

**Title:**

Integrative Review of Virtual Simulation in Nursing

**Hyunsook Shin, PhD**

*College of nursing science, Kyung Hee University, Seoul, Korea, Republic of (South)*

Hyojin Kim, MSN

*College of nursing science, Kyung Hee University, Seoul, Korea, Republic of (South)*

Da Hae Rim, MSN

*College of Nursing Science, Kyung Hee University, Seoul, Korea, Republic of (South)*

Sojeong Park, BA

*College of Nursing science, Kyung Hee University, Seoul, Korea, Republic of (South)*

**Session Title:**

Research Poster Session 3

**Slot (superslotted):**

RSC PST 3: Sunday, 30 July 2017: 9:45 AM-10:15 AM

**Slot (superslotted):**

RSC PST 3: Sunday, 30 July 2017: 12:00 PM-1:15 PM

**Slot (superslotted):**

RSC PST 3: Sunday, 30 July 2017: 2:00 PM-2:30 PM

**Abstract Describes:****Keywords:**

educational strategy, simulation design characteristics and virtual simulation

**References:**

Cobbett, S., & Snelgrove-Clarke, E.(2016). Virtual verses face-to-face clinical simulation in relation to student knowledge, anxiety, and self-confidence in maternal-newborn nursing: A randomized controlled trial. *Nurse Education Today*, 45, 179-184. <http://dx.doi.org/10.1016/j.nedt.2016.08.004> 0260-6917

Sweigart, L.I., Umoren, R.A., Scott, P.J., Carlton, K.H., Jones, J.A., Truman, B., and Gossett, E.J. (2016). Virtual TeamSTEPPS® Simulations Produce Teamwork Attitude Changes Among Health Professions Students. *Journal of Nursing Education*, 55(1), 31-35. doi:10.3928/01484834-20151214-08

Verkuyl, M., Atack, L., Mastrilli, P., and Romaniuk, D.(2016). Virtual gaming to develop students' pediatric nursing skills: A usability test. *Nurse Education Today*, 46, 81-85. <http://dx.doi.org/10.1016/j.nedt.2016.08.024> 0260-6917

**Abstract Summary:**

An integrative review of the simulation literature was conducted to identify effective characteristics of virtual simulation in nursing education and outcome indicators derived from the virtual simulation approaches.

**Learning Activity:**

LEARNING OBJECTIVES	EXPANDED CONTENT OUTLINE
The learner will be able to understand what evidence exists of effective characteristics of virtual simulation in nursing education.	The effective characteristics of virtual simulation derived from an integrative review

The learner will be able to understand the present outcome indicators of virtual nursing simulation.	The outcome indicators of virtual nursing simulation derived from an integrative review
The learner will be able to plan the effective virtual simulation design through the evidence from the literatures.	Effective design characteristics in virtual nursing simulation

**Abstract Text:**

**Purpose:** Presence of virtual reality allows nursing educators to design innovative educational platforms for the pre-service education as well as in-service education. An integrative review of the simulation literature was conducted to identify effective characteristics of virtual simulation for nursing education.

**Methods:** An integrative review was conducted from three major electronic databases: Ovid MEDLINE, PubMed and the Cumulative Index of Nursing and Allied Health Literature (CINAHL) using the keywords; patient simulation, computer-user interface or computer-user training, and virtual in English. The initial review of titles and abstracts produced 170 results. Out of the initial 170 articles retrieved, 85 articles, mostly intervention studies and a few descriptive studies were analyzed. The research questions focused on the characteristics of virtual simulation approaches including the virtual type, realism methods, participant representation and outcome indicators to suggest the effective virtual simulation design for nurse educators.

**Results:** The literature suggests the effective use of virtual simulation approaches that allow for multi-user interaction and more accessible training opportunities for learners. Most of the studies had incorporated virtual environments in different ways involving 2D images to augmented reality. Length of the virtual simulation and type of virtual platforms were greatly varied. Use of augmented reality or screen, use of commercial platforms such as Second Life or Unity 3D or newly developed, designed feedback system or not, presence of self as an avatar or use of script are identified as design characteristics of virtual simulation approaches. Constructive educational tradition was identified as major theoretical framework of virtual simulation through experiential learning or active learning. However, knowledge acquisition and clinical reasoning rather than clinical competency and clinical outcomes had been found as major outcome indicators of virtual simulation, which represented to be inferior for training outcomes in Kirkpatrick's model of training

**Conclusions:** Design characteristics for virtual simulation should be selected based on the evidence to support effective educational strategies. Effectively designed virtual simulation can lead to improvements in knowledge and clinical reasoning skills, but there is less evidence directly linking virtual simulation to improved performance and clinical outcomes.