Free press - ISSN 2785-7468

SIMZINE

ENG ESP ITA

SIMulation magaZINE

Artemisia Gentileschi
Self portrait as Santa Caterina d'Alessandria
1615-1617

n.19 - March/Marzo/Marzo 2025

simzine.news

BODY INTERACT™
VIRTUAL PATIENTS

PRACTICE WITH VIRTUAL PATIENTS, SAVE REAL LIVES.

AVKIN®
Bring Simulation to Life

BRINGS YOUR SIMULATIONS TO LIFE.

SIMX

VR SIMULATED PATIENT ENCOUNTERS.

THE EASIEST SOLUTION FOR GREAT SCENARIO DESIGN AND PRACTICE

iRIS
Scenario Design System

PROUDLY DISTRIBUTED IN ITALY BY nume+

Via Panciatichi 40/11
50127 Firenze
nume.plus
info@nume.plus

SUMMARY

SIMZINE

Website
www.simzine.news
Contacts:
amministrazione@simedita.it
redazione@simzine.it
ads@simzine.it

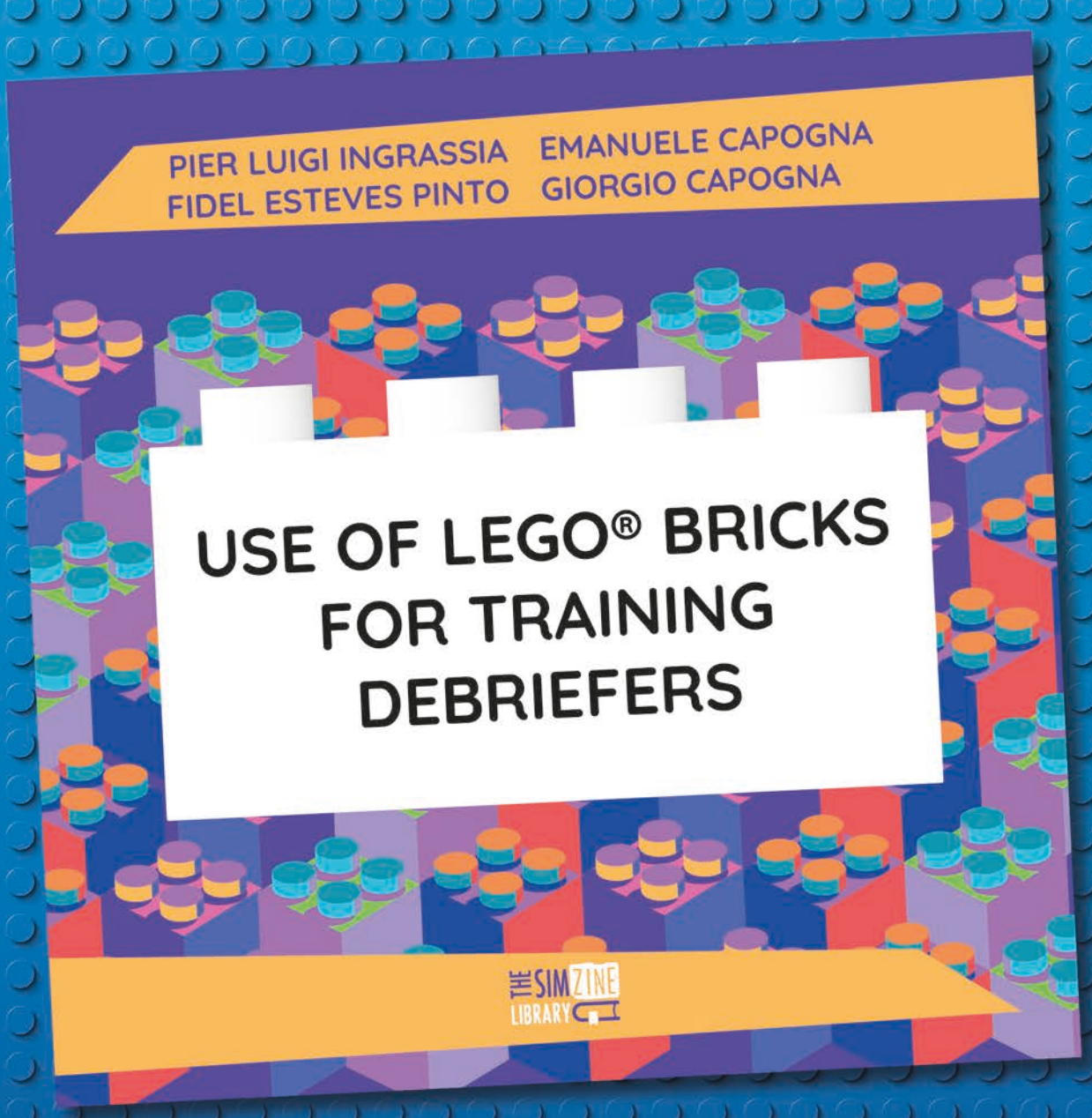
Editor SIMedita srls
Pier Luigi Ingrassia, Presidente
Giacomo Gensini, Consigliere
Via Panciatichi 40/11 - 50127 Firenze
Printing
Cartografia Toscana - Via Mammianese Nord - 51017 Pescia (PT)

Cover image made by
Pietro Cordini.

Director
Pier Luigi Ingrassia
Project Manager
Emma Altomare
Graphic by
Pietro Cordini - Carlo Tizzi
Web Developer
Maurizio Masseti
Social media and communication manager
Gianluca Nepi
External relations
Giacomo Gensini
Sales and customer relations
Annalisa Pellecchia

Authors of this issue:
Mohammed Al-Hassan
Michela Bernardini
Alessia Bolamperti
Dario Cecilio-Fernandes
Manfredi De Caria
Roqaia Dorri
Raffaella Ferrara
Ewlyn Stefany Figueroa Perry
Carmen Gomar Sancho
Griselda Gonzalez-Caminal
Sergio Guinez-Molinos
Pier Luigi Ingrassia
Rosaria Lea
Alice Monzani
Giulia Mormando
Jacob Rahman
Jennifer Roye
Syretta Spears
Jiri Travenec

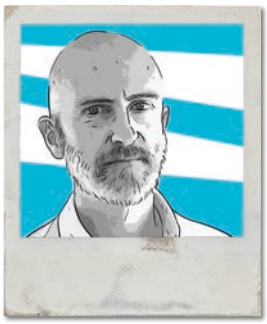
Registration at the Civil Court of Florence on 29/9/2021, nr. 6151
Whoever finds errors, omissions and inaccuracies in the materials, data and information published, or believes that such materials, data, information violate their rights, you can send an email to Simedita Srls: ***info@simzine.it***
ISSN 2785-7468



Are you ready to immerse yourself in a new and revolutionary training approach in the world of debriefing? Are you wondering how LEGO® bricks can completely change the way you train as a debriefer? Are you looking for a method that promotes a stimulating and relaxed learning environment?

If the answers to these questions are yes, then you certainly can't miss this booklet.

Coming soon on simzine.news



Read in your language

EDITORIAL

Collaboration, advocacy, and unwavering commitment

Every year on March 8th, the world comes together to celebrate **International Women's Day**, a global occasion to recognize the social, economic, cultural and political achievements of women. It is also a time to reflect on the ongoing struggle for gender equality and to renew our commitment to create a more inclusive and equitable society. At SIMZINE, we believe that storytelling is a powerful catalyst for change. By sharing the experiences and successes of women in our field, we hope to inspire meaningful conversations and actions that lead to a more just and equitable world, while recognizing the fundamental importance of diversity, equity, and inclusion (DEI). In these pages you will find articles that showcase the diverse talents and expertise of women in healthcare simulation.

Let's start from the cover.

This issue's cover pays tribute to **Artemisia Gentileschi**, a pioneering artist of the 17th century who defied the constraints of her time. Despite facing immense challenges, including a traumatic experience of violence and a deeply unjust trial, Gentileschi persevered, carving out a space for herself in the male-dominated world of art. Today, she is celebrated not only as a masterful painter but also as an icon of female empowerment. Her journey mirrors the struggles and triumphs of countless women in history, those who have fought against systemic barriers, challenged societal norms, and paved the way for future generations.

Let's continue with a bit of history.

I recently came across the story of **Angélique du Coudray**, an 18th-century midwife who revolutionized childbirth education. Her innovative use of a life-size mannequin to train midwives saved countless lives, setting a precedent for simulation-based learning that continues today. And this is what **Raffaela Ferrara** describes in her article, in which she explains how the use of an obstetric simulator not only guarantees adequate technical preparation but also empathic, allowing the needs of women during childbirth to be respected.

And now we come to the present day.

This issue's SIM Face features Professor **Doris Østergaard**, an anesthesiologist who has dedicated her career to enhancing healthcare education through simulation-based training. Her leadership at the Copenhagen Academy for Medical Education and Simulation (CAMES) has paved the way for innovative approaches in medical training, influencing patient safety policies and practices worldwide. Her inspiring journey and insights are a must-read.

This issue also acknowledges the challenges and successes that women (and all simulationists) face in research. While **Giulia Mormando**'s compelling article, *I Thought Simulation Was Just a Game, Until It Influenced International Guidelines*, illustrates how the findings of simulation research can translate into real-world improvements in patient care, the article *Overcoming Peer Intimidation in Research Culture* underscores the importance of fostering a collaborative and supportive environment where diverse perspectives are valued. Peer intimidation, as discussed by **Syretta Spears** and **Jennifer Roye**, can stifle innovation and discourage open discourse, hindering the advancement of science. By promoting mentorship, constructive feedback, and clear reporting mechanisms, we can create a more inclusive and equitable research landscape where all voices can be heard.

I am also excited to bring back the SIM Debate in this issue, featuring two distinguished panelists: Professor **Cristina Diaz-Navarro**, from Wales, and **Méryl Paquay**, from Belgium.Their discussion on clinical debriefing sheds light on the cultural and logistical challenges in patient safety and explores strategies for integrating structured debriefing into healthcare practice.

While this issue primarily focuses on human healthcare simulation, it's important to recognize the growing role of simulation in veterinary medicine. **Ewlyn Figueroa** in her piece highlights the increasing use of virtual platforms in veterinary medicine, underscoring the broad applicability of simulation across healthcare disciplines and the potential for cross-disciplinary collaboration.

As we reflect on the achievements of women in simulation and beyond, we want to raise awareness of the topic of **DEI** in healthcare education. This topic is the core of the article *What if healthcare banned diversity, equity and inclusion (DEI)?* This thought-provoking editorial challenges us to consider the potential consequences of limiting DEI initiatives in healthcare and healthcare education, emphasizing the importance of creating inclusive environments where all individuals can thrive and contribute their unique perspectives.

I conclude with a question for everyone: how can we use simulation as a tool not only for technical training but also for fostering inclusive mindsets and breaking down barriers?

The answer lies in collaboration, advocacy, and unwavering commitment. Looking ahead, we must continue to challenge gender stereotypes and DEI biases in healthcare simulation. This requires a collective effort from individuals, institutions, and organizations to create a culture of inclusivity and respect.

PLI

Read in your language

EDITORIAL

What if Healthcare Banned Diversity, Equity, and Inclusion (DEI)?

https://doi.org/10.69079/SIMZINE.B25.N19.00059

Imagine that the principles of diversity, equity, and inclusion (DEI) do not exist, and so we remove any DEI initiative of training in health care, can healthcare truly thrive without it, or would patient care suffer the consequences? Without DEI, would future doctors, nurses and healthcare providers in general be prepared for real-world patient diversity?

This is neither a political article nor one that aligns with government practice or ideology. No matter your political stance, this is simply a parallel thought experiment: *what if*?

President Trump started his second term as US President this month in his inevitable style. Of course, absolutely nothing controversial or remotely discussion-worthy happened to catch the attention of commentators, everything he does is naturally absorbed as completely inoffensive. He's slipped through the White House front doors like a parent returning home late at night, trying not to disturb a newborn child. *(I hope you can see how I am seeking to avoid politics here).*

However, one of the executive orders he signed presented a unique parallel thought worth exploring. Mr Trump declared Diversity, Equity, and Inclusion (DEI) programmes "illegal" and subsequently ended all DEI initiatives within federal government organisations, promptly placing all staff connected to these programmes on garden leave.

This got me thinking: what would this mean for healthcare and healthcare education if such a ban were extended to these fields? What would it mean for educators, students, providers, and, most importantly, patients?

DEI in Healthcare: Does Eliminating It Solve Anything?

Another question arises: by simply eliminating DEI initiatives, would we naturally treat everyone equally, regardless of their differences and needs? By avoiding the discussion and the attention, would things resolve themselves? Just as some believe that if we stop talking about racism, racism might magically disappear.

DEI must have emerged for a reason, right? Before DEI initiatives, were people from historically underrepresented groups truly included and free from discrimination or marginalisation? Was unconscious bias at play? If we can so easily afford to do without DEI, does that mean everything is now better, or was there never a problem to begin with?

Or is this about the *survival of the fittest* and Darwin's theory of natural selection, applied to the workplace, to healthcare, and to patient care?

Key Elements of DEI in Healthcare

Irrespective of what DEI means in government, what does it mean in healthcare?

In training and delivery, as they relate to patients and staff, DEI encompasses the following:

- **Culturally competent care**
  Providing care that is respectful of patients' cultural values and backgrounds. Let's be clear: this does not mean receptiveness to only minority cultures but to all cultures, including the one that dominates your country or the space you currently inhabit.

- **Training:**
  Delivering training to help staff recognise unconscious bias and challenge assumptions, not just for minorities but also for the majority. DEI works in all directions.

- **Accessibility**
  The practical side of DEI. This includes ramps, accessible parking, accessible toilets, and other measures for individuals with physical disabilities. Even as able-bodied people, what would we do without accessible toilets? The landscape would feel slightly strange. Would you stop and help

someone in a wheelchair use a standard cubicle?

- **Support**
  Providing additional support for patients who need it, such as those with learning disabilities or mobility issues. DEI initiatives offer specialist assistance tailored to individuals, ensuring that our family members, friends, co-workers, and fellow patients receive the right support. This results in a more flexible, personalised service—less robotic, more human-centred.

- **Communication**
  Ensuring that those with communication barriers—whether due to language differences, social difficulties, or health conditions—are understood, whether they are patients, colleagues in distress, or students. How could better communication methods introduced through DEI initiatives be considered unnecessary?

- **Policies**
  All of these elements can be formalised into policies, ensuring that DEI principles are upheld regardless of whether an institution - such as, say, the *leaders of the free world* - deems them necessary. (*Just so they also know how to avoid DEI*).

The Impact on Medical Simulation: A Training Perspective

Medical simulation plays a crucial role in training healthcare professionals, bridging the gap between theory and real-world patient interactions. But what if DEI were removed from this equation?

- **Standardised Patient Representation:** Without DEI, would medical simulations account for diverse patient backgrounds? Standardised patients (SPs) play a key role in exposing students to real-world patient diversity. Eliminating DEI might reduce exposure to different ethnic, linguistic, and socio-economic backgrounds, impairing a future doctor's ability to treat patients effectively.
- **Bias in AI-Driven Simulations:** Many modern simulations use AI-based models for diagnosis and patient interaction. However, if these systems are trained on data that lacks representation, the risk of biased outcomes increases. DEI ensures that training data is broad and that simulations reflect real-world patient demographics.
- **Inclusive Scenario Development:** Simulation-based training creates realistic case studies for medical professionals to practice decision-making. Without DEI, there's a risk that scenarios default to a limited patient population, overlooking the complexities of treating patients from varied backgrounds, including LGBTQ+ individuals, non-native speakers, and those with disabilities.
- **Communication Training:** One of the key elements of medical simulation is fostering effective patient-doctor communication. Without DEI, would simulations teach medical students how to handle language barriers, cultural sensitivities, or patients who distrust medical institutions due to historical inequities?
- **Ethical Decision-Making:** Many simulations incorporate ethical dilemmas where healthcare providers must navigate complex decisions. Without DEI, there's a risk that these dilemmas would be framed within a narrow perspective, ignoring issues like systemic bias in treatment plans and access to care.

If DEI were banned, medical simulation would lose a vital component of realism, creating a gap between training and actual patient encounters. Healthcare education would regress to a one-size-fits-all model, diminishing the quality of patient care.

Final Thoughts

The reality is, regardless of one's personal stance on DEI, those who uphold its principles and implement its policies are not only improving life for individuals represented under the DEI banner—whether as employees, service users, patients, or extended families—but also making life easier for those who oppose DEI.

DEI ensures that systems are less overwhelmed by matching specialised needs with specialised professionals. Instead of creating inefficiencies, DEI mitigates potential problems before they arise.

But then again, maybe all this DEI stuff is just a hoax.

Read in your language

DID YOU KNOW...

Simulazione e invecchiamento cognitivo

https://doi.org/10.69079/SIMZINE.B25.N19.00060

Che c'entrano simulazione e invecchiamento? Questo articolo esplora il ruolo della simulazione clinica e della realtà virtuale nell'affrontare le sfide dell'invecchiamento, offrendo soluzioni innovative per migliorare la qualità della vita degli anziani. Dalla diagnosi precoce con serious games alla prevenzione attraverso esperienze virtuali, fino al trattamento con programmi di riabilitazione cognitiva, la simulazione emerge come uno strumento cruciale per trasformare l'assistenza sanitaria in un'era di longevità.

Abbiamo raddoppiato l'aspettativa di vita, ma siamo davvero preparati per l'inevitabile impatto dell'invecchiamento sulla nostra mente? Nonostante i progressi in ambito medico e farmacologico abbiano prolungato l'aspettativa di vita, l'estensione della vita in salute non ha tenuto il passo. Le malattie croniche, in particolare quelle neurodegenerative, sono in aumento, creando una sfida complessa per i sistemi sanitari. In un'epoca di simulazione avanzata e di intelligenza artificiale, come possiamo, allora, usare queste tecnologie per affrontare la sfida dell'invecchiamento e del declino cognitivo? Tuttavia, ebbene fare alcune premesse teoriche prima di parlare di che ruolo la simulazione può avere nella diagnosi, prevenzione e trattamento del declino cognitivo, probabilmente il più preoccupante tra i segni dell'invecchiamento.

Il processo di invecchiamento

L'invecchiamento è un processo biologico in cui le cellule perdono la capacità di replicarsi e funzionare correttamente, culminando in un declino delle funzioni fisiologiche. Sebbene influenzato dalla genetica, è fortemente modulato dallo stile di vita, con fattori come sedentarietà e obesità che giocano un ruolo centrale.

Il declino cognitivo è tra i segni più evidenti: secondo l'OMS (2021), l'Alzheimer e le demenze colpiscono l'8,1% delle donne e il 5,4% degli uomini sopra i 65 anni. La maggior parte dei casi è legata a fattori ambientali, evidenziando l'importanza della prevenzione. Anche in età adulta, il cervello mantiene una limitata capacità di neurogenesi, particolarmente nell'ippocampo, e di creare nuove connessioni sinaptiche, processi influenzati da stimoli cognitivi, attività fisica e qualità del sonno. Questi meccanismi aiutano a rallentare il declino cognitivo e preservare le funzioni cerebrali.

Come la simulazione può stravolgere le regole del gioco?

La simulazione sta crescendo rapidamente a tutti i livelli della pratica sanitaria. Essa è, infatti, oggi sempre più considerata non solo uno strumento di training e di riduzione del rischio clinico, ma anche uno strumento per i pazienti stessi. La terapia assistita dalla VR, ad esempio, è diventata un argomento popolare che ha attirato numerosi studi nel campo della riabilitazione (Diaz et al, 2018), dei disturbi della salute mentale (Wiederhold and Riva, 2019), dei disturbi psichiatrici (Dellazizzo et al, 2020) e della tossicodipendenza (Hone-Blanchetet al, 2014). Nel caso del declino cognitivo la simulazione può essere d'aiuto in tre fasi fondamentali: diagnosi, prevenzione e trattamento.

Diagnosi

Mediante sistemi di simulazione, è possibile riconoscere i segni del declino cognitivo in una fase iniziale. Un più precoce riconoscimento dei disordini cognitivi può offrire notevoli vantaggi per medici e pazienti. Innanzitutto, offre più tempo per preparare una terapia di supporto al paziente, accompagnata da accorgimenti in ambito di lifestyle che potrebbero migliorare nettamente il decorso della patologia. Uno studio condotto nel 2021 dalla dott.ssa Natalia Sevcenko e da un team di ricercatori di alto livello sugli utenti dei serious games, ha rivelato che è possibile determinare il *carico cognitivo* di un soggetto semplicemente giocando per qualche minuto ad uno di questi giochi di simulazione ad alta fedeltà. Si tratta di giochi in cui vengono simulati scenari verosimili, all'interno dei quali i partecipanti si trovano a dover svolgere dei compiti specifici. In base alle modalità e ai tempi di svolgimento delle azioni richieste, il software è in grado di calcolare il carico cognitivo: lo sforzo impiegato dalla memoria di lavoro per richiamare le informazioni necessarie. Secondo John Sweller, psicologo australiano che nel 1991 ha elaborato la teoria del *cognitive load*, o carico cognitivo, le attività che richiedono un carico cognitivo maggiore vengono portate a termine con più difficoltà dai pazienti. È necessario tenere in considerazione che questo parametro è del tutto individuale e che, un'attività che per un soggetto sano richiederebbe un basso carico cognitivo, potrebbe richiederne uno molto elevato a un paziente neurologico. Quanto appena detto dovrebbe rendere evidente l'importanza che la simulazione può assumere, nell'ambito delle diagnosi precoci, essendo capace di percepire anche minime carenze cognitive, non sempre evidenti all'occhio umano.

Prevenzione

Nell'ambito della prevenzione la simulazione può rappresentare uno strumento valido per i soggetti sani che presentano specifici fattori di rischio per lo sviluppo di patologie cognitive. Infatti, tutte le attività che stimolino le abilità intellettuali svolgono un ruolo preventivo nei confronti dei disordini cognitivi. Esperienze quali passeggiate nella natura, viaggi, giochi mentali e interazioni sociali possono essere simulate con i moderni strumenti di realtà virtuale. In tal modo, sarebbe possibile, anche per gli individui più isolati e meno coinvolti in società, ricevere gli stimoli necessari a mantenere un buon

livello di sinaptogenesi e neurogenesi. Ricordiamo che questi processi combinati garantiscono una protezione ai neuroni, svolgendo così un ruolo preventivo verso patologie tipiche dell'età avanzata, secondo la teoria della riserva cognitiva. Il concetto di *riserva cognitiva* nell'ambito delle neuroscienze è ampiamente utilizzato. Esso prevede che ogni esperienza, ogni lettura, ogni interazione sociale, lasci una traccia nel nostro cervello, arricchendo il repertorio cognitivo di cui disponiamo. Diviene evidente che, partendo da una vasta riserva cognitiva, sia più improbabile incorrere nel decadimento senile. Michela Matteoli, dirigente del programma di neuroscienze presso l'istituto Humanitas di Milano, sintetizza il concetto con un'intrigante metafora botanica dicendo: «Dovremmo innaffiare la nostra memoria per non farla avvizzire».

Sembra evidente che la simulazione, nelle sue varie modalità, offra numerose possibilità di arricchire le esperienze di ognuno di noi, contribuendo ad incrementare le nostre riserve cognitive. In ambito preventivo, i serious games, di cui abbiamo accennato, sfidanti dal punto di vista intellettuale, sono un metodo straordinariamente utile per mantenere la mente attiva e allenata. L'apprendimento in sé, derivante dalla lettura, dallo studio di nuove lingue, o da qualsiasi altra fonte, ha dimostrato comprovati benefici per il cervello umano. Infatti, in seguito a periodi di apprendimento di attività specifiche, si verificano modifiche vere e proprie nella conformazione dell'encefalo. Tale fenomeno è permesso dalla virtù del nostro cervello che prende il nome di plasticità, ossia quella proprietà che permette al nostro organo più importante di modificarsi a livello macroscopico, per merito delle microscopiche modifiche che si verificano a livello sinaptico. Tale processo avviene in seguito ad una stimolazione delle funzioni cognitive, le quali tenderanno a migliorare e a preservarsi. Al contrario, un cervello poco stimolato è più a rischio di incorrere nel processo di decadimento. In quest'ottica la simulazione, e più nello specifico la realtà virtuale, potrebbe rivelarsi uno strumento *gamechanging* nella prevenzione delle malattie appartenenti allo spettro del declino cognitivo.

Trattamento

L'argomento del trattamento è, stando alle conoscenze neuroscientifiche più aggiornate, ancora troppo simile alla prevenzione. Infatti, per le malattie del declino cognitivo non abbiamo, ad oggi, delle reali cure. Esistono però strumenti atti a rafforzare determinate funzioni cognitive e crearne una sufficiente riserva, al fine di prevenirne un vero e proprio crollo nella terza età. In questo, la pratica della simulazione, e ancora una volta della realtà virtuale, possono giocare un ruolo da protagoniste. La VR consente di simulare attività mnemoniche particolarmente coinvolgenti per i pazienti. In proposito, uno studio di dodici settimane, condotto a Taiwan dal gruppo di ricerca di Ying-Yi Liao, sull'efficacia della VR nel trattamento del declino cognitivo può essere utile a comprendere le possibili applicazioni della simulazione nel trattamento di queste patologie. L'intento dello studio taiwanese era quello di mettere a confronto le modifiche in termini di attivazioni neuronali in due gruppi di pazienti affetti da Disturbo Cognitivo Lieve (*Mild Cognitive Impairment*). Il primo gruppo ha seguito un regime di esercizio fisico e stimolazione cognitiva classica. Il secondo invece, ha mantenuto l'esercizio fisico, integrando però esercizi di stimolazione cognitiva in realtà virtuale. Al termine delle dodici settimane si sono riscontrati miglioramenti in entrambi i gruppi; tuttavia, il gruppo che ha inserito la VR nel proprio programma di training ha mostrato miglioramenti significativamente maggiori nei campi di memoria verbale e capacità cognitive generali. Inoltre, anche le analisi emodinamiche hanno mostrato un incremento dell'efficienza nel coinvolgimento neuronale nell'area della corteccia prefrontale per il gruppo di training integrato con VR. Ovviamente, la conclusione a cui lo studio ha condotto è la probabile utilità di introdurre la simulazione virtuale, nel programma riabilitativo dei pazienti anziani affetti da deficit cognitivi. Un'altra categoria di pazienti particolarmente propensa a sviluppare patologie cognitive è quella dei soggetti con deficit uditivi. Spesso, infatti, questa condizione può diventare motivo di isolamento proprio a causa delle difficoltà che i pazienti...

Bibliografia
Elenco completo dei riferimenti nell' articolo web

Read in your language

DID YOU KNOW...

Simulación Veterinaria: las plataformas virtuale en medicina animal

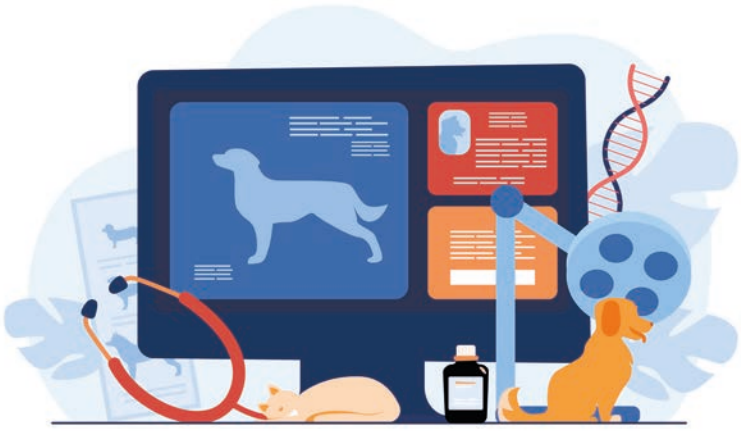
https://doi.org/10.69079/SIMZINE.B25.N19.00068

La simulación veterinaria está cambiando tambien la formación en medicina animal al proporcionar entornos de aprendizaje seguros y realistas. Gracias a tecnologías como la realidad virtual y plataformas interactivas, los estudiantes pueden desarrollar habilidades clínicas, mejorar la toma de decisiones y reducir errores, todo sin poner en riesgo el bienestar de los pacientes reales.

Introducción a la simulación clínica

La simulación clínica es una metodología de enseñanza que pretende crear las condiciones de situaciones auténticas de área clínica, esperando que los estudiantes generen un pensamiento reflexivo y mejoren sus competencias, este tipo de simulación no solo puede ser llevada a un escenario tangible, también se puede realizar mediante metodologías virtuales. (INACSL, 2016)

Esta metodología de enseñanza se basa en el aprendizaje experiencial, en un entorno controlado, en donde existe una seguridad física, psicológica y emocional aptas para que el estudiante logre alcanzar sus resultados de aprendizaje y desarrollas las habilidades y competencias necesarias para ejercer su rol profesional. (Afanador, 2012)



La metodología de simulación clínica se compone de la etapa de pre-debriefing que se caracteriza por la construcción del escenario basado en los resultados de aprendizaje, la preparación física del entorno en donde se llevará a cabo el escenario y los aspectos administrativos que todo esto conlleva (petición de insumos, coordinación con actores, etc), la siguiente etapa es el brief en donde el tutor e entrega los lineamentos, resultados de aprendizaje, instrucciones con respecto al uso de fantomas o simuladores a los estudiantes, es importante destacar que en este momento se menciona la seguridad física, psicológica y emocional que rodea un entorno simulado. Posterior a esto se ejecuta el escenario planteado, este escenario puede ser de alta fidelidad con situaciones muy semejantes a la realidad que se enfrentará el estudiante, o de baja fidelidad cuyos ambientes son poco semejantes a la realidad. El rol tutor cambia según el tipo de fidelidad en la cual se encuentra el estudiante, siendo más intrusiva en los escenarios de baja fidelidad y manteniéndose al margen del escenario en aquellos que son de alta fidelidad. Una vez terminado el escenario se realiza el debriefing, instancia donde los estudiantes, con ayuda de su tutor, reflexionan sobre las decisiones, comportamientos, aplicación de la teoría que tuvo el estudiante dentro del escenarios, todo esto en un ambiente de respeto, seguridad psicológica y emocional.

La simulación clínica no es solo la vivencia de un escenario, es la reflexión profunda del escenario vivido guiada por un tutor que deja de lado su función instructiva para tomar un rol de acompañante en los procesos neurológicos de aprendizaje del estudiante.

En este contexto es que los modelos de simulación clínica adquieren especial relevancia, ya que ofrecen una posibilidad de aprendizaje y práctica fundamental en la formación en el área de la salud, más tratándose de las ciencias veterinarias. Permite al estudiante involucrarse en el escenario, identificar los problemas; efectuar la recolección exhaustiva de los signos, síntomas y datos clínicos, realizar la interpretación de los exámenes complementarios y asumir en el manejo clínico adecuado del paciente

La simulación clínica corresponde al conjunto de situaciones y prácticas ilustrativas que tienen por finalidad la duplicación o representación de eventos, comportamientos o actividades que ocurren en el ambiente de trabajo, lo que permite el adiestramiento y/o evaluación de habilidades, destrezas, aptitudes y conocimientos específicos, de manera confiable y segura. El objetivo es permitir a los estudiantes, participantes, utilizar dichas habilidades, destrezas, aptitudes y conocimientos en situaciones lo más reales posibles, traduciéndolo a situaciones de la vida real, en contextos similares ayudando

a minimizar el error antes de aplicar el procedimiento en un paciente real; a fin de que el aprendiz adquiera la "pericia" necesaria. (Decloedt et al., 2021)

Importancia de la Simulación Clínica en la Formación Veterinaria

En Chile, el 19 de julio de 2017 se promulga la ley 21.020 que establece la tenencia responsable de las mascotas y tipifica el maltrato animal como "toda acción u omisión, ocasional o reiterada, que injustificadamente causare daño, dolor o sufrimiento al animal" (Ley 21020 de 2017) lo que nos lleva a las limitaciones propias de la manipulación de animales por parte de estudiantes de medicina veterinaria quienes tienen poca o ninguna experiencia, poniendo en riesgo en más de una oportunidad el bienestar de sus pacientes. En este contexto, los INACSL Standards of Best Practice: SimulationSM Outcomes and Objectives (2016) establecen que todas las experiencias basadas en simulación deben comenzar con el desarrollo de objetivos medibles diseñados para alcanzar resultados esperados. Estos estándares, aplicados a la simulación clínica en salud, promueven la seguridad del paciente, el entrenamiento de habilidades técnicas y no técnicas, el trabajo en equipo y la comunicación efectiva. Estas prácticas son perfectamente extrapolables a la medicina veterinaria, contribuyendo a reducir accidentes durante consultas veterinarias, promoviendo la seguridad del paciente, del tutor y del médico veterinario, y disminuyendo muertes por iatrogenias, errores de medicación, entre otros.

Limitaciones de la Simulación Clínica

La introducción de la simulación clínica a la medicina veterinaria proporciona un avance en temas de bienestar animal y es los procesos de enseñanza – aprendizaje en el estudiante, no obstante, para su implementación es necesario una infraestructura adecuada que se adapte a las necesidades de los programas académicos y de los resultados de aprendizaje, así también con materiales adecuados y personal capacitado. Queda en evidencia que recrear un escenario de alta fidelidad de una consulta de animales pequeños requiere menos costos asociados que el recrear un escenario en donde se deba trabajar con animales de granja. Otro aspecto por considerar que los simuladores veterinarios carecen de la tecnología que sus pares de simulación clínica humana, siendo la gran mayoría simuladores cuyas funciones son manuales con la carencia de algún software que simula constantes vitales, sonidos o algunos movimientos...

Referencias

Afanador, A. A. (2012). Simulación clínica y aprendizaje emocional. Revista colombiana de psiquiatria, 41, 44S-51S. https://doi.org/10.1016/s0034-7450(14)60178-5 [...]

Encuentre la lista completa de referencias en el artículo web.

Read in your language

DID YOU KNOW...

Standardized vs. Virtual Patients in Medical Education

https://doi.org/10.69079/SIMZINE.B25.N19.00061

Do we still need human actors to train future doctors, or is digital innovation ready to take their place? As medical education evolves, the debate between Standardized Patients (SPs) and Virtual Simulated Patients (VSPs) intensifies. Which approach better prepares students for the realities of patient care, thus empathy-driven human interaction or the limitless scalability of digital innovation? Which will emerge as the true gold standard?

Standardized vs. Virtual Patients in Medical Education

Simulation-based education has become a cornerstone of modern medical training, offering learners an opportunity to develop clinical skills in a safe, controlled environment. The use of simulation ensures that students can practice and refine their abilities without the risk of harming real patients [1].

Patient simulation allows learners to practice clinical decision-making, diagnostic techniques, and interpersonal communication in realistic patient scenarios. It bridges the gap between theoretical knowledge and real-world practice, enhancing both technical and soft skills. Furthermore, simulations can prepare students to handle complex cases through repetition and structured feedback [2].

As technology revolutionizes medical education, a pressing question emerges: do we still need human actors to train future doctors, or is digital innovation ready to take their place?

In this article, we wanted to explore the similarities and differences between two major types of patient simulations: standardized patients (SPs) and virtual simulated patients (VSPs). SPs involve live actors trained to portray patients, while VSPs utilize computerized programs that simulate clinical scenarios. Both approaches offer unique advantages and challenges in medical education. This comparison will highlight how these methods impact student learning, their cost-effectiveness, and their potential for future integration into curricula [3].

Standardized Patients (SPs)

Definition:

Standardized patients (SPs) are individuals trained to portray real patients in controlled and structured scenarios. They simulate specific medical conditions or cases to help students practice clinical interactions and decision-making in a risk-free environment [1].

Historical Background and Evolution:

The concept of SPs was pioneered in the 1960s by Dr. Howard Barrows, initially as a tool to assess clinical skills in neurology. Over the decades, SPs have evolved into essential components of medical education, helping students develop diagnostic, interpersonal, and communication skills. They are now widely integrated into curricula, especially for practicing sensitive patient interactions [4].

Advantages:

- Realistic human interaction and feedback:

  SPs offer healthcare students authentic encounters, enabling them to develop empathy and improve their bedside manner. These interactions provide personalized feedback, enhancing students' diagnostic abilities and patient care practices [3].

- Enhances communication skills:

SPs play a crucial role in developing effective communication skills, particularly when dealing with difficult or emotionally charged cases. Role-playing in these scenarios helps students refine their ability to discuss sensitive issues with patients [3].

Limitations:

- Cost and availability issues:
  While SP programs offer substantial educational benefits, they are resource-intensive, requiring extensive training, coordination, and payment of actors. Availability is often limited, making it challenging to scale SP programs across large student groups [5].

Virtual Simulated Patients (VSPs)

Definition:
Virtual Simulated Patients (VSPs) are computerized programs designed to simulate patient interactions, allowing students to engage in realistic clinical scenarios through virtual means. These programs mimic patient behaviors, responses, and conditions, offering learners an interactive way to practice and enhance their clinical skills [6].

Technological Advancements in Simulation:
Significant technological developments have enabled VSPs to feature sophisticated dialogue systems, gesture recognition, and interactive feedback. Advances in 3D game engines and natural language processing have further enhanced the realism of VSPs, creating environments for students to practice history-taking, diagnosis, and patient communication [7].

Advantages:

- Cost-effectiveness and Accessibility:
  VSPs offer an affordable solution to clinical education, reducing the need for human actors and making patient interactions available at any time and place. They ensure that students can practice as often as needed without logistical constraints [2].

- Standardized Learning Environment and Feedback:
  VSPs provide a consistent learning experience by ensuring every student encounters the same scenarios, helping maintain fairness and standardization. In addition, automated feedback mechanisms allow learners to identify mistakes and improve performance efficiently [8].

Limitations:

- Technological Barriers and Lack of Emotional Realism:
  Despite advancements, VSPs still face challenges, such as limited emotional depth and the inability to replicate the nuanced communication found in real-life patient interactions. These technological limitations may hinder the development of empathy and subtle communication skills [8].

Comparative Analysis: SPs vs. VSPs

Educational Outcomes

Research comparing standardized patients and virtual simulated patients has shown that both approaches can be effective in achieving educational outcomes, though they do so in different ways. Studies indicate that SPs offer more realistic human interaction, while VSPs provide a more standardized and scalable approach to clinical education. However, both methods have been found to lead to comparable educational outcomes in terms of improving clinical skills and preparing students for real-life patient interactions [7].

Effectiveness in Skill Acquisition: Clinical management, Communication, Diagnostic Ability

In terms of skill acquisition, both SPs and VSPs have demonstrated effectiveness in improving clinical skills, communication abilities, and diagnostic proficiency. Virtual patients, however, tend to excel in fostering technical and procedural skills through repetitive practice, while SPs are more suited for developing interpersonal communication and empathy. A meta-analysis has shown that VSPs are at least as effective as traditional education methods in terms of knowledge acquisition and are superior in enhancing...

Advantages and Limitations of SPs and VSPs

Aspect	Standardized Patients (SPs)	Virtual Simulated Patients (VSPs)
Realism	High - mimics human emotions well	Lower emotional realism
Feedback	Personalized feedback from actors	Automated, consistent feedback
Scalability	Limited - actors availability and cost issues	High - technology allows scalability
Training Focus	Interpersonal communication, empathy	Technical and procedural skills
Resource Needs	High - actor training and coordination needed	Moderate - technology setup required

References

Complete list of references on the web article.

Comparison of SPs and VSPs

Aspect	Standardized Patients (SPs)	Virtual Simulated Patients (VSPs)
Definition	Trained actors portraying real patients in controlled settings	Computerized programs simulating patient interactions
Realism	High emotional and communication realism	Limited emotional realism; strong technical simulations
Cost	High - requires actor training and coordination	Lower - requires technology but no actors
Availability	Limited due to logistical and cost constraints	High - accessible anytime, scalable
Best Suited For	Communication skills, empathy development	Technical skills, repetitive practice, standardization

Read in your language

SIM LOVE

Pensavo che la simulazione fosse solo un gioco, finché non ha influenzato le linee guida internazionali

Da strumento di formazione a motore di ricerca scientifica: uno studio in simulazione ha dimostrato che le manovre salvavita restano efficaci anche con i dispositivi di protezione individuale. I risultati, pubblicati nel pieno della pandemia, sono stati citati nelle linee guida internazionali ILCOR, influenzando le pratiche di rianimazione cardiopolmonare. Una conferma che la simulazione non è solo addestramento, ma un laboratorio di ricerca per migliorare la sicurezza dei pazienti.

Nel 2018, durante gli ultimi mesi della mia specializzazione in Medicina d'Emergenza, stavo frequentando la Centrale Operativa di Venezia Mestre e guardavo fuori dalla finestra le macerie che il nucleo NBCR e USAR dei Vigili del Fuoco utilizzano per le loro esercitazioni. Avevo anche partecipato ad alcune loro esercitazioni di vestizione e svestizione e spostamento di barella con paziente. Erano piuttosto faticose e complesse le esercitazioni in palestra! Avevo molte domande: avevano fatto altre esercitazioni per altre procedure? Quali erano le procedure in un paziente in arresto cardiaco? Se fossi stata della squadra dei soccorsi avremmo avuto il tempo di svestirci e poi rianimarlo? Non era meglio stare vestiti e iniziare il massaggio? Ma quanto sarebbe stato faticoso? Quanto sarebbe stato efficace? E posizionare un accesso venoso?

Avevo condiviso tutte queste domande con colleghi e amici della centrale e della specializzazione. "Ma dai Giulia quando vuoi che succeda che ci vestiamo così per una emergenza biologica o chimica?" Altri invece la avevano preso sul serio le domande che mi ero posta ed avevamo inizato a programmare uno studio che rispondesse almeno in parte a questi dubbi. Ma come misurare l'efficacia di un massaggio cardiaco? Come misurare la tempistica di posizionamento di un accesso venoso, un accesso intraosseo o un drenaggio? O di un tourniquet?

E io, affezionata e entusiasta facilitatrice di simulazione, ho proposto di utilizzare i nostri simualtori in quanto provvisti di sensori per misurare la profondità e la velocità delle compresisoni toraciche, ma potevano rilevare anche la chiusura completa dell'arteria nel posizionamento del touniquet, ecc. Insomma finalmente i nostri simulatori risultavano utili anche per fare ricerca e non solo per il training del personale sanitario!

Abbiamo quindi letto le linee guida anche per gli studi randomizzati controllati in simulazione (Checklist: Simulation-based Research Extensions for the CONSORT Statement), preparato il protocollo, studiato nei minimi dettagli le giornate di simulazione e tra agosto e settembre 2019 abbiamo arruolato 36 partecipanti randomizzandoli nel gruppo di intervento e di controllo [procedure con vs senza (procedure con personal protective equipment (PPE)]. La tabella 1 riporta le procedure svolte e le diverse modalità e i modelli di simulazione utilizzati

Stavamo scrivendo l'articolo quando è iniziata la pandemia COVID 19, e in quel momento ho pensato che quei PPE li stavamo usando davvero e ....

Procedura	Modalità e Dispositivo di Simulazione
Rianimazione cardiopolmonare	Simulatore di paziente adulto (SUSIE, Gaumard Scientific, Miami, USA)
Applicazione del laccio emostatico tattico con un laccio emostatico per applicazione di combattimento (CAT Resources, Rock Hill, USA)	Simulatore di paziente adulto (Trauma Hal , Gaumard Scientific, Miami, USA)
Decompressione con ago per pneumotorace tensivo	Task trainer (Truman Trauma X, TruCorp, Lurgan, Irlanda del Nord)
Posizionamento di un accesso venoso periferico	Un simualtore di paziente adulto (CodeBlue III, Gaumard Scientific, Miami, USA)
posizionamento di un accesso vascolare intraosseo utilizzando un dispositivo EZ-IO (Teleflex, Wayne, PA)	Simualtore di paziente adulto (Code Blue III , Gaumard Scientific, Miami, USA)
Preparazione e somministrazione del farmaco	Simualtore di paziente adulto (Code Blue III , Gaumard Scientific, Miami, USA)

Tab1: Procedure svolte e modalità e modelli di simulazione utilizzati

SCANSIONA IL CODICE QR E CONTINUA A LEGGERE
simzine.news

SE VUOI LEGGERLO
ECCO L' INTERO ARTICOLO

Mormando G, et al. Life-Saving Procedures Performed While Wearing CBRNe Personal Protective Equipment: A Mannequin Randomized Trial. Simul Healthc. 2021;16(6):e200-e205

At Simulation Collective, we do things a little differently.

Like R42 and the Emulant overlays, bringing diversity into simulation.

R42 Bariatric Nursing Manikin

The R42 Bariatric Manikin bridges the training gap for healthcare professionals treating obese patients. Designed for realism and inclusivity, it ensures trainees develop the skills and empathy needed to provide competent care to this growing patient demographic.

Emulant Manikin Overlays

Emulant overlays enhance medical training by deepening emotional engagement with simulated patients. These realistic overlays provide the technology needed to create a more diverse and immersive learning experience, improving medical simulation outcomes.

More of what we've been up to

- **Innovating a paramedic driving simulation experience.**
- **Realistic Simbulance development and installations.**
- **AR, VR, and immersive solutions.**

We are looking for partners to sell R42, our Immersive solutions and the Emulant overlays around the world. If you would like to become a partner, please get in touch with hellohester@simulationcollective.com

See our products in action

We offer online demos for many of our simulation products. Book your free online demo by scanning the QR code or visit our website - **simulationcollective.com**

Simulation Collective.

simulationcollective.com
hellohester@simulationcollective.com

Read in your language

DID YOU KNOW...

Griselda Gonzalez-Caminal
Research Group on Transformative Innovation and Simulation, University of Vic-University of Central Catalonia, Manresa, Spain
griseldagonzalezcaminal@gmail.com

MOSAICO collaborative clinical simulation

https://doi.org/10.69079/SIMZINE.B25.N19.00058

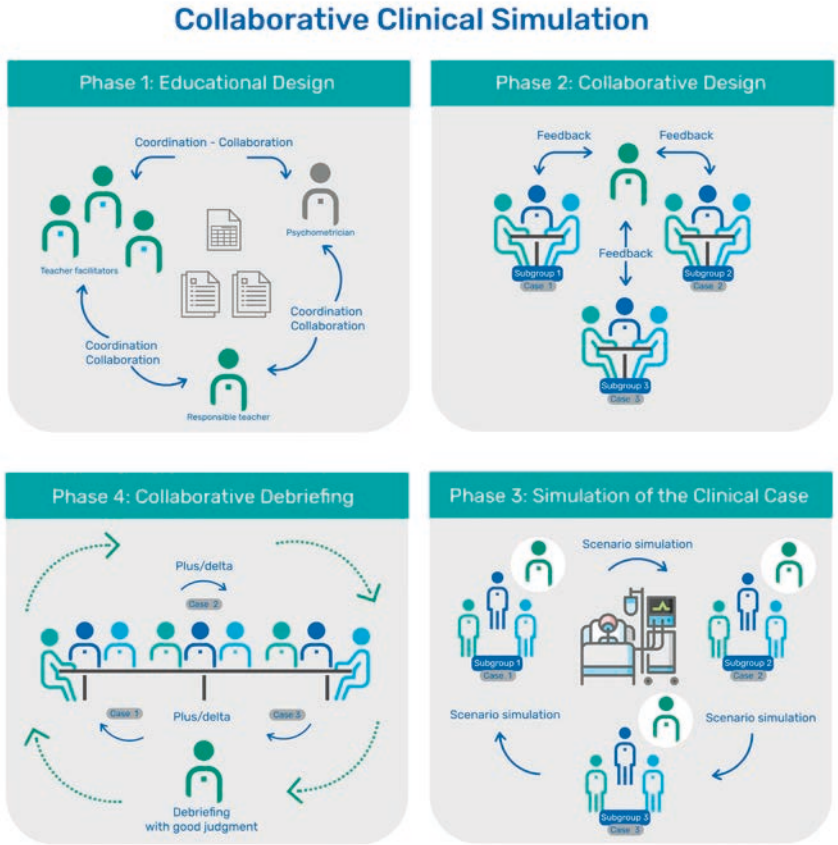
MOSAICO, developed by Talca University in 2015, merges Computer-Supported Collaborative Learning (CSCL) and Clinical Simulation (CS) to enhance simulation-based education. It promotes advanced cognitive skills and comprehensive clinical competence through interactive collaboration and flipped learning. Participants design and assess their own scenarios, gaining a deeper understanding of clinical conditions. Successfully implemented in Chile and Spain, MOSAICO provides a 360° view of clinical competencies across various healthcare levels.

Introduction

Clinical Collaborative Simulation (CCS) also known as MOSAICO was developed by Talca University (Chile) in 2015 by merging Computer-Supported Collaborative Learning (CSCL) and Clinical Simulation (CS) (Guinez-Molinos et al, 2016). It was born from a need for more effective implementation of simulation-based education and reinforced links with digitalization. Simulation could be a resource-intensive methodology. Therefore, finding way to optimize the process is a cornerstone. The complementarity between CCS and CS should allow for synergies that result in more effective teaching and learning.

MOSAICO comprises four phases: (Phase 1) educational design by teaching staff; (phase 2) collaborative case design by groups of students; (phase 3) simulation; and (phase 4) collaborative structured debriefing (see image 1). It is a method of learning and teaching designed to develop and assess clinical, procedural, attitudinal, and cognitive competencies. Furthermore, it is an innovative way where participants are going to design, assess and guide their own simulation cases.

The recommendation is to work with, at least three different diagnostics from a clinical situation (e.g.: management of patient with haematuria could be causes due to cystitis, nephritic colic, and vesical tumour). So, by being exposed to three different clinical presentations of a single clinical problem to be resolved by different groups, participants will get an almost 360° view of this clinical competence.



Phases and Implementation

During phase 1, Educational Design, a teaching committee is established to select the clinical competency to be worked on and to develop the different instruments and pedagogical guides or materials for students to review. Whenever possible, syntheses of accepted clinical guidelines and/or internationally approved performance algorithms will be used.

During phase 2, Design, it is recommended to divide participants in at least 3 subgroups of 2-5 students to facilitate interactive collaboration. Based on the materials provided before-hand and just at the beginning of this phase participants in each subgroup will design a scenario supported with guidance of a teacher. Each one of the subgroups will design a different case. They will be provided with one different clinical situation to design. The trigger could be a final diagnosis itself or a complementary test that leads to the diagnostic, if there is one (e.g.: an EKG or scan). They should think about how the clinical situation presents itself in each case and what differentiates their particular case from the others. They should develop all the symptomatology, characteristic signs and, circumstances of the patient or other roles (family members/other professionals).


Carmen Gomar Sancho
Simulation Chair and Research Group on Transformative Innovation and Simulation, University of Vic-University of Central Catalonia, Manresa, Spain
cgomar@umanresa.cat


Sergio Guinez-Molinos
Head Biomedical Informatics Lab. School of Medicine Universidad de Talca (Chile)
sguinez@utalca.cl

The group is going to distribute the roles. So, they have to think on the portrait of all circumstances in the real life to transfer them to the case.

This phase is pretty linked to "flipped learning", since participants absorb factual content prior to class via the pedagogical guidelines developed during phase 1. Designing their own scenario cases is particularly transformative, significantly enhancing the learning process by fostering advanced cognitive skills, thereby promoting more profound and analytical thought processes in participants. Moreover, the design of case characteristics and proposed solutions will provide the students with a deeper, more integrated acquisition of clinical competence.

In the phase 3, the subgroups will take turns to be treating team, observers, and designers (they will guide the scenario) during the three scenarios. This particular way of simulation allows students to experience being in both sides of the scenario: inside as treating and designers and outside as observers alternatively.

Last, phase 4 is a collaborative structured debriefing, following the different stages of any debriefing of SimZone 2, according Roussin and Weinstock (2017). Differences here lies on the fact that the three cases are equally discussed sequentially and each one of the subgroups expose their perspective from treating, designing and observers' positions. Collaborative and team actions are discussed as cornerstones to solve patient condition. This circumstance together with realistic scenarios give a 360° view of the competence, that teacher wrap up during the closing and transferring the competence to professional life.

Outcomes and Benefits

What makes MOSAICO interesting is that participants themselves design the cases. This allows a deeper comprehension of any clinical condition, since participants must think how this clinical condition behave within that particular patient. Furthermore, the selected clinical competence it can we worked out in the different levels of health system: primary care, in-hospital care or specialized care, enriching the transfer of the competence.

MOSAICO is a highly collaborative in all different stages and genuinely participant-centred teaching methodology. It is therefore important to emphasise that the focus of the activities is on the participant, while the teacher's role, who should have knowledge on simulation, is to guide their learning by providing advice, standards, and feedback.

So far, MOSAICO has been implemented with great success in Chile and Spain, especially with medical students. Most recently has been developed the approach for other professional such as nursing or physiotherapy, getting also great outcomes.

FOR MORE INFORMATION
CONTACT SERGIO GUINEZ
SGUINEZ@UTALCA.CL.
OR GO TO THE
WEBSITE
HTTPS://MOSAICOWEB.CL/

References

Sergio Guinez-Molinos, Agustín Martínez-Molina, Carmen Gomar-Sancho, Víctor B. Arias González, Demian Szyld, Encarnación García Garrido & Patricio Maragaño Lizama. A collaborative clinical simulation model for the development of competencies by medical students. Medical Teacher. 2017;39(2):195-202. doi: 10.1080/0142159X.2016.1248913

Roussin CJ, Weinstock P. SimZones: An Organizational Innovation for Simulation Programs and Centers. Acad Med. 2017;92(8):1114-1120. doi: 10.1097/ACM.0000000000001746. PMID:28562455.


SIM SCIENCE RECAP
SIMZINE
AIR
The go-to source for quick updates on the latest in healthcare simulation literature
The first healthcare simulation podcast in French
SIM MOOVE
by SIMZINE
Hosted by Fouad Marhar
Listen to SIM Moove
music
Read the podcast recaps here

SIMFACE

Spotlight on Doris Østergaard: A star in medical simulation and patient safety

Read in your language

https://doi.org/10.69079/SIMZINE.B25.N19.00065

Few names in medical education and patient safety are as influential as Professor Doris Østergaard. An anaesthesiologist by training, she has spent decades pioneering the use of simulation to enhance healthcare training and improve clinical outcomes. As a Professor at the University of Copenhagen and Director of Research at the Copenhagen Academy for Medical Education and Simulation (CAMES), she has been at the forefront of integrating simulation techniques into medical curricula. Her work has influenced policies, training programs, and research in the field of patient safety. In this interview, we explore her journey, insights on medical simulation, and vision for the future of healthcare education. And we also discover her passion for extreme sports to do together with grandchildren.

Read our interview with her to find out more on simzine.news

Read in your language

SIMTALKS

Entrevista con Betty Bravo, presidenta de la Sociedad Ecuatoriana de Simulación Clínica

Una conversación con Betty Alexandra Bravo Zúñiga, presidenta de SOESIM, sobre su trayectoria en la simulación, los desafíos en Ecuador y su visión para el futuro de la educación y la seguridad del paciente.

Alexandra Bravo Zúñiga

Betty Alexandra Bravo Zúñiga es médica, PhD en Ciencias de la Educación y presidenta de la Sociedad Ecuatoriana de Simulación Clínica. Miembro de SOMESICS e INACSL, con certificaciones en simulación. Ha sido coordinadora del Centro de Simulación de la Universidad Católica de Santiago de Guayaquil, donde también se desempeña como profesora e instructora en innovación educativa.

soesim@outlook.com
in/betty-bravo
/soesim.ec

Nos hemos reunido con Betty Alexandra Bravo Zúñiga, médica y PhD en Ciencias de la Educación, actual presidenta de la Sociedad Ecuatoriana de Simulación Clínica (SOESIM). Con una destacada trayectoria en educación médica y simulación, Betty ha liderado iniciativas clave para la integración de esta metodología en la formación sanitaria en Ecuador. En esta charla, comparte su visión sobre el impacto de la simulación en la seguridad del paciente, los desafíos de su implementación y la necesidad de estandarización en el país. También reflexiona sobre el futuro de la simulación y los proyectos estratégicos de SOESIM para fortalecer su adopción. Esta conversación se enmarca en nuestro compromiso de dar voz a los presidentes de sociedades científicas internacionales, destacando su labor y visión para el avance de la educación y la seguridad en salud.

Hola Betty, muchas gracias por aceptar nuestra invitación a tener esta charla.
Te gustaría presentarte a nuestros lectores y contarnos quién eres y cuándo conociste la simulación

Soy Betty Alexandra Bravo Zúñiga, de 48 años. Mi carrera inicia en el grado y en los hospitales donde trabajé por muchos años; mi objetivo era dominar la profesión por lo cual participé de brigadas médicas altruistas a nivel nacional. Sin embargo, mi propósito principal cambia cuando fui testigo de efectos adversos en familiares y amigos, lo que me marcó profundamente. Mi experiencia profesional abarca muchos años en áreas críticas de diferentes casas de salud, donde siempre mantuve un compromiso con el paciente y con la formación. En el 2011 me dediqué a la docencia, abandonando la práctica hospitalaria en el 2015; para luego enfocarme en la formación del grado y la educación en simulación. Mi pasión por la simulación radica en su propósito principal: garantizar la integridad del paciente y reducir los riesgos de ocasionar efectos adversos.

¿Qué le motivó a convertirse en Presidente de la SOESIM, la sociedad científica nacional?

En 2017, asumí el rol de coordinadora de simulación en la Universidad Católica de Santiago de Guayaquil (UCSG). Junto a una educadora, iniciamos la formación de docentes como Educadores en Simulación, impulsando el desarrollo de esta metodología en la Facultad. Gracias al respaldo de Facultad y de la Universidad, logramos capacitar a varios profesores, fortaleciendo la enseñanza basada en simulación. Sin embargo, observé que la metodología en simulación seguía siendo poco conocida en otras universidades del país, posiblemente debido a factores internos y contextuales. Esto me impulsó a buscar estrategias para estandarizar y difundir la aplicación de la simulación en el Ecuador. En 2022, organizamos el I Congreso Internacional de Educación en Simulación de la UCSG, al que asistieron universidades de todo el país, las cuales de manera unánime decidieron que presida la Sociedad Ecuatoriana de Simulación en Ciencias de la Salud (SOESIM).

¿En qué se diferencia Ecuador de otros países latinoamericanos en cuanto a la difusión de la simulación como herramienta de formación y reducción de riesgos clínicos?

Aunque los contextos de los paí-

ses latinoamericanos son diferentes, comparten desafíos y realidades similares respecto a la difusión de la simulación en el ámbito sanitario y en la formación en salud. En Ecuador, hemos enfrentado obstáculos para establecer y consolidar esta metodología. Sin embargo, considero que hemos avanzado significativamente en su integración en la formación de grado. Ahora, aspiramos a que esta práctica sea adoptada en el ámbito sanitario mediante políticas impulsadas por el Ministerio de Salud Pública (MSP), que regula hospitales, centros y clínicas del país. La creación de la Sociedad Ecuatoriana de Simulación, la colaboración con redes y el respaldo de Sociedades Internacionales, así como la organización de Congresos Internacionales de Simulación, buscan establecer marcos comunes y estándares para su implementación. Esto promueve su adopción en instituciones educativas y de salud, enfocándose en la reducción de efectos adversos y la mejora continua en la atención sanitaria.

¿Cuáles son los principales desafíos que enfrenta SOESIM para promover la simulación como herramienta esencial en la educación médica?

Como una sociedad joven, aún carecemos de una cultura y concientización sólida sobre la importancia de la sociedad, sumado a un profundo desconocimiento de sus beneficios para mejorar las competencias clínicas y la seguridad del paciente. Además, el financiamiento y los recursos limitados de algunas instituciones educativas dificultan su desarrollo, mientras que la ausencia de políticas públicas y regulaciones gubernamentales provoca inconsistencias en su integración en el currículo, así como el de implementar simulación in situ y áreas de simulación en Centros de Salud. La resistencia al cambio de algunos docentes y profesionales, quienes prefieren métodos tradicionales, también representa un obstáculo. Para superar estos desafíos, resulta crucial implementar estándares y fomentar colaboraciones entre las Instituciones Educativas, Consejo de Educación Superior (CES) y el Ministerio de Salud, con el fin de asegurar la reducción de los efectos adversos que representan más del 40% de los casos a nivel mundial y, son causados por el factor humano.

¿Qué rol juega SOESIM en el establecimiento de estándares nacionales para la simulación en salud en Ecuador?

La SOESIM, como referente en simulación, se dedica a promover y desarrollar lineamientos que aseguren la calidad y efectividad de esta valiosa herramienta educativa y profesional para el desarrollo de competencias...

Read in your language

DID YOU KNOW...

Pier Luigi Ingrassia
Centro di Simulazione (CeSi), Centro Professionale Sociosanitario, Lugano
Pierluigi.ingrassia@edu.ti.ch
ingrassiapierluigi
pier.l.ingrassia

Angélique du Coudray: Mother of Obstetric Simulation

https://doi.org/10.69079/SIMZINE.B25.N19.00066

In the heart of the 18th century, in an era dominated by men, a French woman distinguished herself as a pioneer in obstetrics and entrepreneurship: Angélique Marguerite Le Boursier du Coudray. Her invention, the "obstetric simulator", revolutionized the training of midwives, saving countless lives and paving the way for women in the world of healthcare simulation.

Image of Angelique Marguerite Le Boursier du Coudray. Photo from: Wikipedia

At a time when childbirth was a deadly risk and obstetric science was still in its infancy, one woman managed to change the fate of thousands of mothers and newborns. Angélique du Coudray not only challenged the barriers of gender in medicine, but also invented the first obstetric simulator in history, transforming the training of midwives forever. But who was this visionary really? And how did her *Machine* influence modern obstetrics?.

Angélique du Coudray: A Visionary in Obstetrics

Born in 1714 in Clermont-Ferrand, Angélique du Coudray came from a family of doctors. She cultivated her passion for medicine from an early age and, determined to follow in her family's footsteps, obtained her diploma as a midwife on September 26, 1739 and began practicing in Paris, where she trained numerous apprentices.

In an era when obstetrics was often relegated to folk practices and women faced significant barriers in accessing medical professions, du Coudray recognized the importance of practical training for midwives. To meet this challenge, he devised an obstetric mannequin, known as "La Machine", which allowed apprentices to practice childbirth techniques in a controlled and safe environment.

The *Machine*: The First Obstetric Simulator

In 1756, du Coudray presented a "Machine" to the Académie de Chirurgie intended to "demonstrate the practice of childbirth". Described in a concise but precise manner, this "Machine" made of cloth had the shape of a woman's pelvis, which allowed trainee midwives to learn and practice the correct gestures to assist a woman in labor, regardless of the position of the baby in the womb. The object faithfully reproduced the anatomy of the "parts used for generation", representing the uterus, its orifice, its ligaments, the vagina, the bladder and the rectum. The Machine was flanked by handmade neonatal mannequins, with articulated limbs so they could move freely in any position. Thanks to this flexibility, which also applied to the neck, the mannequin could realistically reproduce both the natural and abnormal positions of the fetus, both inside the uterus and during childbirth.

This obstetric simulator represented an extraordinary innovation, approved by the Academy of Surgery as a suitable model for the practice of childbirth. Du Coudray used the Machine during his itinerant lessons, training thousands of midwives and surgeons in over forty French cities.

A concrete example of impact on health

In October 1759, King Louis XV entrusted Madame du Coudray with a crucial mission: to educate midwives in rural areas of France to counter the alarming rate of neonatal mortality. At that time, around 200,000 newborns died every year due to poor obstetric preparation, contributing to the demographic decline of the kingdom.

For over 25 years, between 1759 and 1783, Madame du Coudray traveled through France and part of Belgium with her Tour de France, training thousands of midwives and even some doctors. Her most extraordinary innovation was the creation of the first national training course based on simulation, combining theory and practice in a structured and standardized program. The course lasted about two months and consisted of 40 teaching units, each lasting one day. Classes were held six days a week, both in the morning and in the afternoon, ensuring intensive and in-depth training. With this revolutionary approach, Madame du Coudray laid the foundations for modern midwifery training, improving the safety of childbirth throughout France.

Madame du Coudray's entrepreneurship

In addition to her medical skills, du Coudray showed considerable entrepreneurial spirit. She made several models of her manikin: a "luxury" one, intended to serve as a reference and which the connoisseurs of the provinces visited were obliged to purchase at the price of 500 livres (about €4000); and a second, simpler one, used for demonstrations, offered at the price of 300 livres. This strategy provided a consistent income for her business, which was probably entirely female, given the sewing work required.

Her ability to combine technical innovation and commercial acumen makes her one of the first entrepreneurs in the field of healthcare simulation, a sector that is fundamental in

Example of the Machine of Madame du Coudray kept at the Musée de l'Homme in Rouen, France. Photo from: Wikipedia

For the more curious

The only fully preserved example of the Machine, similar to the one from 1756, is currently on display at the Flaubert and History of Medicine Museum in Rouen, France.

Conclusion

On International Women's Day, remembering the figure of Angélique du Coudray means celebrating a pioneer who, with determination and ingenuity, overcame gender barriers, revolutionizing obstetrics and saving countless lives. Angélique du Coudray's legacy lives on in every modern obstetric simulator, testifying to the importance of her innovative vision. Her contribution remains a beacon of inspiration for women in healthcare and in all fields of innovation.

healthcare training today.

The Lasting Impact of the Obstetric Simulator

The influence of du Coudray and her obstetric simulator was profound. Her lessons helped standardize obstetric practices in France, significantly reducing maternal and infant mortality. Her practical approach to midwifery training inspired future innovations in healthcare education, laying the foundation for the modern use of simulators in clinical training.

In fact, for 300 years obstetrics has made use of training through simulation not only to teach the theory of anatomy and physiology, but also to apply them in practice.

References

Find the complete list of references on the web article.

gener8 Healthcare

BLIS

Skill LP by Simlogic

NEEDLETRAINER™

Simulkare

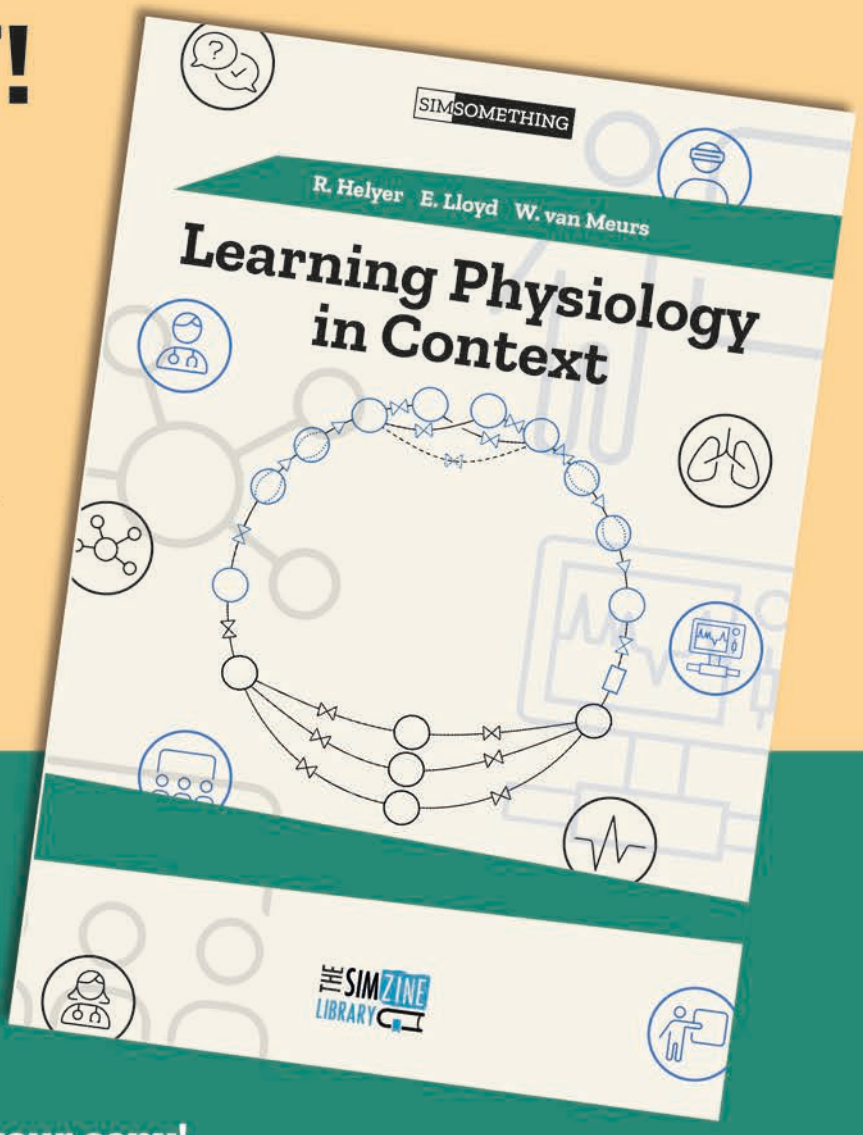
Improve your skills

www.simulkare.it

info@simulkare.it

Learning Physiology in Context

Out NOW!



Scan the QR code and get your copy!

Read in your language

SIM DEBATE

Why don't we do clinical debriefing?

Clinical debriefing is a structured reflective practice enabling healthcare teams to analyze events, identify improvement areas, and enhance patient safety. Our panelists discuss the cultural and logistical challenges hindering its widespread adoption and propose strategies to integrate debriefing into routine clinical workflows.

The debate

Clinical debriefing is an interprofessional meeting that occurs after an event - too often a critical one - and allows members of a healthcare team the opportunity to review and process their experiences in other to improve subsequent performances. Debriefing after critical events has long been recognized as a powerful tool to improve team performance, enhance learning, and, ultimately, improve patient safety. Supported by decades of literature from both medicine and other high-risk industries such as aviation, regular debriefing offers healthcare teams the opportunity to reflect on what went well, identify areas for improvement, and refine their response strategies for future events. However, despite the strong evidence in its favor, clinical debriefing is still far from being a routine practice in many healthcare settings. Studies consistently show that debriefing after critical incidents occurs only a fraction of the time.

This raises important questions: Why is debriefing not happening more regularly in clinical environments? What are the barriers preventing its widespread adoption? And most importantly, what strategies can be implemented to make post-event debriefings a standard practice in all healthcare settings?

To discuss these issues, we have invited a panel of experts in patient safety, clinical education, and healthcare operations. They will explore the reasons behind the inconsistent use of debriefing and propose practical solutions for integrating this valuable process into everyday clinical practice.

Pier Luigi Ingrassia

Cristina Diaz-Navarro
Professor Cristina Diaz-Navarro is the Academic Head for Perioperative Care at the University Hospital of Wales, the Chair of the Scientific Committee for SESAM and the Chair of the Board of Trustees for the TALK Foundation.

Méryl Paquay
Associate Professor of hospital management at ULiège and Quality & Safety Manager at CHU Liège's emergency department. Focuses on linking professional fulfillment and patient safety through countercurrent strategies and routine clinical debriefings.

Despite strong evidence supporting debriefing after critical events, it remains underutilized in many healthcare settings. In your opinion, what are the primary barriers preventing its regular adoption? Are these challenges more cultural, logistical, or something else entirely?

Cristina Diaz-Navarro: Perhaps we should first consider, what experiences should lead to a debriefing?

From my perspective, team self-debriefing should be part and parcel of the way we communicate in clinical environments. Implementing a simple self-debriefing tool such as TALK© (Target, Analyse, Learn, Key actions) can be carried out successfully and cost-effectively. The emphasis with this approach is to encourage teams to self-facilitate debriefing conversations as the working day allows, and engaging in iterative improvement.

A greater challenge is the support of complex debriefing following critical events, which requires the provision of dedicated time and space, as well as trained debriefers who are able to facilitate reflection on sys-

tems and human factors, manage potential conflict, and able to identify emotional trauma, avoid harm and refer to specialist services if needed. Debriefing following psychologically traumatic events should be reserved for specialized professionals such as psychologists and wellbeing teams.

Méryl Paquay: While cultural barriers, such as normalizing discussions of difficult events and fostering psychological safety, contribute to the underutilization of debriefing, I believe the main issue lies in the absence of a sustainable implementation strategy.

Clinical debriefing should be viewed as part of a continuous improvement process, much like Deming's cycle. However, it is often treated as a one-off event rather than a regular practice. When challenges arise, leaders frequently interpret these as failures, rather than as opportunities for adaptation. In reality, failure occurs when we abandon the process rather than adjust it. The key is to keep the improvement cycle moving by continuously identifying and addressing obstacles. The problem is that too much emphasis is placed on the act of performing the debriefing, while the critical work of implementation and sustainability is often overlooked. Both aspects—performing the debriefing and coordinating the process—must be developed with equal strength, as they require different skill sets. Facilitating a debriefing requires communication and reflection skills, while coordinating its regular use demands strong organizational and leadership abilities. Without addressing both components, we risk presenting an incomplete view of what clinical debriefing can truly achieve. Both parts are essential for embedding debriefings into routine practice and ensuring they contribute meaningfully to continuous improvement in healthcare settings.

Time constraints and clinical workload are often cited as reasons why debriefings are skipped. But is there really no solution? Could integrating debriefing into routine workflows or using shorter, more focused debriefings be part of the solution?

Méryl: I fully agree: time constraints shouldn't be an insurmountable barrier. The key is clarifying what we mean by "clinical debriefing." Not all debriefings require an hour of discussion; it all depends on the objective. If the goal is similar to simulation debriefings—focusing on developing both technical and non-technical skills—then longer sessions are appropriate. However, if the aim is organizational learning—through reflective practice and identifying areas for improvement—shorter, routine debriefings can be highly effective.

For example, in our emergency department, we conduct brief debriefings (7–10 minutes max) three to four times per week, and this process has been ongoing for five years. We also continue to hold longer debriefings (up to 1 hour) for specific, high-impact situations. The reason we can keep these routine debriefings so short is that they are designed as opportunities for reflective practice and as part of our feedback loop to surface operational issues quickly.

The real challenge is being clear about the objective. Trying to compress a debriefing that should last an hour into 10 minutes, or unnecessarily prolonging a short, focused session, can lead to frustration and inefficiency. By aligning the debriefing format with the intended goal, it becomes possible to seamlessly integrate debriefings into routine workflows, even in fast-paced clinical environments.

Cristina: Practical and easy debriefing tools such as TALK© , which I mentioned earlier, allow teams to integrate structured debriefing conversations in their daily working life, as they enable clinicians to make more efficient use of communication episodes that already take place in healthcare environments. That way, verbal interactions are organised, carried out with positivity and result in practical outcomes.

However, specific debriefing needs arise following serious untoward events or conflictive situations, which would benefit from trained facilitators.

In any case, institutional support to debriefing programmes is essential, as they should provide the required resources (time, space and trained facilitators for complex or emotional debriefing) as well as support to follow up on any safety gaps or improvement needs identified during debriefing.

Simulation debriefing can provide insight on facilitator and environment attributes. Based on your experience, which type of experience or education is required to become an effective debrief facilitator within a clinical context?

Cristina: I believe that multi-professional clinicians are able to have professional conversations to advance patient care, which...

Read in your language

DID YOU KNOW...

Senti chi parla!
Quando a simulare è il paziente simulato pediatrico

https://doi.org/10.69079/SIMZINE.B25.N19.00064

L'uso del paziente simulato pediatrico sta emergendo come una nuova risorsa nella formazione dei medici in pediatria. Utilizzato in scenari di simulazione realistici, questo approccio aiuta a sviluppare competenze comunicative fondamentali, specialmente nella gestione di situazioni complesse con i bambini. Tuttavia reclutare minorenni, prepararli adeguatamente per il ruolo, insegnare loro come fornire feedback costruttivi e supportarli nella partecipazione a sessioni di simulazione ripetute è un processo complesso e non privo di difficoltà. I risultati raccolti durante la Pediatric Simulation Experience del 2024 hanno evidenziato un forte apprezzamento per l'efficacia dell'approccio, dimostrando che l'integrazione di pazienti simulati è un utile strumento per affinare le abilità relazionali e cliniche dei futuri pediatri.

E se un giorno i bambini potessero dare un feedback ad un medico su come si sono sentiti durante la visita? Ecco, è arrivato quel momento!

Questo breve articolo vuole raccontare l'esperienza del centro SIMNOVA dove, forse per la prima volta in Italia, sono stati introdotti scenari di simulazione con **paziente simulato pediatrico**, specificamente progettati per i medici in formazione specialistica in pediatria.

Infatti, se l'aspetto della comunicazione medico-paziente è raramente incluso nei programmi di formazione, ancor di meno lo è quello con il paziente pediatrico, per cui spesso la capacità di relazionarsi ai piccoli pazienti viene demandata a doti innate e non a competenze apprese durante il percorso formativo.

Nel panorama della simulazione, quella con il paziente simulato è ormai una strategia di apprendimento consolidata, per la formazione delle competenze trasversali di medici e infermieri.

L'uso dei pazienti simulati in pediatria: tra benefici e complessità

"Il paziente simulato è una persona che è accuratamente addestrata a recitare il ruolo e rappresentare segni e sintomi, tanto da non essere distinto da un paziente reale neanche dal professionista esperto" [1]. I pazienti simulati adulti trovano oggi ampio impiego nella formazione dei professionisti sanitari, per lo sviluppo di standard a sostegno delle best practice e della sicurezza sia del paziente, sia dell'operatore. In ambito pediatrico gli aspetti relativi alla comunicazione rivestono un ruolo di particolare rilevanza: i professionisti sanitari in questo contesto sono chiamati a confrontarsi spesso con situazioni complesse, che implicano non solo il possesso di solide competenze cliniche, ma anche di abilità di tipo comunicativo/relazionale, che tengano in considerazione lo sviluppo cognitivo dei bambini, il loro stato emotivo e il contesto familiare di cui fanno parte. L'importante contributo dei pazienti simulati pediatrici nel favorire l'acquisizione di abilità di comunicazione è documentato in letteratura. [2,3] Gamble e colleghi (2016) hanno analizzato 15 studi provenienti da varie fonti e che interessavano diverse professioni sanitarie, ed è emerso chiaramente che il coinvolgimento di bambini e adolescenti è fattibile come strategia non solo di apprendimento ma anche di valutazione. La revisione sistematica di Gamble et al. evidenzia, infatti, come il loro impiego in simulazioni realistiche migliori il coinvolgimento dei partecipanti aumentando il realismo delle interazioni grazie alla loro autenticità e capacità di fornire feedback diretto. Inoltre, il feedback ricevuto dai pazienti pediatrici simulati è risultato particolarmente potente, aiutando i partecipanti a migliorare le abilità di comunicazione in contesti pediatrico-specifici.

In uno studio del 2020, condotto sempre da Gamble, insieme ad altri collaboratori, gli adolescenti che hanno vissuto esperienze come pazienti simulati hanno condiviso riflessioni intime e uniche sulle loro esperienze. Tra i fattori motivanti emersi, spicca un entusiasmo quasi altruistico: il desiderio di contribuire attivamente alla formazione dei futuri professionisti della salute, un aspetto che ha conferito ulteriore valore al loro ruolo educativo. Inoltre, gli adolescenti hanno sottolineato l'importanza di essere preparati attraverso programmi di induzione e formazione, che si sono rivelati fondamentali per aumentare la loro fiducia e competenza nel ricoprire efficacemente il ruolo e fornire feedback costruttivi. È anche interessante che gli adolescenti che avevano osservato adulti incaricati come SP di interpretare ruoli adolescenziali, hanno ritenuto che questa scelta in alcuni casi danneggiasse sia la soddisfazione del paziente simulato sia il raggiungimento degli obiettivi formativi da parte dei partecipanti. Anche se prevalentemente positiva, l'esperienza non è stata priva di aspetti critici: i più giovani hanno riportato stanchezza per le lunghe giornate e disagio nel fornire feedback, mentre alcuni adolescenti più grandi hanno vissuto conseguenze potenzialmente negative, pur non interpretandole come tali.

Reclutare dei minori, formarli adeguatamente al ruolo, aiutarli ad acquisire la capacità di restituire feedback in modo costruttivo e guidarli alla partecipazione di sessioni di simulazione ripetute, risulta quindi essere un processo complesso, non privo di criticità. [4,5] Per far sì che il coinvolgimento di bambini e adolescenti nel rivestire il ruolo di pazienti simulati avvenga in modo sicuro, sono state prodotte delle raccomandazioni specifiche, in accordo con gli standard of best practice, pubblicate dall' Association of Standardized Patient Educators (ASPE), in combinazione con la International Nursing Association of Clinical Simulation and Learning (INACSL). Mentre gli Standards of Best Practice dell'ASPE offrono un quadro generale per l'impiego sicuro e standardizzato dei pazienti simulati pediatrici, le linee guida elaborate da Budd et al. nel 2017 propongono strategie specifiche per garantire la sicurezza, in particolare psicologica, dei piccoli. Tra queste, l'importanza di ottenere consenso informato dai genitori e assenso dai bambini, spiegando in modo comprensibile la loro partecipazione, così come la necessità che le sessioni si svolgano in ambienti sicuri e prevedano pause regolari, supporto emotivo e feedback da parte dei bambini stessi. Questo approccio, rispettoso delle loro capacità cognitive ed emotive, sembra in grado di garantire un contesto educativo etico e protettivo.

Un'esperienza diretta con pazienti simulati pediatrici: la PSE 2024

Nel mese di Aprile 2024, presso il centro SIMNOVA, si è tenuta la Pediatric Simulation Experience (PSE), un evento formativo rivolto ai medici in formazione specialistica in pediatria , provenienti dalle diverse scuole italiane, volto al miglioramento della cura di neonati e bambini attraverso la formazione basata sulla simulazione.

Tra le stazioni proposte, una prevedeva uno scenario di simulazione...

Tabella 1: Risultati del questionario

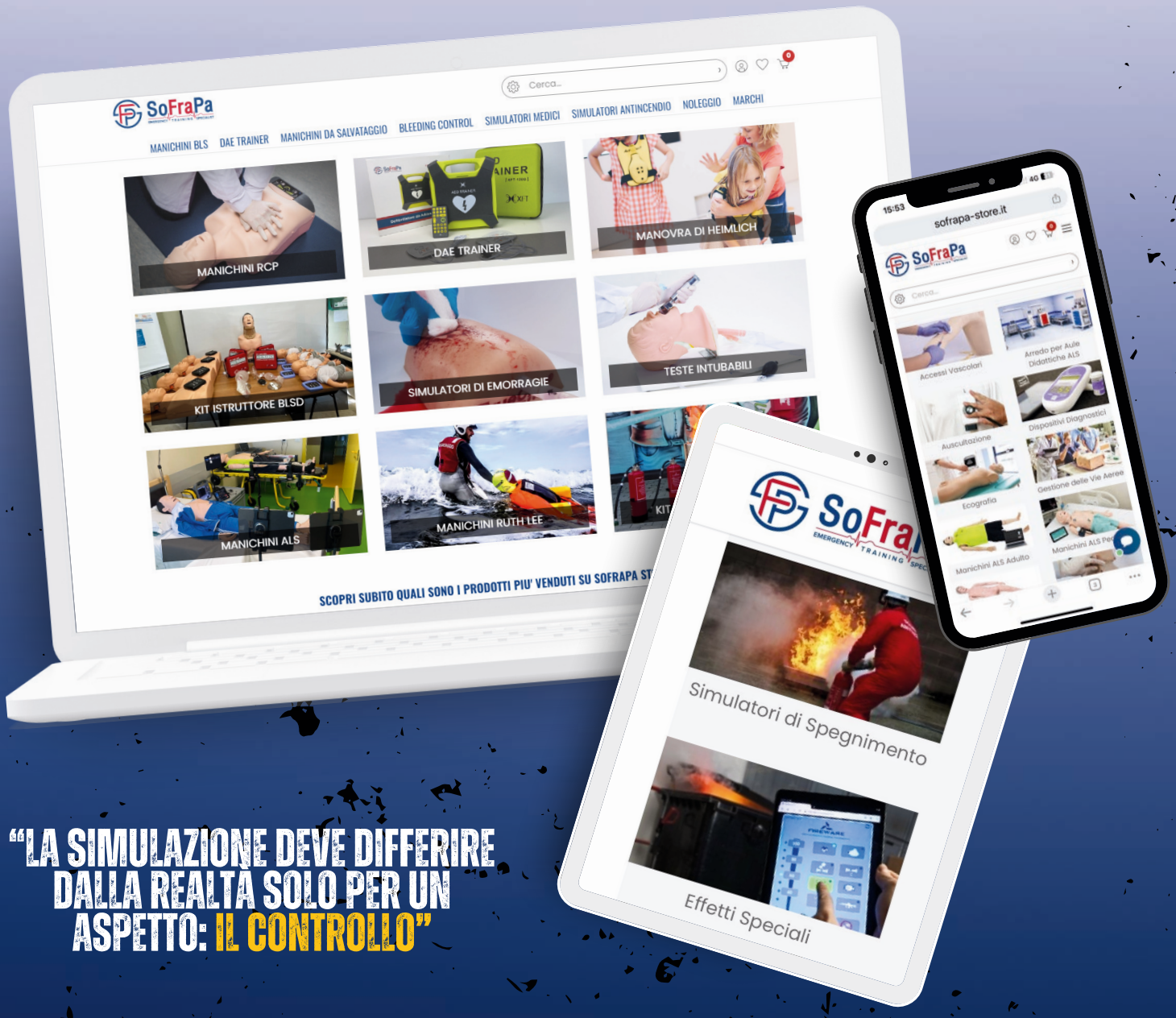
DOMANDA	5	4	3	2	1
Valutazione del coinvolgimento nello scenario	69,2	23,1	7,7	0	0
Valutazione dell'efficacia formativa del paziente simulato pediatrico	91,0	4,5	4,5	0	0
Utilità del feedback fornito dal paziente simulato pediatrico	57,1	33,3	9,6	0	0

Bibliografia
Elenco completo dei riferimenti nell' articolo web

SoFraPa
EMERGENCY TRAINING SPECIALIST

WWW.SOFRAPA-STORE.IT

Il primo e unico e-commerce in Italia interamente dedicato alla fornitura di Simulatori Medici e Materiale didattico per la Formazione al Primo Soccorso, al Soccorso Tecnico, alla Sicurezza sul Lavoro ed alla gestione dell'Emergenza Medica.



"LA SIMULAZIONE DEVE DIFFERIRE DALLA REALTÀ SOLO PER UN ASPETTO: IL CONTROLLO"

0550982192 info@sofrapa.it www.sofrapa-store.it

SEGUICI SUI SOCIAL - @sofrapa_store_2020

Read in your language

DID YOU KNOW...

Simulation-Based Education in Brazil: challenges and triumphs

Dario Cecilio-Fernandes
Institute of Medical Education Research Rotterdam, Erasmus MC University Medical Centre Rotterdam, Rotterdam, The Netherlands
d.fernandes@erasmusmc.nl

https://doi.org/10.69079/SIMZINE.B25.N19.00062

Since 2000, Brazil has transformed healthcare training through simulation-based education, embracing evidence-based practices despite challenges. Educators are increasingly participating in conferences and publishing research, marking a shift toward advanced studies and greater international recognition in medical education.

Simulation-based education (SBE) has changed the face of health professions education. Although SBE was initially implemented in the Global North, the adoption spread throughout Latin America, including Brazil, at the beginning of 2000. In the last 10 years, SBE has become a popular training method in Brazil. Nowadays, probably every medical school (and other courses also have their simulation centre) has a simulation centre that may differ in equipment quantity and size. This implementation of SBE has primarily happened in undergraduate training, which slightly differs from Global North. The reason is that health care professions are allowed to practice after completing undergraduate training, and often they work in emergency rooms or primary care. This led to the necessity of training complex skills such as advanced life support and orotracheal intubation, which mastery of these skills has a direct influence on patient care and safety.

The implementation of the best evidence

Surprisingly, the implementation of SBE in Brazil has always focused on the best evidence available. Several simulation centres have changed their practice according to current literature, such as implementing a rapid cycle of deliberate practice and mastery learning approach. This is also observed in the different conferences in Brazil. Health professions educators are more interested in learning new instructional methods and debriefing techniques and how they can be implemented in their daily practice. Conferences have helped disseminate the current practice since articles are often behind a paywall and are written in English. This is further supported by the increased number of attendees, as evidenced by the last Simulation User Network (SUN) with almost 500 attendees.

The effect of scientific inputs and outputs

Congress and conferences were critical in disseminating SBE to educators and stakeholders. I had the opportunity to give the first keynote lecture to the Brazilian Association of Health Simulation Congress in 2016. This event was a turning point in the simulation community in Brazil. After this first successful event with around 80 people around Brazil, several conferences have happened, and more participants have joined our community each year. Another significant milestone was the publication of the first special number on simulation in Scientia Medica, a Brazilian journal. Carolina Brandão and I had the pleasure of being the guest editors. Witnessing the growth of SBE research in Brazil is a great privilege. We moved from 2 published articles in 2002 to 27 in 2021 in journals indexed in Web of Science (Cecilio-Fernandes et al. 2024). Noteworthy, most articles are still published in international Brazilian journals instead of international journals based on Global North. This increase comes from overcoming significant challenges, such as barriers in language, lack of research training in health professions education, and lack of time and funding for research. Most research has focused on the perception of satisfaction, and knowledge, skills, and self-efficacy growth. Currently, research in Brazil has shifted to research focusing on experiments comparing two or more groups with different interventions, reviews and translational research.

Overcoming barriers to high-quality research

Most researchers in Brazil were trained in a different field from education. This transition is often full of challenges, ranging from writing to using the appropriate research method to answer the specific research question. Some courses are offered at conferences, but they are often too short. Other initiatives have been linked to research programmes but may be time-consuming. Ideally, researchers who would like to start a new research line in health professions education could try to find a mentor to help them navigate the literature and find a relevant research question for an international audience. Another crucial aspect is the writing of the paper. You may have the best research question and methods, but writing determines getting to international journals. As in any other field, there is a specific culture for writing in health professionals' education research, and journal styles are pretty different. More importantly, the translation from Portuguese to English is often not precise because of grammatical and structural differences. Learning the structure is key to getting published in international journals. As all educators know, practice combined with feedback will lead to expertise. This is, of course, not an easy road, but everyone can achieve it.

References

[Cecilio-Fernandes, D., Peccin, M. S., Sandars, J., Couto, T. B., & Mazzo, A. (2023). Advancing Simulation-Based Education in Brazil: Bridging Research and Practice for Healthcare Excellence. einstein (São Paulo), 21(Suppl 3), eEDS3.]

SIMPEOPLE

Willem van Meurs

The dolls' engineer

A personal journey through three decades of medical simulation

THE SIMZINE LIBRARY

get your copy on simzine.news

Read in your language

DID YOU KNOW...

Simulazione in Ostetricia: oltre la tecnica, al centro la persona

https://doi.org/10.69079/SIMZINE.B25.N19.00063

Presso il Corso di Laurea in Ostetricia dell'Università di Milano Sez di Mantova, la simulazione sta cambiando la formazione delle future ostetriche. Grazie all'arrivo di un simulatore a corpo intero e altamente tecnologico, gli studenti possono adesso esercitarsi in ambienti sicuri e realistici, sperimentando il parto in posizioni alternative e gestendo emergenze ostetriche. Questo approccio non solo garantisce una preparazione tecnica ma anche empatica, permettendo di rispettare i bisogni delle donne durante il parto. Innovazione e sicurezza si uniscono per formare professionisti di qualità.

"Ho imparato che le persone possono dimenticare ciò che hai detto, le persone possono dimenticare ciò che hai fatto, ma le persone non dimenticheranno mai come le hai fatte sentire."

Maya Angelou

Questa celebre frase di Maya Angelou coglie un principio fondamentale applicabile non solo alla vita quotidiana ma anche all'ambito della formazione professionale, inclusa quella sanitaria. La capacità di creare un ambiente di apprendimento sicuro ed empatico è essenziale, specialmente per gli studenti delle professioni sanitarie. L'obiettivo non è solo insegnare competenze tecniche, ma anche promuovere sicurezza, fiducia e consapevolezza professionale.

Già nel XIII secolo, Madame Du Coudray, una pioniera dell'ostetricia, concepì uno dei primi simulatori per l'insegnamento dell'arte ostetrica. Il suo modello, chiamato "La Machine", permetteva alle ostetriche di esercitarsi in un ambiente protetto e sicuro. Questa intuizione, straordinariamente innovativa per l'epoca, dimostra come l'esigenza di simulare la pratica clinica sia sempre stata al centro della formazione ostetrica. Oggi, nel XXI secolo, questa necessità è più che mai attuale, grazie anche all'avvento di tecnologie avanzate che rendono la simulazione un elemento cardine della didattica.

La Formazione in Ostetricia: Tra Pratica e Innovazione

La formazione di base delle future ostetriche ha come obiettivo la preparazione a gestire sia il parto fisiologico sia quello patologico. In Italia, il percorso di laurea in Ostetricia è caratterizzato da un rigoroso sistema di valutazione delle competenze. Tale valutazione avviene principalmente in due momenti fondamentali: gli esami di tirocinio, strutturati secondo il modello OSCE (Objective Structured Clinical Examination), e l'esame di Stato abilitante. Durante il triennio di formazione, gli studenti devono completare un totale di 2040 ore di tirocinio sul campo, un requisito che non solo permette loro di mettere in pratica quanto appreso, ma anche di sperimentarsi come professionisti in un contesto reale. Inoltre, per accedere all'esame di Stato, ogni studente deve aver assistito autonomamente ad almeno 40 parti. Questi requisiti garantiscono una solida base esperienziale, fondamentale per affrontare le sfide della professione.

Tuttavia, l'esperienza pratica sul campo non è sempre sufficiente a coprire tutte le possibili situazioni cliniche. Per questo motivo, negli ultimi anni si è posta maggiore enfasi sulla necessità di integrare momenti di apprendimento in ambienti protetti. La simulazione rappresenta uno strumento indispensabile per offrire agli studenti la possibilità di esercitarsi in condizioni controllate, migliorando la sicurezza delle prestazioni e la qualità dell'assistenza erogata.

L'importanza della simulazione nella formazione

Presso il Corso di Laurea in Ostetricia dell'Università degli Studi di Milano – Sezione di Mantova, l'introduzione del simulatore Noelle

(S574.100 Gaumard), un manichino a corpo intero altamente tecnologico, ha segnato un punto di svolta nella didattica. Grazie a questo simulatore e alla successiva creazione di una cabina di regia per il monitoraggio delle sessioni, è stato possibile sviluppare un percorso formativo basato sull'apprendimento in ambiente protetto.

Noelle consente di riprodurre con grande realismo diverse situazioni cliniche, tra cui la gestione delle emergenze ostetriche e il parto in posizioni alternative. Questo approccio innovativo ha permesso di ampliare le opportunità di apprendimento per gli studenti, che possono acquisire competenze pratiche senza il rischio di compromettere la sicurezza dei pazienti.

Parto in posizioni alternative: un progetto formativo innovativo

Uno degli aspetti più interessanti introdotti grazie a Noelle è il progetto formativo che prevede l'assistenza al parto in posizioni alternative, come quella a carponi o sul fianco. Tradizionalmente, il parto viene gestito in posizione litotomica, ovvero con la donna sdraiata sulla schiena e le gambe sollevate. Tuttavia, numerosi studi evidenziano che il rispetto delle preferenze della partoriente è cruciale per garantire un'esperienza positiva e sicura.

La letteratura scientifica supporta infatti l'importanza di lasciare che la donna assuma la posizione che trova più confortevole durante il parto. Questo approccio non solo facilita il processo fisiologico, ma riduce anche il rischio di complicanze e migliora la soddisfazione della paziente. Tuttavia, per poter assistere un parto in posizioni alternative, è necessario che l'ostetrica abbia una profonda conoscenza dell'anatomia del bacino, del perineo e delle manovre appropriate per il disimpegno delle spalle.

Grazie alla nostra Noelle, è stato possibile creare scenari realistici in cui gli studenti possono esercitarsi nell'assistenza al parto in diverse posizioni. Questo tipo di simulazione permette di sviluppare la manualità necessaria e di acquisire sicurezza nelle tecniche richieste, senza la pressione legata alla presenza di una paziente reale.

Vantaggi della simulazione per la formazione delle future ostetriche

L'utilizzo della simulazione offre numerosi vantaggi nella formazione delle future ostetriche. Innanzitutto, consente di creare un ambiente di apprendimento privo di rischi per i pazienti, in cui gli studenti possono commettere errori e imparare da essi senza conseguenze negative. Questo

approccio è particolarmente utile per affrontare situazioni cliniche complesse, come le emergenze ostetriche, che richiedono interventi rapidi e precisi.

Inoltre, la simulazione promuove l'apprendimento attivo, stimolando gli studenti a riflettere sulle proprie azioni e a migliorare le proprie competenze. Le sessioni di simulazione possono essere registrate e analizzate durante i debriefing, offrendo un'opportunità unica di apprendimento basato sull'esperienza diretta.

Un altro aspetto importante è la possibilità di standardizzare la formazione. Grazie ai simulatori, è possibile garantire che tutti gli studenti abbiano l'opportunità di esercitarsi su un'ampia gamma di scenari clinici, indipendentemente dalle opportunità offerte dal tirocinio sul campo. Ciò è particolarmente rilevante in un contesto come quello italiano, dove l'accesso a certe esperienze cliniche può variare significativamente tra le diverse strutture sanitarie.

Un futuro basato sull'innovazione e sull'empatia

La simulazione non è solo uno strumento didattico, ma un mezzo per promuovere un approccio centrato sulla persona. Formare ostetriche capaci di adattarsi alle esigenze delle donne durante il parto significa garantire un'assistenza non solo efficace, ma anche rispettosa ed empatica.

Come sottolineato da Maya Angelou, le persone non dimenticano come le fai sentire. Questo principio vale anche per le donne che vivono l'esperienza del parto. Grazie alla simulazione, le future ostetriche possono sviluppare le competenze necessarie per offrire un'assistenza che rispetti la fisiologia del parto e, al contempo, risponda alle aspettative e ai bisogni emotivi delle pazienti.

In un mondo in cui la tecnologia gioca un ruolo sempre più centrale, l'introduzione di strumenti di simulazione come Noelle rappresenta un passo avanti verso una formazione sanitaria di qualità. Il futuro dell'ostetricia è nelle mani di professionisti che, grazie alla simulazione, potranno garantire un'assistenza sicura, competente ed empatica, assicurandosi che ogni donna ricordi non solo cosa è stato fatto, ma soprattutto come si è sentita durante uno dei momenti più importanti della sua vita.

SIM GEEK

Jiri Travenec
Simulation Centre, Faculty of Medicine, Masaryk University, Brno, Czech Republic
travenec@med.muni.cz

Anatomically accurate 3D models for simulation centers

https://doi.org/10.69079/SIMZINE.B25.N19.00069

The development of anatomically accurate 3D models is an important component of healthcare simulation. At SIMU in Brno, collaboration with leading European universities led to the ACCEDE project, which refined techniques like CT segmentation, 3D scanning, and silicone molding. The project created realistic teaching tools through a structured five-stage pipeline. These efforts have culminated in a web portal for sharing 3D anatomical models, fostering innovation in education and simulation. Learn more and explore the shared resources at project webpage.

"Start at the top and work your way up" is one of Peter's Laws that regularly sounds in my head. However, in the case of 3D printing at our simulation centre in Brno, SIMU, we felt this would not be the case. We started from the ground up and after about a year of printing holders, stands and small spare parts for simulators and trainers we felt we wanted to take our knowledge and skills significantly further. We wanted to learn how to print models based on real medical data: anatomically accurate models. And it was clear to us that we could not tackle something like this alone.

Cold winter, warm tea and lots of thoughts in our heads. We started looking for partners who would like to be part of our bold journey. Associate Professor Pavol Vitovič from Comenius University Bratislava and Marc Lazarovici from Ludwig Maximilian University of Munich accepted our invitation to join the project consortium. Thus, the Anatomically aCCuratE 3D modEls (ACCEDE) grant application was born. A call that was subsequently supported and thanks to which we learned the procedures that this article presents.

The goal of our efforts was to learn how to create accurate 3D models of anatomical structures based on medical data. To develop this knowledge, we organized collaborative internal workshops during the year 2023. The three-day workshops were attended by approximately 15 technicians from the three participating universities and were held successively in Brno, Bratislava and Munich. Our face-to-face meetings resulted in the exchange of experiences, skills, trialing new technologies and, most importantly, agreeing on a common course of action.

The comprehensive pipeline for developing anatomical 3d models

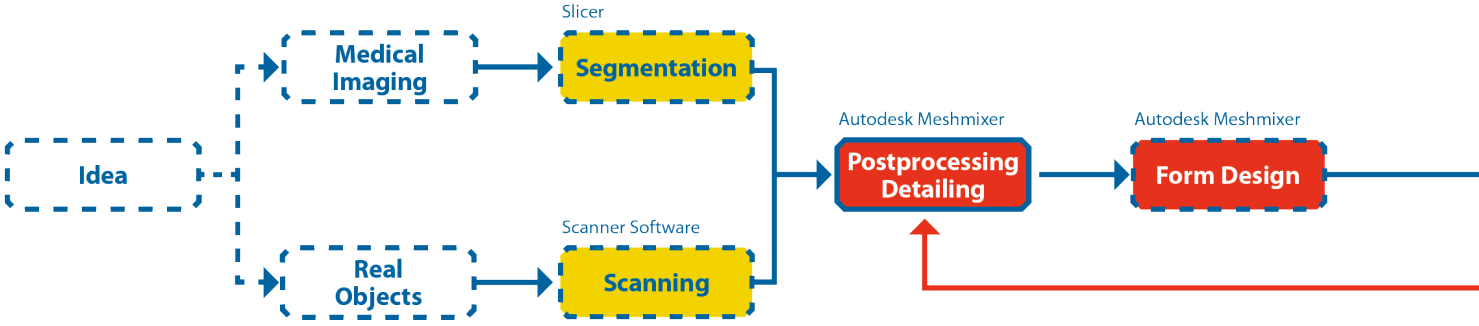
At the beginning of the project, we assumed that the main source of anatomically accurate data would be medical imaging, such as computer tomography (CT). However, during the course of the implementation, we discovered the magic of 3D scanning, which is a convenient way to obtain very accurate 3D models from objects that are tangibly available in our hands.

We also extended our 3D model-making efforts during the course of the project by creating products using silicone moulding. The reason for this step is obvious: silicone moulding is a technique to create soft models. It is the most common technique for creating teaching equipment and trainers in the healthcare simulation.

And this has already given rise to a rather complex process we call the pipeline. The creation of each 3D model goes through some specific states. Each individual state involves different people, different technologies, and the end result takes a different form.

In a simplified way, it could be described in 5 stages:

1. Obtaining raw data
2. Processing the data
3. Printing and fabrication
4. Verification of the product
5. Publication and utilization



The 5-Step process for accurate 3D model creation

1 OBTAINING RAW DATA

During the project, we used several techniques to obtain the raw data for the 3D model. The most common approach is CT segmentation. It is a process of handling radiological images and by separating individual contrast segments, 3D models are sculpted. It is the most widely used procedure in clinical medicine. This technique can be used to obtain models of many anatomical structures, both normal and pathological. However, a major limitation is the contrast of the anatomical structures and also the accuracy of CT. The accuracy of most conventional CT scans is around a voxel size of 1 mm. Scans with accuracy higher than 1 mm are the exception or rather the specificity of selected examinations in routine practice. A voxel of 1 mm, unfortunately, is a relatively low accuracy, if you will, resolution and thus fidelity level for printed objects. The resulting models therefore suffer from some form of minor distortion and, for example, small structures are almost impossible to model from CT without the use of specialized medical software trained to do so.
However, what may prove to be a real constraint is access to such medical data concerning legislation and the protection of medical records. This is a topic that must not be neglected. Data needs to be processed anonymized and properly protected.
A second possible approach to obtain raw data is to use a 3D scanner. In this case, you are not being dependent on a radiology department, but rather a university anatomy department. The latter can often provide a large number of anatomical structures to be examined and subsequently scanned. The scanning process is particularly suitable for solid anatomical structures such as bones, but the more adventurous can certainly try others.
The scanners are characterized by very high accuracy. The one we used at SIMU can work with an accuracy of 0.05 mm. That seems to be 20 times more accurate than the average CT scanner. But remember, we're operating in 3D space, so the accuracy is on average 8000 times higher than CT. The scanning process itself is, then, relatively simple thanks to the supplied specialized software. The object is placed on the scanning platter, which automatically rotates and the technician only has to intervene when positioning the model to the next scanning position. Additional guide dots or anti-reflective spray can be used to increase scanning accuracy.

2 PROCESSING THE DATA

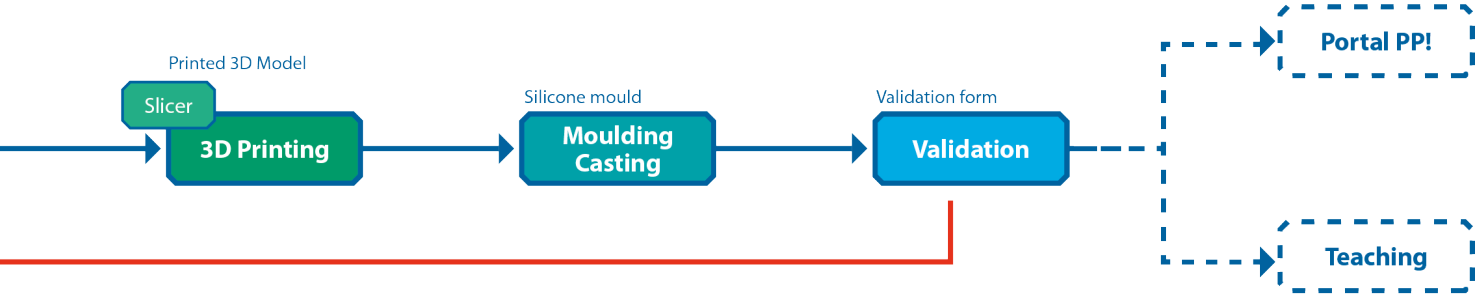
The data obtained by segmentation and scanning are only rough input data. Each method faces specific artefacts that need to be resolved during post-processing.
Typical for segmentation are bubble anomalies in structures, voids in the middle of models that need to be removed for easier printing, and other inaccuracies that are removed using simple and classical tools and techniques.
Most of the artefacts that arise during scanning are removed by the technician using the specialized scanning software straight during the scanning of individual surfaces, or even by the software itself using automatic corrections. The 3D scanner produces a very accurate model, even with texture, but this sometimes requires additional tweaks. A typical example would be the elimination of auxiliary scan dots that have been used to increase the level of scanning accuracy.

3 PRINTING AND FABRICATION

3D printing is probably the most exciting part of the whole process, but counter-intuitively the easiest. Leaving aside the potential technical issues that can arise when 3D printing, the whole process consists of uploading the data to a USB drive, inserting it into the printer and pressing the print button. For the next..

4 VERIFICATION OF THE PRODUCTTION

5 PUBLICATION AND UTILIZATION



Overcoming Peer Intimidation in Research Culture

Intimidation in research threatens academic integrity and innovation. Fostering psychological safety, mentorship, and constructive feedback can enhance collaboration, ensuring a more inclusive and progressive scientific landscape.

Essential to the dissemination of knowledge and the advancement of science, academic publishing serves as a landmark of scientific progress, which for healthcare simulation propels evidence-based practice, allowing researchers and educators to explore literature, share findings, advance knowledge, and contribute to their profession. While the process does have its challenges, one major issue that has piqued the interest of other professionals is peer intimidation, which might impact psychological safety among researchers or avert newer researchers from flourishing. Perceived or flagrant intimidation also threatens the integrity of the publication process.

Peer intimidation may manifest itself in various forms, from dismissive attitudes to harsh critiques to more subtle pressures to conform to prevailing paradigms. Such behaviors can stifle innovation, discourage open discourse, and ultimately hinder the advancement of science.

The Impact of Intimidation in Research

Psychological safety in academia (and other education related organizations) cannot be over emphasized. When a lack of safety is present in the science of research, collaboration is reduced considerably, self-censorship may occur, and the quality of research declines. (Fiske, 2015.) Conversely, when researchers feel safe to express their ideas and findings without ridicule or retaliation, they are highly likely to engage and produce more creative and groundbreaking work.

The purpose of this article is to shine light on how academia, professional development, and other organizations can potentially foster an inclusive and collaborative environment which is essential to maintaining integrity of the scientific process and ensuring that it can be a stress free, collaborative and open endeavor.

Strategies to Foster Psychological Safety

Addressing peer intimidation and fostering psychological safety requires a collaborative approach. Encouraging a culture where diverse perspectives are valued not only enhances the quality of research but also strengthens the resilience of academic communities. Further encouraging well-being means individuals must actively set aside tendencies of personal distrust, micromanagement, or overly controlling behaviors, which reduce morale, stifle creativity, and hinder collaborative progress. Research reveals that micromanagement and distrust can lead to high levels of stress and diminished psychological well-being among teams (Edmondson & Lei, 2014). Institutions can benefit from adopting comprehensive strategies that prioritize inclusivity, constructive feedback, and mentorship.

Key initiatives to counteract peer intimidation include structured mentorship programs, professional development (INACSL, 2021) which offer support and constructive advice. Additionally, training sessions focused on respectful peer review practices can educate individuals on the importance of balanced, objective critiques that advance rather than hinder scientific inquiry.

Mentoring (and often coaching) are pivotal. Mentors provide insights into constructive critique, helping mentees interpret feedback objectively and view criticism as a learning tool rather than a personal affront (Smith et al., 2019). Experienced coaching aids in development of coping strategies, encouraging researchers to approach reviews with confidence and assertiveness, which can mitigate intimidation from reviewers (Wiley et al., 2017). Furthermore, supportive mentorship creates a culture of mutual respect and collaboration, which diminishes hierarchical power...

References

Edmondson, A. C., & Lei, Z. (2014). Psychological safety: The history, renaissance, and future of an interpersonal construct. Annual Review of Organizational Psychology and Organizational Behavior, 1(1), 23-43. [...]

Find the complete list of references on the web article.

SIMX

READY TO GET REAL WITH VR?

LEARNER FOCUSED

- View critical action timeline
- Review performance
- Record and playback
- Pre and post briefing

IMMERSIVE

- Interactive tools/equipment
- No dropdown menus
- Realistic Enviroments

FLEXIBLE

- 4+ multiplayer
- Set up in 5 min
- IPE and multidisciplinary
- Custom scenario packages to meet unique needs

simxvr.com

SIMZINE

Between TWO Simulators

Zero filters, only raw SIM talks!

CONVERSATIONS FROM ALL OVER THE WORLD