

Accessible Simulation: A Necessity in Nursing Education

Simulation is expanding rapidly in nursing education, but a focus on simulation accessibility is lacking. How accessible is simulation training for students with disabilities, and is simulation used optimally to benefit these students? We conducted an extensive literature search of the CINAHL® database using the keywords *nursing simulation*, *disability*, *accessibility*, and *universal design*—as well as combinations of these terms. Surprisingly, there was minimal to no emphasis on simulation accessibility in nursing education via scholarly publications and conference abstracts. Publications focusing on ways to assist nursing students with disabilities generally do not identify the simulation setting as a means of accessibility. On the basis of our findings, we suggest that increasing emphasis is needed on developing simulation technologies and laboratories with a Universal Design (UD) focus. Further, we assert that simulation is an ideal avenue and setting to increase accessibility for nursing students with disabilities, thus diversifying the profession. Increasing disability diversity is particularly needed within nursing education, as advocated by the National League for Nursing (2016).

Although higher technology in simulation opens more doors for many students, ironically it can close doors for students with disabilities. For example, if a simulation facilitator is acting as the voice of a manikin from a separate room, how is the student who is deaf and reads lips able to participate? One solution is UD. A primary UD principle involves designing for a wider range of people to benefit everyone, thus respecting diversity and increasing accessibility. The cause of the inequity is

addressed, thus reducing the need for accommodations. At its core, UD embraces the social model of disability where barriers result from the environment, rather than the prevailing medical model where barriers result from a deficit in the person. Thus, rather than focusing on changing a particular element for a specific individual's needs, the focus is on changing the entire process to benefit everyone's needs. A focus on UD can involve removing physical barriers such as developing high-fidelity manikins with incorporated voice recognition software and screens to display captions. Those with hearing loss, for example, would not need to request captioning accommodations with their associated fees, as captioning would be available for all students through UD. Even those who would not typically use captioning may find the added input beneficial. In UD, varied instructional strategies are used to meet the needs of as many people as possible. Overall, UD instruction is not used widely because of lack of knowledge by nurse educators (Levey, 2018). Levey recommended that nursing programs consult with UD instruction experts and that UD instruction be incorporated into the National League for Nursing's Certified Nurse Educator Program. More research on UD instruction is needed in the nursing profession. By starting with a more level playing field through UD, stigma toward nursing students with disabilities could be lessened. Although time consuming and costly up front, advocating for UD at the beginning stages of simulation technology development will lead to an ongoing streamlined and equitable process. The *Future of Nursing 2020–2030* has a strong emphasis on social determinants of health

(Wakefield et al., 2019). Imagine the positive effects of incorporating a disability-informed nursing curriculum including UD and simulation accessibility on the inclusion of people with disabilities into nursing.

Individualization is still needed when universality is incorporated. Griful-Freixenet, Struyven, Verstichele, and Andries (2017) advised applying UD in a flexible manner, accounting for individual student learning needs. Thus, some accommodations still may be necessary even when UD is used, and certainly in situations where UD has not been implemented. We propose that the simulation laboratory setting is an ideal, yet perhaps overlooked, environment to carry out accommodations either prior to or in place of clinical experiences in order to increase accessibility. Simulation as a pedagogical approach allows all nursing students the opportunity to practice and learn from mistakes without harm to patients, by replicating clinical scenarios. Although the percentage of allowable simulation to replace clinical hours varies by state (International Nursing Association for Clinical Simulation and Learning, n.d.), when outcomes were compared among nursing students receiving up to 50% simulation (instead of clinical time) in a large-scale longitudinal randomized control trial conducted by the National Council of State Boards of Nursing, no significant differences were found on clinical competency, nursing knowledge, or pass rates on the nursing board examination (Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014).

The ethical principle of justice involves equitable treatment, which does

not necessarily mean treating everyone in the same manner. Rather, the goal is fairness, which can be achieved in various ways using an individual focus. Some nursing educational programs use outdated technical standards (i.e., requiring the ability to see and hear instead of focusing on the outcome of the ability to communicate). Creative access is key, and different means can be used to reach an end result. The process of how someone achieves a skill is less important than the successful outcome of the skill achievement. Using a standard syringe and using a magnifier for the syringe are two different processes. The outcome of drawing up the correct medication dose is met in either case. Using standardized patients (SPs) rather than manikins may enhance accessibility in certain situations. SPs are an acceptable alternative to use in a simulation laboratory to replicate a clinical scenario. A simulation laboratory allows skills to be practiced in a safe environment where various scenarios can be attempted. For example, visual and amplified stethoscopes can be practiced in the laboratory to see which option best facilitates accurate blood pressure measurements and identification of heart and lung sounds. Determining how to manage these skills in the laboratory—in collaboration with faculty and disability services—better prepares the student for practicing in a clinical setting.

As Neal-Boylan and Smith (2016) suggested, if a student with a disability cannot navigate a certain clinical setting, the simulation laboratory can make a clinical experience possible for that student. For example, some older facilities used for clinical sites may have extremely small rooms and bathrooms, making navigation for a nursing student using a wheelchair difficult. In addition, a situation that a nursing student needs to practice may not be available in a clinical setting, so the simulation laboratory offers an opportunity for the student—with or without a disability—to learn the skill. The nursing profession has myriad settings in which one can work, but often has very limited clinical setting options for students. Furthermore, some clinical settings have limited options for assessment and skills opportunities due to low census and other factors. Simula-

tion laboratories allow for some control over the setting so the experience can be obtained. After all, the knowledge acquisition rather than the physical task itself speaks to the essence of nursing. Reasonable accommodations can also include peer assistance and delegation (Neal-Boylan & Smith, 2016)—both of which are often done by nurses without disabilities as well—and these viable options can be explored in the simulation laboratory. For example, a partner may be needed to physically complete a task and practicing this partnership process in the simulation laboratory fosters confidence when performing it in the clinical environment.

A person with a long-term disability has lived life with the condition and is clearly the expert in this area. However, when beginning nursing school, he or she may be faced with situations not previously encountered. For example, a person with a mobility impairment may have mastered self-transfers but may not have had the need to transfer someone else. Or a person who is deaf has likely never had to use a stethoscope in everyday life, but now will need to conduct assessments typically performed with a stethoscope. Students may not even know what is required for clinical environments because they have not experienced it yet. At times, students may also receive a disability diagnosis while in a nursing program, so they too may not yet be aware of what is needed. Faculty can anticipate clinical expectations and work with students to find creative solutions as needed. Of note, students may sometimes experience temporary disabilities such as a broken bone, and a simulation laboratory clinical experience could enable the student to stay in the program rather than being required to take a leave of absence that can prolong the educational time frame.

Research performed on simulation laboratory accessibility and experiences should avoid focusing on singling out those with disabilities with regard to patient safety. Often, researchers will focus on reducing the risk potential of nursing students with disabilities. Patient safety is an issue for all nursing students, and not any more or less so for nursing students with disabilities. In fact, no research has ever demonstrated

any safety concerns with nurses with disabilities. Unfortunately, erroneous attitudes about safety by nurses, including nursing faculty, remain prevalent and are a barrier to the education of nursing students with disabilities. More understanding of current facilitators and barriers to accessibility is needed, as is collaboration with interdisciplinary teams and funding sources to successfully apply principles of UD in simulation laboratories.

Simulation in general requires a high level of training among nursing faculty, and training in UD and accessibility adds another layer of complexity. However, being skilled in these areas is invaluable toward increasing the diversity of the nursing profession through culturally competent nursing educational practices. Advocating for UD in simulation and embracing simulation as a valuable means to make nursing education more accessible to people with disabilities should be a priority for the nursing profession.

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The authors have disclosed no potential
conflicts of interest, financial or otherwise.
doi:10.3928/01484834-20191021-01