our increasingly global, high-tech, post pandemic environment, finding novel ways to collaborate and maximize opportunities for disseminating best practice, is important for many applications in healthcare.

Clinical Simulation to Evaluate Students' Intraprofessional Telehealth Skills Between Multiple University Campuses

Wesemann D., Posey K., Wilson C.

Telehealth is a vital skill for providing access to care, cost-effective quality care, and intraprofessional collaboration. As more schools of nursing move toward online education, the concern is how to effectively train nurse practitioner students with telehealth knowledge and skills. Simulation can prepare students to develop these needed skills and to use telehealth effectively through innovative experiential learning opportunities. To overcome these educational challenges an intraprofessional pilot telehealth simulation was implemented to evaluate nurse practitioner students' knowledge, skills, and clinical abilities between universities. © 2021

- This study was innovative as it captured how simulation can be used to safely educate students to use telehealth effectively and safely during the pandemic and after the pandemic.

- Telehealth is an important skill to address increasing access to care.

A qualitative study using hybrid simulation to explore the impacts of human factors e-learning on behaviour change

Carter, H.; Hanks, S.; Gale, T.

BACKGROUND: There is an international drive to increase human factors training in undergraduate medical curricula through various educational platforms. E-learning can be effective at teaching technical skills but there is limited research exploring the benefits of e-learning in human factors training. This study aimed to utilise hybrid simulation to investigate the impact of a human factors focused e-learning package for intravenous cannulation on safety behaviours. METHODS: Video-reflexive ethnography (VRE) techniques and interviews were used to explore human factor-related behaviour change in hybrid simulation scenarios, before and after e-learning modular training. Ten final-year medical students were recruited for the

study. Content analysis of VRE data from hybrid simulation scenarios identified which behaviours had changed; thematic analysis of semi-structured interviews uncovered why. RESULTS: Results demonstrate improvement in safety behaviours in the domains of physical-, cognitive- and macro-ergonomics, suggesting safer cannulation practice following training. Online videos with interactive activities were reported as the major pedagogical driver for change. The impact of the e-learning was identified across four themes: environment, person, policy-related tasks, and preparedness for practise. Reported intention to change practise and altered behaviour in the workplace supports the conclusion that this training prepares students for practise by facilitating them to incorporate human factors principles in their clinical work. CONCLUSION: E-learning is a valuable and effective method for supporting medical student learning about human factors. Hybrid simulation and VRE combine well together to evaluate behaviour change following educational interventions.

- Use of hybrid simulation to evaluate human factors training utilizing e-learning and findings suggestive of change in behavior in the clinical environment or Kirkpatrick level three

- The global pandemic has highlighted the importance of human factors training in healthcare. Now more than ever, students need to understand how human factors impact patient safety. Ongoing human factors training and research is essential to healthcare preparedness..

Effects of live and video simulation on clinical reasoning performance and reflection

Cleary, T. J.; Battista, A.; Konopasky, A.; Ramani, D.; Durning, S. J.; Artino, A. R., Jr.

INTRODUCTION: In recent years, researchers have recognized the need to examine the relative effectiveness of different simulation approaches and the experiences of physicians operating within such environments. The current study experimentally examined the reflective judgments, cognitive processing, and clinical reasoning performance of physicians across live and video simulation environments. METHODS: Thirty-eight physicians were randomly assigned to a live scenario or video case condition. Both conditions encompassed two components: (a) patient encounter and (b) video reflection activity. Following the condition-specific patient encounter (i.e., live scenario or video), the participants completed a Post Encounter Form (PEF), microanalytic questions, and a mental effort question. Participants were then instructed to re-watch the video (i.e., video condition) or a video recording of their live patient encounter (i.e., live scenario) while thinking aloud about how they came to the diagnosis and management plan. RESULTS: Although significant differences did not emerge across all measures, physicians in the live scenario condition exhibited superior performance in clinical reasoning (i.e., PEF) and a distinct profile of reflective judgments and cognitive processing. Generally, the live condition participants focused more attention on aspects of the clinical reasoning process and demonstrated higher level cognitive processing than the video group. CONCLUSIONS: The current study sheds light on the differential effects of live scenario and video simulation approaches. Physicians who engaged in live scenario simulations outperformed and showed a distinct pattern of cognitive reactions and judgments compared to physicians who practiced their clinical reasoning via video simulation. Additionally, the current study points to the potential advantages of video self-reflection following live scenarios while also shedding some light on the debate regarding whether video-guided reflection, specifically,

is advantageous. The utility of context-specific, micro-level assessments that incorporate multiple methods as physicians complete different parts of clinical tasks is also discussed.

- There is benefit of live over video simulations and video self reflection following live simulations

- Evaluating live and video simulation on clinical reasoning performance and reflection is a research method that translates to every healthcare specialty. This research has the potential to be replicated in various specialties highighting the importance of teaching clinical decision making.

COVID-19 pandemic preparation: using simulation for systems-based learning to prepare the largest healthcare workforce and system in Canada

Dub√©, M.; Kaba, A.; Cronin, T.; Barnes, S.; Fuselli, T.; Grant, V.

Healthcare resources have been strained to previously unforeseeable limits as a result of the COVID-19 pandemic of 2020. This has prompted the emergence of critical just-in-time COVID-19 education, including rapid simulation preparedness, evaluation and training across all healthcare sectors. Simulation has been proven to be pivotal for both healthcare provider learning and systems integration in the context of testing and integrating new processes, workflows, and rapid changes to practice (e.g., new cognitive aids, checklists, protocols) and changes to the delivery of clinical care. The individual, team, and systems learnings generated from proactive simulation training is occurring at unprecedented volume and speed in our healthcare system. Establishing a clear process to collect and report simulation outcomes has never been more important for staff and patient safety to reduce preventable harm. Our provincial simulation program in the province of Alberta, Canada (population = 4.37 million; geographic area = 661,848,Äâkm(2)), has rapidly responded to this need by leading the intake, design, development, planning, and co-facilitation of over 400 acute care simulations across our province in both urban and rural Emergency Departments, Intensive Care Units, Operating Rooms, Labor and Delivery Units, Urgent Care Centers, Diagnostic Imaging and In-patient Units over a 5-week period to an estimated 30,000 learners of real frontline team members. Unfortunately, the speed at which the COVID-19 pandemic has emerged in Canada may prevent healthcare sectors in both urban and rural settings to have an opportunity for healthcare teams to participate in just-in-time in situ simulation-based learning prior to a potential surge of COVID-19 patients. Our coordinated approach and infrastructure have enabled organizational learnings and the ability to theme and categorize a mass volume of simulation outcome data, primarily from acute care settings to help all sectors further anticipate and plan. The goal of this paper is to share the unique features and advantages of using a centralized provincial simulation response team, preparedness using learning and systems integration methods, and to share the highest risk and highest frequency outcomes from analyzing a mass volume of COVID-19 simulation data across the largest health authority in Canada.

- Lessons Learned from using simulation to prepare for COVID-19 pandemic including: scenario objectives, simulation methods, high impact and high frequency outcomes

- Just-in time education is an important educational model that is extremely relevant in light of the global pandemic. This research study includes a large variety of specialties

that have all been impacted by COVID-19. A centralized simulation response team is a novel concept with ongoing research potential.

Simulation-based education to promote confidence in managing clinical aggression at a paediatric hospital

Mitchell, M.; Newall, F.; Sokol, J.; Heywood, M.; Williams, K.

BACKGROUND: An increasing number of incidents involving aggressive behaviour in acute care hospitals are being witnessed worldwide. Acute care hospital staff are often not trained or confident in managing aggression. Competent management of clinical aggression is important to maintain staff and patient safety. Training programmes for acute care staff are infrequently described in the literature and rarely reported for paediatric staff. Simulation training allows practice of skills without patient risk and may be more effective than traditional teaching formats for aggression management. AIM AND DESIGN: The aim of this proof of concept study was to develop a simulation-based education session on aggression management for acute care paediatric staff based on best practice principles, to evaluate the acceptability of this training programme and to gain an understanding of the impact of the training on participants' perceived confidence in managing clinical aggression. Two separate simulation exercises were delivered as a 2-h component of a hospital management of clinical aggression (MOCA) training day. Participants completed a written survey immediately prior to, at completion of the simulation-based group training, and at 3-6,Äâmonths following the simulation training. FINDINGS: Nine training days were conducted in 2017 for nursing, medical, allied health, education and security staff with a total of 146 participants (83% were acute care nurses). Two thirds (68%) of participants had experienced clinical aggression as part of their routine work, with 51% overall reporting a lack of confidence managing these patients. Immediately following the simulation training, 80% of all participants reported feeling more confident in managing clinical aggression, 47% reported a 1-point increase in confidence, whilst 33% of participants reported a 2- or 3-point increase. At 3-6,Äâmonths post-training, 66% of respondents (N = 44) reported continued confidence in managing aggression with 100% of participants stating they would recommend simulation training to colleagues. CONCLUSIONS: Simulation training is an acceptable method of training and shows promise to improve staff-perceived confidence for managing behavioural emergencies in acute paediatric health care settings. In addition, there were potential enduring positive impacts at 3,Äâmonths after the study. Whilst resource and time intensive, further research assessing the benefits of utilising simulation training in this setting is warranted in order to minimise staff burn-out and improve outcomes for these very vulnerable patients.

- This is prevelant to today's climate and is also translatable to other specialities outside of actue care.

- Practice without patient or staff risk. Should increase confidence of staff in their skills/abilities for situations which may or may not frequently occur.

Fundamental underpinnings of simulation education: describing a four-component instructional design approach to healthcare simulation fellowships

Meguerdichian, M. J.; Bajaj, K.; Walker, K.

Although in 2020, there are more than 120 healthcare simulation fellowships established globally, there is a paucity of literature on how to design fellowship programs most effectively, to equip graduates with the knowledge, skills, and attitudes of a competent simulation educator. Offering a systematic structure to approach simulation fellowship programmatic design may aid in better achieving program goals. In this manuscript, we present the application of the 4-component instructional design model as a blueprint to the development of Simulation Education Fellowships. We offer examples used at the NYC Health + Hospitals simulation fellowship to illustrate how the 4-component model informs fellowship program design which promotes the development of a simulation educator. This manuscript will provide a roadmap to designing curricula and assessment practices including self-reflective logbooks to focus the path toward achieving desired skills and shape future conversations around programmatic development.

- A well institutied and practical guide to help in fellowship cirrciulum development, for somewhat of a more standard approach so there can be expectations that our fellow graduates meet

- Paper suggests a stucture to academic program/fellowship which is currently lacking. Help in knowledge building and improve standards of simulation educators.

Translational simulation: from description to action

Nickson, C. P.; Petrosoniak, A.; Barwick, S.; Brazil, V.

This article describes an operational framework for implementing translational simulation in everyday practice. The framework, based on an input-process-output model, is developed from a critical review of the existing translational simulation literature and the collective experience of the authors' affiliated translational simulation services. The article describes how translational simulation may be used to explore work environments and/or people in them, improve quality through targeted interventions focused on clinical performance/patient outcomes, and be used to design and test planned infrastructure or interventions. Representative case vignettes are used to show how the framework can be applied to real world healthcare problems, including clinical space testing, process development, and culture. Finally, future directions for translational simulation are discussed. As such, the article provides a road map for practitioners who seek to address health service outcomes using translational simulation.

- A good framework and discussion on translational simulation, what it is, how it differs from tradiational simulation and how to apporach it

- operational framework for implementing translational simulation in everyday practice. The framework, based on an input-process-output model

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Educator-student talk during interprofessional simulation-based teaching

Jackson B.N., Brady A., Friary P., Braakhuis A., Sekula J., Miles A.

Background Simulated learning environments are increasingly common in interprofessional education (IPE). While reflection is key to simulated learning, little is known about the nature of these conversations during simulation. The aim of this exploratory paper was to quantify communicative features of conversations during interprofessional simulation scenarios between dietetics students, speech-language therapy students and their educators. Methods Conversations between students and educators during the pauses between simulated scenario phases were recorded and transcribed. Student and educator utterances were quantitatively analysed for speech acts, question types and elements of IPE (clinical reasoning, roles and responsibilities, client and family centred care, interprofessional collaboration, clinical procedural tasks). Results Across 1340 utterances from six scenarios, analyses of conversational speech acts and question types highlighted similar patterns of usage between two educators despite different clinical scenarios and professional backgrounds. Educators used a minimally higher proportion of open compared with closed questions, and higher-level problem-solving questions predominated in comparison to simple factual questioning. Educators used more requests for action and attention and students displayed more performative and responsive acts ($p<0.05$). Students were exposed to all elements of IPE through conversations in all scenarios. Conclusions Conversations during pauses in immersive simulated scenarios between educators and students enable rich IPE opportunities and higher-level problem-solving. Educators encouraged students to problem solve within and across disciplines with open questions. Educators provided few factual responses to questions themselves rather diverting questions back to the students. This approach to the analysis of conversation can support educators to evaluate their own communication during interprofessional simulations. © Author(s) (or their employer(s)) 2020. No commercial re-use. See rights and permissions. Published by BMJ.

- Adds to the IPE literature. An innovative way to analyze debrief methods and outcomes.