

Chapter 16

Telesimulation and Academic Continuity of Health Professions Education

Víctor D. Mendoza Ochoa

Escuela de Medicina y Ciencias de la Salud, Tecnológico de Monterrey, Mexico

Cesar O. Lopez Romero

Escuela de Medicina y Ciencias de la Salud, Tecnológico de Monterrey, Mexico

Elena Rios Barrientos

Escuela de Medicina y Ciencias de la Salud, Tecnológico de Monterrey, Mexico

ABSTRACT

Telesimulation, specifically in health areas, is an educational technique that combines clinical simulation and communication technologies. This definition has been constantly modified, but today more than ever it represents a valuable resource to provide academic continuity. The purpose of this chapter is to present the basic concepts of this strategy while reviewing its antecedents/history in the pre-COVID era, the experience with this technique in health sciences, as well as the processes and resources essential to carry it out with an analysis of the potential limitations that may entail. Likewise, concrete examples of telesimulation in various subjects will be shared, leaving readers the challenge of constant innovation in this field.

INTRODUCTION

The term telesimulation has historically changed and been shaped along with technological advances. However, and despite the differences cited by various authors, its essence is based on the combined use of simulation and communication technologies to provide distance education. It is used in many areas of professional training and health sciences are not the exception, specifically employing clinical simulation.

DOI: 10.4018/978-1-7998-8783-6.ch016

Several universities, simulation centers and even hospitals have acquired a lot of experience in this educational technique, through time and with the diversity of resources that each user has, can provide teaching despite certain adverse situations such as the current COVID-19 pandemic.

Virtual teaching spaces have certain general characteristics, however this chapter will talk about specific processes and resources that must be taken into account to achieve a useful telesimulation.

The objectives of the chapter are to show to the reader the historical experience of telesimulation in health sciences, how it has modified its definition and how to distinguish it from other concepts, its processes and essential resources, when it is advisable to use it and share some examples that the authors have been carried out in our educational institution.

BACKGROUND

Defining Telesimulation

The term telesimulation has historically changed and been shaped along with advances in simulation, communication technologies, and educational techniques, until it is embodied in the way we define it now. Several authors related to the area of health simulation, gave their definition of telesimulation influenced to a large extent by the technology available at the time. In this way, we can list some of the most representative authors who have worked with telesimulation and see the way they understood this concept.

1. von Lubitz et al. (2003, p. 379) gave the name of “Simulation-based distance training” to describe a distance training process (USA, France and Italy) using two SimMan Human Patient Simulators and to the communications hub at the MedSMART facility in Ann Arbor. “It proved to be a highly effective tool in improving emergency medical skills of junior physician trainees and, despite initial reservations, neither distance nor language and cultural differences posed significant obstacles.” (von Lubitz et al., 2003, p. 384).
2. Okrainec et al. (2010) commented in their study using telesimulation to determine its effectiveness for teaching Fundamentals of Laparoscopy Surgery (FLS) skills in Botswana, Africa that “Telesimulation uses the internet to link simulators between an instructor and a trainee in different locations. Using two simulators, multiple computers, a series of webcams, and basic video conferencing software, the instructor and trainee can speak to each other and see themselves as well as see the simulation training that is occurring in each other’s FLS simulator”. (Okrainec et al., 2010, p. 418).
3. Mikrogianakis et al. (2011) defined telesimulation similar to Okrainec et al, while describing the use of telesimulation as an effective tool for teaching intraosseous insertion techniques between Toronto, Canada and Gaborone, Botswana.
4. Hayden et al. (2012) understood telesimulation as a tool that uses “Web-conferenced (WC) instruction, where the debriefing instructor of a cognitive or team-training scenario is remote from the actual simulation but can give real-time feedback and discussion on the performance of a group of simulation participants.”(Hayden et al.,2012, p. 525). Using telesimulation, they compared the impact of simulation sessions facilitated by in-person faculty versus those supervised remotely using Web-conferencing software.

16 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/telesimulation-and-academic-continuity-of-health-professions-education/293544

Related Content

Real-Time Pill Detection and Recognition Framework Based on a Deep Learning Algorithm

Prabu S. and Joseph Abraham Sundar K. (2022). *Advancement, Opportunities, and Practices in Telehealth Technology* (pp. 117-137).

www.irma-international.org/chapter/real-time-pill-detection-and-recognition-framework-based-on-a-deep-learning-algorithm/312086

Opportunities and Applications of Blockchain for Empowering Tele-Healthcare

Inderpreet Kaur, Renu Mishra, Mamta Narwaria and Sandeep Saxena (2023). *Advancements in Bio-Medical Image Processing and Authentication in Telemedicine* (pp. 111-126).

www.irma-international.org/chapter/opportunities-applications-blockchain-empowering-tele/319221

Telemedicine: A Bridge to Unprivileged Populations

Luis F. Herrera, Belinda del Carmen Carrion, Andrea Figueroa, Jesseyfer Guzmán, Salma Helena Armendariz de la Fuente, Jesus Garcia and Maria J. Muñoz (2022). *Advancing Health Education With Telemedicine* (pp. 1-22).

www.irma-international.org/chapter/telemedicine/293528

A Cloud-Based Smartphone Solution for Transmitting Bio-Signals From an Emergency Response Vehicle

Adwitiya Mukhopadhyay, Sidharth Sreekumar, Bobin Xavier and Suraj M (2021). *Research Anthology on Telemedicine Efficacy, Adoption, and Impact on Healthcare Delivery* (pp. 429-446).

www.irma-international.org/chapter/a-cloud-based-smartphone-solution-for-transmitting-bio-signals-from-an-emergency-response-vehicle/273478

Prenatal Healthcare Framework Using IoMT Data Analytics

Rajiv Pandey, Agnivesh Pandey, Pratibha Maurya and Guru Dev Singh (2023). *The Internet of Medical Things (IoMT) and Telemedicine Frameworks and Applications* (pp. 76-104).

www.irma-international.org/chapter/prenatal-healthcare-framework-using-iomt-data-analytics/313070