



Nebraska Board of Nursing

ADVISORY OPINION

OPINION: 12/8/2022

ADOPTED:

REVISED:

REAFFIRMED:

Nebraska Board of Nursing

This Nebraska Board of Nursing advisory opinion is issued in accordance with the Nebraska Nurse Practice Act, Neb. Rev. Stat. 38-2216 (2). As such, this advisory opinion is for informational purposes only and is non-binding. The advisory opinions define acts, which in the opinion of the board, are or are not permitted in the practice of nursing.

Simulation in Nursing Education

National Council of State Boards of Nursing (NCSBN) began the National Simulation study in 2010 with the intent to provide guidance to Boards of Nursing on the regulation of simulation experiences. In 2015, utilizing the results from this study, as well as a survey of NCSBN's members and associate member Boards of Nursing, a simulation guideline for prelicensure nursing programs was published (Alexander, et.al., 2015). The article specifically states study findings include confidence that substituting up to 50% simulation for pre-licensure clinical experiences, per course, promotes outcomes similar to traditional clinical experiences as long as:

- Faculty are adequately trained, committed and in sufficient numbers
- There is a dedicated simulation lab with appropriate resources
- When the vignettes are realistically and appropriately designed
- When debriefing is based on a theoretical model

All nursing programs participating in the National simulation study required at least **600 hours** of clinical experience in the prelicensure curriculum. No evidence is available regarding the outcomes of substituting traditional clinical experience with simulation when the program has less than 600 hours; however, experts agree that the quality of the experience, not the number of hours, is crucial.

NCSBN provided the following update in the 2022 Environmental Scan titled:

Simulation in Prelicensure Nursing Programs

Educators have been left with many questions in the wake of clinical site closures during the pandemic. What ratio of clinical hours to simulation hours can be used to substitute for clinical experiences (Haerling [Adamson] & Prion, 2021)? What are the outcomes of traditional supervised clinical experiences (Leighton et al., 2021)? Can virtual simulation substitute for clinical simulation (Badowskiet al., 2021)? These are all critical questions that need more research.

Hayden et al.'s (2014) landmark study on simulation, which provided evidence that simulation can be substituted for up to 50% of traditional clinical experiences with no significant difference in outcome, used a 1:1 ratio of clinical experience hours to simulation hours. While a couple of studies (Curl et al., 2016; Sullivan et al., 2019) have investigated using a 2:1 ratio, with promising results, these studies only included a small number of nursing programs and students. Additional and more robust studies are needed to guide future policy.

Other researchers studied virtual simulation, which they defined as screen-based simulation, for meeting students' needs. In a retrospective, multisite, exploratory descriptive study with 97 prelicensure nursing students from three universities, investigators compared student perceptions of virtual simulation in meeting student learning needs to traditional clinical experiences and manikin based simulation environments using the Clinical Learning Environment Comparison Survey (CLECS) 2.0 (Badowski et al., 2021). The researchers found that traditional clinical experiences met students' perceived needs on all six subscale items, manikin-based simulation met the perceived needs in two areas, and virtual simulation met the perceived needs in four areas. These findings suggest that virtual simulation can be used to supplement traditional clinical experiences; however, more robust studies on virtual simulation are needed before it can replace traditional clinical experiences. In a systematic review of virtual simulation in nursing education studies from 1996 to 2018, Foronda et al. (2020) found virtual simulation to be a promising strategy, citing the high number of exploratory and other descriptive designs as well as the variability of objectives, conditions, equipment, and samples in the studies included. They recommended randomized controlled trials to elevate the science of virtual simulation.

Much of the current data on the impact of the COVID-19 pandemic, when clinical experiences are limited, suggest the importance of in-person clinical experiences. Yet, Leighton et al. (2021) uncovered evidence that the outcomes of traditional clinical experiences have not been rigorously studied. They attempted to conduct a systematic review on learning outcomes of traditional clinical experiences in nursing education but came up empty systematic—that is, no studies met their criteria. They suggest that we need sound scientific inquiry on the how to rigorously evaluate nursing education outcomes. Likewise, although one large mixed-methods study (Spector et al., 2020) suggested that clinical experiences with patients are critical to nursing education, it is unclear what specifically constitutes quality clinical experiences.

Guidance:

The Board offers the following guidance related to simulation, virtual reality, and virtual simulation.

Simulated hours will be counted as one simulated hour is equivalent to one clinical hour. One virtual simulated hour is equivalent to one clinical hour. One virtual reality hour is equivalent to one clinical hour. Due to limited data, the use of two to one ratio for simulation to clinical hours cannot be supported until further evidence

Definitions

Healthcare Simulation Dictionary –Second Edition

Debrief

A formal, collaborative, reflective process within the simulation learning activity.

An activity that follows a simulation experience and led by a facilitator.

To conduct a session after a simulation event where educators/instructors/facilitators and learners re-examine the simulation experience for the purpose of moving toward assimilation and accommodation of learning to future situations (Johnson-Russell & Bailey, 2010; National League for Nursing - Simulation Innovation Resource Center, 2013); debriefing should foster the development of clinical judgment and critical thinking skills (Johnson-Russell & Bailey, 2010).

To encourage participants' reflective thinking and provide feedback about their performance, while various aspects of the completed simulation are discussed.

To explore with participants their emotions and to question, reflect, and provide feedback to one another (i.e., guided reflection).

Debriefers

The individual who facilitates a debriefing session and is knowledgeable and skilled in performing appropriate, structured, and psychologically safe debriefing sessions (Fanning & Gaba, 2007).

The person who leads participants through the debriefing. Debriefing by competent instructors and subject matter experts is considered important to maximize the opportunities arising from simulation (Raemer et al, 2011).

High-Fidelity Simulation

In health care simulation, high-fidelity refers to simulation experiences that are extremely realistic and provide a high level of interactivity and realism for the learner (International Nursing Association for Clinical Simulation and Learning, 2013). It can apply to any mode or method of simulation; for example: human, manikin, task trainer, or virtual reality.

Low-Fidelity Simulation

Not needing to be controlled or programmed externally for the learner to participate (Palaganas, Maxworthy, Epps, & Mancini, 2015); examples include case studies, role playing, or task trainers used to support students or professionals in learning a clinical situation or practice (Adapted from National League for Nursing - Simulation Innovation Resource Center, 2013).

Prebrief

An information or orientation session held prior to the start of a simulation activity in which instructions or preparatory information is given to the participants. The purpose of the prebriefing is to set the stage for a scenario and assist participants in achieving scenario objectives.

The time used by educators, researchers, facilitators, or staff to plan their roles prior to the simulation. Suggested activities in a prebriefing include an orientation to the equipment, environment, manikin, roles, time allotment, objectives, and patient situation. For example: Before starting the simulation session, there is a prebriefing where the equipment and its capabilities are reviewed and they are reminded of the equipment available to them in the room (INACSL, 2013).

The collaboration and planning of co-facilitators/co-debriefers prior to the simulation activity.

Simulation

A technique that creates a situation or environment to allow persons to experience a representation of a real event for the purpose of practice, learning, evaluation, testing, or to gain understanding of systems or human actions.

An educational technique that replaces or amplifies real experiences with guided experiences that evoke or replicate substantial aspects of the real world in a fully interactive manner (Gaba, 2004).

A pedagogy using one or more typologies to promote, improve, or validate a participant's progression from novice to expert (INACSL, 2013).

Simulation Activity

The entire set of actions and events from initiation to termination of an individual simulation event; in the learning setting, this is often considered to begin with the briefing (prebriefing) and end with the debriefing.

Low-Fidelity Simulation

Not needing to be controlled or programmed externally for the learner to participate. Examples include case studies, role playing, or task trainers used to support students or professionals in learning a clinical situation or practice.

Virtual Reality

The use of computer technology to create an interactive three-dimensional world in which the objects have a sense of spatial presence; virtual environment and virtual world are synonyms for virtual reality (M&S Glossary).

A computer-generated three-dimensional environment that gives an immersion effect. 55

Often refers to the three-dimensional (3D) Head-mounted Display VR (HMD VR) in which the Virtual World is projected using a head-mounted display (e.g. Oculus Rift, HTC Vive Pro). (Chang and Weiner, 2016)

Virtual Reality Simulation

Simulations that use a variety of immersive, highly visual, 3D characteristics to replicate real-life situations and/or health care procedures; virtual reality simulation is distinguished from computer-based simulation in that it generally incorporates physical or other interfaces such as a computer keyboard, a mouse, speech and voice recognition, motion sensors, or haptic devices (ASSH).

Virtual Simulation

The recreation of reality depicted on a computer screen (McGovern, 1994).

A simulation involving real people operating simulated systems. Virtual simulations may include surgical simulators that are used for on-screen procedural training and are usually integrated with haptic device(s) (McGovern, 1994; Robles-De La Torre, 2011).

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