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SHORT COMUNICATION

Clinical simulation in the Argentine context: student perception and educational challenges

Simulación clínica en el contexto argentino: percepción estudiantil y desafíos educativos

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ABSTRACT

The research addressed the use of clinical simulation as an educational strategy for medical students at the Universidad Abierta Interamericana (UAI), in an Argentine context characterized by structural challenges in health and education. Since the reports of the Institute of Medicine (IOM) in 1999 and 2001, simulation has been promoted as a key tool for reducing medical errors and improving the quality of care. This descriptive cross-sectional study set out to identify areas for improvement in the implementation of clinical simulation, through surveys conducted with final-year students who had completed their rotating internship by March 2024.

The results showed an overall positive assessment of clinical simulation, highlighting its effectiveness for skills development and its realism. However, opportunities for improvement were also identified. Fifty-one percent of the students pointed out deficiencies in curricular integration and in the measurement of results. In addition, 61 % expressed the need for more time to master competencies, and 47 % negatively evaluated team training. Instructor training and the educational context were rated as acceptable but perfectible.

It was concluded that, although clinical simulation has been a valued training tool at the UAI, its impact could be optimized through structural adjustments in curriculum design, teacher training and the duration of internships. In the current Argentinean context, where educational inequalities are palpable, simulation is presented as a strategic resource for training competent doctors committed to patient safety.

Keywords: Clinical Simulation; Medical Education; Patient Safety; University Education; Educational Evaluation.

RESUMEN

La investigación abordó el uso de la simulación clínica como estrategia educativa en estudiantes de medicina de la Universidad Abierta Interamericana (UAI), en un contexto argentino caracterizado por desafíos estructurales en salud y educación. Desde los reportes del Institute of Medicine (IOM) en 1999 y 2001, la simulación ha sido promovida como herramienta clave para reducir errores médicos y mejorar la calidad asistencial. Este estudio transversal descriptivo se propuso identificar áreas de mejora en la implementación de simulación clínica, mediante encuestas realizadas a estudiantes del último año que hubieran cursado el internado rotatorio hasta marzo de 2024.

Los resultados evidenciaron una valoración positiva general de la simulación clínica, destacando su eficacia para el desarrollo de habilidades y su realismo. Sin embargo, también se identificaron oportunidades de mejora. Un 51 % de los estudiantes señaló deficiencias en la integración curricular y en la medición de resultados. Además, el 61 % expresó necesitar más tiempo para dominar competencias, y un 47 % evaluó

negativamente el entrenamiento en equipo. La formación de instructores y el contexto educativo fueron calificados como aceptables pero perfectibles.
Se concluyó que, aunque la simulación clínica ha sido una herramienta formativa valorada en la UAI, su impacto podría optimizarse mediante ajustes estructurales en el diseño curricular, la capacitación docente y la duración de las prácticas. En el marco argentino actual, donde las desigualdades educativas son palpables, la simulación se presenta como un recurso estratégico para formar médicos competentes y comprometidos con la seguridad del paciente.

Palabras clave: Simulación Clínica; Educación Médica; Seguridad del Paciente; Formación Universitaria; Evaluación Educativa.

BACKGROUND

In 1999, The Institute of Medicine (IOM) published its first report entitled "To Err is Human: Building a Safer Health System," concluding that billions of Americans die each year from medical errors associated with care, hundreds of thousands suffer or barely escape with non-fatal injuries, which could be prevented in a high-quality health system.[1,2,3,4] Since that 1999 report, which explicitly promoted the prevention of medical errors through a high-quality health system, the IOM's 2001 report "Crossing the Quality Chasm: A New Health System for the 21st Century" established six goals for a high-quality healthcare system, which, to be met, had to promote a change in medical education based on low-, medium-, and high-fidelity clinical simulation to alert future physicians early on to errors during the acquisition of the skills necessary for medical practice that meets these established goals.[1,3,5,6]

Medical simulation addresses the need to balance skill development with patient safety, mitigating ethical tension by promoting learning without unnecessary risk to the patient.[2,4,7] The integration of simulation into medical training has been highlighted as an effective strategy for closing the gap between theory and clinical practice, demonstrating improvements in students' knowledge, skills, and performance, and even a change in patient perception.[8,9,10] Although challenges remain, such as curriculum integration and documentation of effectiveness, research has demonstrated the benefits of simulation in teaching key medical competencies.[7,11,12] Effective analyses reveal the importance of simulation technology and its ability to improve teaching and skills assessment.[8,13] In addition, studies have demonstrated the effectiveness of simulation in teaching basic sciences, clinical knowledge, and procedural skills, as well as its usefulness in assessing learners.[14,15,16] The formative assessment approach offers a valuable tool for fostering reflection and deep learning in simulation contexts and indirect patient interactions.[16,17] Despite the challenges, the drive toward patient safety and the expansion of simulation in medical education reinforces the ethical commitment to prioritizing patient well-being.[18,19] Evidence-based medical simulation is a vital tool for strengthening medical education and ensuring the competence and safety of future health professionals.[12,20] This study aims to identify areas for improvement in learning medical skills in clinical simulation within the UAI, enhancing it through feedback from students trained at the institution.

This is a descriptive cross-sectional study. We selected UAI students who had completed the rotating internship by March 24, 2024, and used the following inclusion and exclusion criteria. Final-year medical students at the UAI who had participated in at least one clinical simulation session during their training, with informed consent and the ability to complete surveys, were included. Students from other years who had no experience with clinical simulation or had difficulties participating were excluded. The study setting was exclusively university-based. Data were collected using surveys designed according to the 12 sections of McGaghie,[7] with Likert scale responses from A to E.

The total sample consisted of 57 students who participated at least once in the UAI simulators. The gender distribution was 33 % male and 67 % female. Fifty-seven percent had previous experience in a health center outside the UAI, while the remaining 43 % did not. One hundred percent of the students participated at least once in the simulators.

Regarding McGaghie's 12 sections, 49 % of students believe the experience was positive, but the feedback could have been more detailed. Fifty-three percent rated the practice as adequate. Fifty-one percent consider better curricular integration necessary, and the same percentage identifies flaws in measuring results. Fifty-four percent rated the simulations as sufficient and realistic. Seventy-five percent consider simulation effective for acquiring skills. Sixty-one percent indicated that they need more time to master the skills. Sixty-three percent believe transferring skills to real clinical practice is acceptable, although it could be improved. Forty-seven percent rated team training negatively. Seventy-nine percent considered the evaluations adequate. Sixty-seven percent consider the training of instructors acceptable but perfectible. Sixty percent indicated that the overall educational context could be improved.

These results show that clinical simulation is an effective tool in the UAI, particularly valued for its

realism and usefulness in developing clinical skills. However, opportunities for improvement were identified in curriculum integration, assessment methods, session duration, skills transfer, teamwork, and teacher training. These aspects should be addressed to optimize the educational experience and maximize the benefits of simulation in medical education.

The Argentine context 2024 presents a scenario in which clinical simulation is becoming increasingly relevant. Educational reforms and technological advances in private institutions such as the UAI have begun fostering learning environments prioritizing patient safety and meaningful learning. However, resources are still limited in many universities, and disparities between institutions create gaps in clinical training. The study's findings are significant: standardizing simulation, strengthening teacher training, and systematizing performance evaluation are critical steps toward quality medical education. In Argentina, where the healthcare system faces numerous structural challenges, training safe, ethical, and competent professionals represents an institutional commitment and a social responsibility. Thus, clinical simulation should not be considered an optional resource but a strategic necessity for a more just, efficient, and humane healthcare system.

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CONFLICT OF INTEREST

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