Value Proposition for Simulation in Nursing Education

Synopsis

The California Simulation Alliance (CSA), a program of HealthImpact, advocates for the use of well-executed, quality simulated experiential learning activities in the professional formation and development of pre-licensure and graduate nursing students. Furthermore, the CSA supports the concept that up to 50% of clinical hours can be completed in a simulated clinical environment based on the robust evidence.

Problem Statement

Currently, the California Board of Registered Nursing (BRN) regulation Title 16 California Code of Regulations (16 CCR) § 1426(g)(2) limits the use of simulation hours up to 25% of clinical hours in pre-licensure nursing programs. As the increasing lack of clinical placement sites and natural disasters threaten the stability and reliability of access to in-person clinical education experiences, new evidence-based solutions need to be created by educational institutions and approved by the BRN. Simulation experiences that meet national standards can be one solution to this problem.

Background

Redesigning nursing education was identified over 10 years ago as an urgent societal agenda.[1, 2] This was reinforced by the 2011 Institute of Medicine Future of Nursing Report, calling for a radical transformation in the way nursing graduates are prepared to work effectively in a complex and evolving health care system.[3] Nursing faculty have been urged to revamp the curriculum and innovate teaching strategies that place more emphasis on clinical reasoning in efforts to transform nursing education.[1, 4-7]

Simulation as Part of Clinical Education

The National Council of State Boards of Nursing (NCSBN) defines quality clinical experiences as "either in face-to-face clinical experiences or in simulation, under the oversight of an experienced clinical instructor, the intentional integration of knowledge, clinical reasoning, skilled know-how, and ethical comportment across the lifespan."[8]

The NCSBN's transition from identifying 'simulation' to replace 'clinical experiences' to 'simulation' being recognized as a 'clinical experience' is significant and reflects the scientific evidence that describe the ability for this pedagogy to achieve student learning outcomes, curricular outcomes, and core competencies of the profession.

Simulation-based learning experiences are defined as "an array of structured activities that represent actual or potential situations in education and practice. These activities allow participants to develop or enhance their knowledge, skills, and attitudes, or to analyze and respond to realistic situations in a simulated environment."[9] Simulation modalities include, but are not limited to, computer-based simulation, virtual reality, mannequin-based simulation, role-play, and standardized patient/participants (i.e., actors trained to portray patient/participants in simulations).

Initially, many schools implemented simulation because clinical placements were difficult to find. However, through rigorous research studies, simulation was found to be equal to and as effective at recreating essential clinical encounters to meet student learning outcomes in a safe educational setting where no harm can come to patients.[10]

Benefits

With the expanded use of simulation, nursing faculty and nurse educators have increasingly questioned the value of traditional supervised clinical experience.[11] In the traditional models of direct patient care clinical education, students typically receive only a snapshot of patient care.[12] Clinical is subject to the randomness of the day and patient activity scheduling and there is no control over what will happen (or not) on any given day.[13] Furthermore, in some direct patient care settings, faculty often move rapidly from floor to floor, room to room, and student to student. Although faculty would like students to develop their practice of nursing and not focus on tasks, faculty are constrained by time that they can spend with each student. There is less time devoted to helping students develop clinical reasoning and judgment.[14, 15] The opportunities for learning how to practice delegation, communication with other healthcare professionals, and teamwork are rarely, if ever, available.[16] Finally, caring for multiple patients in order to prepare students for transitioning to the practice environment cannot take place due to student-to-faculty ratios, high patient acuity, and patient safety considerations which limits their practice readiness after they graduate.[16]

A significant benefit of simulation pedagogy is that scenarios can be designed and implemented to include elements identified as integral to a quality clinical experience. Unlike a clinical experience in a direct patient care setting, learning opportunities can be prescribed and guaranteed each semester.

Furthermore, students spend more time performing at the application and analysis levels in simulation than in direct care clinical experiences.[13] Additionally, higher levels of performance occur in much less time in simulation than in the direct care clinical experiences.[13]

Finally, in 2014 the National Council of State Boards of Nursing (NCSBN) conducted a landmark large-scale study of 10 nursing programs (five ADN and five BSN) from geographically diverse areas representing rural and metropolitan communities and included community colleges and large universities. This longitudinal randomized controlled study included a control group (clinical as usual), a 25% group (students had 25% of their traditional clinical hours replaced by simulation), and a 50% group (students had 50% of their traditional clinical hours replaced by simulation). Students were assessed on clinical competency and nursing knowledge throughout the clinical courses through graduation. Clinical competence and practice readiness was also assessed during the first six months of clinical practice. Findings identified there were no statistically significant differences in comprehensive nursing knowledge assessments ($p = 0.478$), and there were no statistically significant differences in NCLEX® pass rates ($p = 0.737$) among the three study groups. There were also no differences in overall clinical competence and readiness for practice at any of the follow-up survey time points: 6 weeks ($p = 0.706$), 3 months ($p = 0.511$), and 6 months ($p = 0.527$) of practice as a new registered nurse. This study provides substantial evidence that substituting high-quality simulation experiences for up to half of traditional clinical hours produces comparable end-of-program educational outcomes and new graduates that are ready for clinical practice.[17]

The majority of nursing programs in California (98.6%) report using simulation.[18] A significant number of these programs (97.8%) are using simulation to achieve learning outcomes in critical thinking, decision making, and priorities of care, 92.8% are using simulation to achieve learning objectives in direct patient care, and 91.3% have adopted simulation for teamwork and interprofessional care.[18] These important learning outcomes are essential for practice readiness and the high utilization of simulation demonstrated the significance of this learning strategy.

Successful Integration of Simulation

There are five key components to successful integration of simulation. These include leadership commitment, dedicated and appropriate facilities, appropriate educational and technological resources and equipment, qualified simulation program personnel and faculty who are prepared to lead simulations, and a firm understanding of best practices and guidelines governing simulation.[19] Unlike faculty development for assisting faculty in traditional direct care clinical experiences, there is growing evidence as provided by the leading organizations and researchers in the field as to the best practices for simulation faculty development.[20-28] For example, when following the INACSL Standards of Best Practice: Simulation,[29-36] nursing faculty are able to optimize learning experiences and ensure positive outcomes through simulation.[37] Furthermore, by adopting these best practices, nursing faculty will continue to improve student experiences and learning through the pedagogy of simulation. [37]

Constraints

The NCSBN Simulation Study[17] provided data that up to 50% simulation was safe and supported students in their formation to become a nurse. Furthermore, to mitigate concerns that nursing programs might begin to substitute simulation for traditional clinical experience without the appropriate environment, administrative support, or faculty preparation, the NCSBN convened an expert panel to developed national guidelines for use of simulation in the undergraduate nursing curriculum.[38] However, despite data from the NCSBN Simulation study and recommended guidelines, there is great variability in how BONs are defining and regulating the use of simulation in nursing education including the amount of traditional clinical hours that can be replaced with simulation.[39]

In the context of pre-licensure nursing education, the California BRN and 16 CCR §1420(e) defines clinical practice as "planned learning experiences designed for students to apply nursing knowledge and skills to meet course objectives in a variety of board-approved clinical settings. Clinical practice includes learning experiences provided in various health care agencies as well as nursing skills labs, simulation labs, and computer labs." 16 CCR §1426(g)(2) requires that 75% of clinical hours in a course must be in direct patient care. Direct patient care is not defined. The current BRN position is that a change in the clinical hour regulation, especially in disaster

situations, is not warranted due to the flexibility of the available waivers and that use of simulation is unsafe and will result in incompetent nurses despite no evidence to support that position.[40] Pursuant to the Governor's Executive Order 39-20, the Department of Consumer Affairs directed the BRN to waive the 75% direct patient care experience requirement during the COVID-19 pandemic,[41] and with the passage of AB 2288, Chapter 282, Statues of 2020, the percentage of simulation can increase during a state of emergency.[42] However, organizations face continued challenges due to the current California regulations in non-disaster times and the limits that 16 CCR §1426(g)(2) has on the amount of simulation. This has created policy and regulatory challenges for simulation educators in the California.

Solution

The CSA supports ongoing and future collaboration with the BRN in pursuing evidence-based regulation promulgation that support the maximized use of simulation in providing quality student learning experiences and outcomes.

Proposed regulation changes

Change 16 CCR §1426(g)(2) to read:

> (a) Three (3) hours of clinical practice each week throughout a semester or quarter equals one (1) unit. With the exception of an initial nursing course that teaches basic nursing skills in a skills lab, at least 50% of total curriculum hours must be in direct patient care.

> (b) Any clinical experiences that utilize simulation shall be based on best practice, and incorporate the standards published by the International Nursing Association for Clinical Simulation and Learning (INACSL),[29-36] the National Council of State Boards of Nursing (NCSBN),[43] the Society for Simulation in Healthcare (SSH),[44] Association of Standardized Patient Educators (ASPE),[45] or equivalent standards approved by the board.

Conclusion

The current California BRN regulations require a minimum of 75% of nursing student clinical experiences be in direct patient care is not evidence based nor does it improve practice readiness. It is also important to reiterate that current regulations are based on an over simplistic definition of success, the NCLEX pass rate[46]. However, the current NCLEX is not an indicator of good clinical practice but rather a measure of knowledge, and many nursing programs are graduating

clinicians who successfully complete the state board licensing examination but are underprepared to operate in the complex field of professional practice.[47]

There is however, robust evidence to support a regulation to allow up to 50% of clinical experiences in well-executed simulation. This would allow educators to provide students with a safe, nonthreatening environment where a standardized high-quality clinical experience can be assured and mastery achieved. Benefit of simulation pedagogy is the ability for faculty to design and implement scenarios that include elements identified as integral to a quality clinical experience. Unlike a clinical experience in a direct patient care setting, learning opportunities can be guaranteed. Furthermore, experiences that are not legally feasible in clinical practice, such as the student functioning as a licensed nurse developing autonomy and professional confidence, can safely be provided in simulation-based learning.

Based on current evidence, the CSA supports ongoing and future collaboration with the BRN to make regulatory changes to support the maximized use of simulation, allowing up to 50% of clinical hours to be completed in a simulated clinical environment under conditions comparable to those described in the NCSBN study.

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