DEAN'S Notes™
Volume 36, No. 1 • September/October 2014
Published by Anthony J. Jannetti, Inc. as a service to the National Student Nurses' Association, Inc.
A Communications Service to Nursing School Deans, Administrators, and Faculty

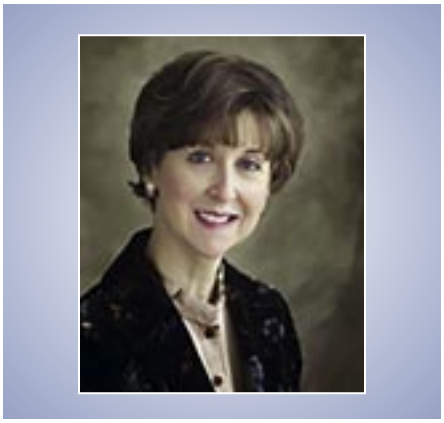
NCSBN National Simulation Study

Maryann Alexander, PhD, RN, FAAN

With a growing number of undergraduate nursing programs vying for clinical sites and a stationary or shrinking pool of clinical opportunities, educators are challenged to find innovative ways to provide quality clinical experiences for their students. Over the past decade, programs have come to realize that the emerging technology of high-fidelity simulation allows students to develop and practice their nursing skills in a controlled environment. As more programs turn to this modality, educators and regulators alike began to ask a question for which existing research had no answer: to what extent could simulation be used as a substitute for traditional clinical experiences without affecting the quality of education?

Recognizing the need for a controlled, longitudinal study on the effectiveness of simulation, in 2010, the National Council of State Boards of Nursing (NCSBN) convened the National Simulation Study, a large-scale, randomized, controlled study that encompassed the entire nursing curriculum. Led by primary investigator Jennifer Hayden, the study aimed to determine whether simulation could be substituted for traditional clinical hours in prelicensure nursing curriculum, as well as the impact that a curriculum integrated with simulation had on educational outcomes and post-graduation nursing practice.

To accomplish this, ten nursing programs, five ADN and five BSN, were selected from institutions of various sizes, in geographically diverse areas across the United States and representing both urban and rural populations, to participate in the study. Consenting students who were beginning their studies



in the Fall 2011 semester, with an expected graduation date of Spring 2013, were randomized into one of three groups: the control group, whose curriculum included traditional clinical experiences with no more than 10% of clinical hours spent in simulation; a group in which 25% of clinical hours were replaced with simulation; and a group in which 50% of clinical hours were replaced with simulation. Students remained in their assigned group for all undergraduate core nursing courses.

In preparation, each participating program selected a designated team of faculty and staff to be trained on the NLN/Jeffries Simulation Framework and the Debriefing for Meaningful Learning© method (Dreifuerst, 2010) to ensure consistent delivery across all programs. Simulation scenarios involved medium- or high-fidelity manikins, standardized patients, role playing, skills stations, and computer-based critical thinking simulations, and were subject to the same requirements as a traditional clinical setting. Throughout their studies, participants were evaluated on their nursing knowledge using the ATI Content Mastery Series® examinations. They rated the extent to which their learning needs were met via the Clinical Learning Environment Comparison Survey (CLECS). Instructors rated their competency on an ongoing basis using the Creighton Competency Evaluation Instrument (CCEI). Additionally, the study followed new graduate nurses into their first six months of employment as an RN after graduation, with both the nurses and their managers/preceptors assessing their performance, critical thinking skills, and competency at six weeks, three months, and six months after hiring.

By graduation in Spring 2013, a total of 666 students of the 847 who had originally consented had completed the study. At this time point, there were no statistically significant differences in clinical competency as assessed by preceptors and instructors ($p = 0.688$), no statistically significant differences in comprehensive nursing knowledge assessments ($p = 0.478$), and no statistically significant differences in NCLEX® pass rates ($p = 0.737$) among the three study groups. Further, after moving into their first positions of nursing employment, manager ratings showed no statistical significance in the study subjects' clinical competency or readiness for practice at six weeks ($p = 0.706$), three months ($p = 0.511$), or six months ($p = 0.527$) (Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014).

Maryann Alexander, PhD, RN, FAAN, is the Chief Officer, Nursing Regulation, National Council of State Boards of Nursing, and the Editor-in-Chief, *The Journal of Nursing Regulation.*

The study's results align with other research that has substituted simulation for a portion of traditional clinical experiences (Meyer, Connors, Hou, & Gajewski, 2011; Watson et al., 2012).

Additionally, this study contributes to the body of knowledge addressing the transfer of learning from simulation to clinical practice. Final clinical preceptor evaluations showed no differences in critical thinking, clinical competency, and overall readiness for practice between the three study groups. Taken with the findings of previous studies (Alinier, Hunt, Gordon, & Harwood, 2006; Kirkman, 2013; Rutherford-Hemming, 2012), it is evident that skills learned in simulation do transfer to the clinical setting.

All evaluative measures in the National Simulation Study produced the same results: educational outcomes were equivalent when up to 50% of traditional clinical experience in the undergraduate nursing program was replaced by high-fidelity simulation. While these results will certainly inform the future of nursing education, one particular outcome that deserves mention is the high performance of the 666 participants that completed the study. End-of-program preceptor ratings of the students' clinical performance and critical thinking, based on a Likert scale where 1 = lowest rating and 6 = highest rating, consistently produced means of over 5.0. Likewise, surveys of managers in the participants' first position of employment, using the same scale, also showed mean ratings of over 5.0 (Hayden et al., 2014). While this could very well be a Hawthorne effect, to attribute the high ratings solely to the effects of being observed is to ignore several other important contributing factors.

First—as has already been mentioned—the faculty were diligently prepared to deliver instruction via this method. In three intense, weekend-long training sessions, faculty practiced not only how to effectively execute the simulation techniques called for by the study, but also how to give the activity a meaningful application through debriefing. Faculty proficiency in these methods was continually monitored throughout the study by their team leaders. All of this helped ensure that the delivery of content was of uniformly high quality.

In addition to this, the buy-in of the programs themselves was instrumental to the success of both the study and its participants. Ten nursing programs made the substantial two-year commitment to participate in the study, altering their pedagogy and collecting and reporting considerable amounts of data; all 10 remained until study completion. Further, the programs and their faculty excelled at supporting and engaging the student participants, resulting in a study completion rate of 79% (666 of the 847 who consented to participate) (Hayden et al., 2014).

The study outcomes clearly support the hypothesis that traditional clinical experiences may be substituted with up to 50% high-fidelity simulation; however, this finding does not imply that simulation is universally equivalent to a traditional clinical experience. The simulation methods employed in the study replicated the experiences of a traditional clinical opportunity as closely as possible, with equipment and supplies that provide a realistic setting; simulation experiences of lower fidelity than those utilized by the participating programs may not produce the same educational outcomes. Similarly, faculty who are not trained or experienced in simulation pedagogy may not attain the same effectiveness of content delivery as those on the study teams. Finally, institutional support for simulation on an ongoing basis, in the form of infrastructure, resources, and adequate staffing, is a definite consideration for any program considering the adoption of simulation. To this end, NCSBN is currently compiling a set of guidelines and best practices for the successful implementation of simulation within a nursing program.

The National Simulation Study informs the discussion on what future research is needed in this area. Further study is called for to address the ratio of traditional clinical hours to simulated clinical experiences. The upper limit of 50% simulation included in this study did not determine a point at which substitution affects educational outcomes. In addition, the impact of the proportion of time a student spent actively participating in a simulation, as opposed to observing, may also warrant further research.

The National Simulation Study has provided evidence of the equal effectiveness of both traditional and simulated clinical experiences. In fact, the evidence suggests that the amount of simulation used in a program is not a factor in that program's success, so long as a culture of institutional support, feedback, and ongoing faculty training is cultivated by administrators. As stated in the conclusion of the study: "In both environments, when structure, an adequately prepared faculty with appropriate resources, dedication, foresight, and vision are incorporated into the prelicensure nursing program, excellent student outcomes are achieved" (Hayden et al., 2014). DN

Note: To download a copy of the complete study, go to journalofnursingregulation.com.

References

Alinier, G., Hunt, B., Gordon, R., & Harwood, C. (2006). Effectiveness of intermediate fidelity simulation training technology in undergraduate nursing education. *Journal of Advanced Nursing*, *54*(3), 359-369.

Dreifuerst, K.T. (2010). *Debriefing for meaningful learning: Fostering development of clinical reasoning through simulation* (Doctoral dissertation, faculty of the University Graduate School in partial fulfillment of the requirements for the degree Doctor of Philosophy in the School of Nursing, Indiana University).

Hayden, J.K., Smiley, R.A., Alexander, M., Kardong-Edgren, S., & Jeffries, P.R. (2014). The national simulation study: A longitudinal, randomized, controlled study replacing clinical hours with simulation in prelicensure nursing education. *Journal of Nursing Regulation*, *5*(2S).

Kirkman, T.R. (2013). High fidelity simulation effectiveness in nursing students' transfer of learning. *International Journal of Nursing Education Scholarship*, *10*(1), 171-176.

Meyer, M.N., Connors, H., Hou, Q., & Gajewski, B. (2011). The effect of simulation on clinical performance: A junior nursing student clinical comparison study. *Simulation in Healthcare*, *6*(5), 269-277.

Rutherford-Hemming, T. (2012). Learning in simulated environments: Effect on learning transfer and clinical skill acquisition in nurse practitioner students. *The Journal of Nursing Education*, *51*(7), 403-406.

Watson, K., Wright, A., Morris, N., McMeeken, J., Rivett, D., Blackstock, F., ... Jull, G. (2012). Can simulation replace part of clinical time? Two parallel randomised controlled trials. *Medical Education*, *46*(7), 657-667.

Additional Readings

Bambini, D., Washburn, J., & Perkins, R. (2009). Outcomes of clinical simulation for novice nursing students: Communication, confidence, clinical judgment. *Nursing Education Perspectives*, *30*(2), 79-82.

Jeffries, P.R., & Rizzolo, M.A. (2006). Designing and implementing models for the innovative use of simulation to teach nursing care of ill adults and children: A national, multi-site, multi-method study [Summary Report].

Lambton, J., O'Neill, S.P., & Dudum, T. (2008). Simulation as a strategy to teach clinical pediatrics within a nursing curriculum. *Clinical Simulation in Nursing*, *4*(3), e79-e87.

Nursing Ethics for the 21st Century: A Blueprint for Action

Johns Hopkins University School of Nursing and Berman Institute of Bioethics
August 13-15, 2014

The Johns Hopkins University School of Nursing and Berman Institute of Bioethics convened a National Nursing Ethics Summit in response to the increasingly complex and intense array of ethical issues that nurses confront in their daily practice. The Summit's 50 attendees are leaders in the fields of nursing ethics, education, and research, and representatives of the major nursing professional organizations, including the American Academy of Nursing, American Association of Critical-Care Nurses, American Nurses Association, American Association of Colleges of Nursing, American Association of Nurse Executives, Association of Women's Health, Obstetric and Neonatal Nurses, International Care Ethics Observatory, National Institute of Nursing Research, National League for Nursing, National Student Nurses' Association, Oncology Nursing Society, and Sigma Theta Tau International. The Hastings Center, The Center for Practical Bioethics, and the National Council of State Boards of Nursing were also collaborating partners.

The goal of the **"Nursing Ethics for the 21st Century"** National Summit was to identify the *strategic nursing ethics priorities* for the profession and *create a blueprint for the future* that key individuals and professional organizations will adopt and implement to build capacity within nursing; create and support ethically principled, healthy, sustainable work environments; and enhance patient and family outcomes.

The Summit agenda moved participants from general concerns about ethical challenges in nursing clinical practice, education, research, and policy to a specific blueprint for fostering and sustaining ethical practices throughout nurses' professional roles. The invited attendees shared a common vision that nurses must be ethically competent to fulfill their obligations to self and others, even as they advocate for the patients they serve, the profession, and the health of the nation. This social-ecological framework for understanding today's challenges and opportunities begins with the nurse, then extends to the care team, the health system, and the community.

Timing of the Summit

Patients today enter a health care system struggling to cope with unprecedented challenges, including: the increasing diversity and acuity of patients, rapid technological change, and pressures to reorganize care delivery and reduce costs. At the same time, the interplay between clinicians' well-being and resilience, the health of the environments where they practice, and care outcomes is increasingly recognized. Put simply, patients (and organizations) fare better when nurses are supported in their work environment and able to practice high-quality, ethical care.

At this time of rapid evolution, the need for action tempered with thoughtful dialog and analysis is urgent. Effective nursing engagement and leadership is needed, in order to assure that the solutions devised to solve our health care dilemmas sustain the values of the profession and nursing's place in the interprofessional dialogue.

In 2015, the American Nurses Association will release its newly revised Code of Ethics, and the Summit discussions laid critical groundwork for the code's effective integration into the daily work of the nation's 2.8 million registered nurses. DN

DEAN'S Notes™
Published by Anthony J. Jannetti, Inc. as a service to the National Student Nurses' Association, Inc.
A Communications Service to Nursing School Deans, Administrators, and Faculty

Volume 36, No. 1 • September/October 2014

Dean's Notes is indexed in Cumulative Index to Nursing & Allied Health Literature.

Dean's Notes is published five times a year (September/October, November/December, January/February, March/April, and May/June) by Anthony J. Jannetti Inc., East Holly Avenue, Box 56, Pitman, New Jersey 08071-0056. Telephone 856.256.2300. FAX 856.589.7463. Address changes should include mailing label and be forwarded to the publisher.

Anthony J. Jannetti, Inc.
East Holly Avenue, Box 56
Pitman, NJ 08071-0056

CHANGE SERVICE REQUESTED

PRSRT STD
US Postage
PAID
Deptford, NJ
Permit #142

www.facebook.com/NSNAinc

www.twitter.com/NSNAinc

Nursing Grads Combat Debt and Unemployment

Nurses are often viewed as heroes by their patients, thanks to their skills and compassion. For new nursing graduates, heroism may be needed early on in their careers when they are hit by the twin challenges of college debt and possible unemployment.

A *Nursing Economic$* article, "Nursing Student Loan Debt: A Secondary Analysis of the National Student Nurses' Association (NSNA) Annual Survey of New Graduates," breaks it all down, from loan burdens to a slightly improved job market. The article appears in the September/October issue of the journal.

To get some answers, authors Veronica Feeg, PhD, RN, FAAN, and Diane Mancino, EdD, RN, CAE, FAAN, went to the nurses themselves and analyzed four years of data from the NSNA New Graduate Annual Survey (2010-13).

"Understanding educational loan debt, school choice, and borrowing patterns of nursing students specifically is essential to forecast and plan for an adequate supply of educated nurses in the future," the authors write.

The good news first: hiring new nursing grads appears to be improving in all regions of the country, with the south and central portions showing the best rates.

On the down side, only 55%-59% of Bachelor of Science (BSN) students reported being employed in the four years analyzed (2010-13). That's better than the numbers reported by Associate Degree Nurses (ADNs), which ranged from 42%-45%.

As far as debt, for those same four years, approximately 70% of all graduate nurses report graduating with debt, vs. about 27% with no debt.

"We discovered nursing students are similar to all undergraduate college students with average student loan debt (approximately $30,000 per borrower)," the authors write. As expected, BSN grads owe more than the ADNs.

The authors conclude that while nursing students may face lower debt overall than their liberal and social science counterparts, the data analyzed in this study suggest they are more likely to be in debt than in the past.

"Policymakers and educators need to be aware of the debt that is carried by these new graduates," the authors advise. "It is imperative strategies be created to support a workforce that is prepared to meet the health care challenges faced by the next generation of nurses." DN