Purpose: Improved clinical skills, measured by increased self-efficacy scores and by evaluation of performance by an objective observer, should result in lower error rates, decreased patient injury, and decreased cost to the healthcare system. The aim of this study was to validate the level of understanding of senior-level nursing students of their self-efficacy by completing the Clinical Skills Self-Efficacy Scale (CSES), deliberate practice in the skills laboratory with a focus on urinary catheter insertion, and by video recording and debriefing of urinary catheter insertion.

Background: The urinary tract is the most common site of a nosocomial infection, and roughly 600,000 hospitalized patients are affected by catheter-associated urinary tract infections (CAUTI) each year (Zurmehly, 2018). Instrumentation of the urinary tract is a precipitating cause of hospital-acquired CAUTIs resulting in more than 13,000 deaths annually, and with an estimated cost of over $340 million (Zurmehly, 2018; Ferguson, 2018). According to Cason, Atz and Horton (2017) performing urinary catheter insertion and care is an example of a procedural skill required prior to graduation.

Methods: A pretest-posttest design using the CSES and a convenience sample of first semester senior baccalaureate nursing students participated in an intervention of skills training in the simulation laboratory, with the use of iPad technology for video recording pretest-posttest. The recordings were reviewed for breaches in aseptic technique. The participants were issued their own urinary catheter kits. To ensure standardization in the skill, the catheter kits had a Q-R code, which when scanned, took students to the skills video on inserting a urinary catheter. Another Q-R code informed students of open laboratory hours (Shustack, 2018).

Participants: Data were available for 21 first semester senior baccalaureate nursing students whose age ranged from 20 to 52 years (mean, 24.3). Three participants (14%) were male and 18 (86%) were female.

Results: Findings indicated that the simulation laboratory, deliberate practice, and video debriefing, were effective in improving student’s self-efficacy in performance of nursing skills including urinary catheter insertion. Thirteen students (62%) increased their ratings by 1 or more between pretest and posttest with a p-value = 0.025.

Examination of the video recorded data showed a common breach of aseptic technique was continuing to hold the catheter with the clean hand and inflate the balloon with the sterile hand. An area of greatest improvement was opening the catheter kit without contamination (100%) for the posttest recording.

Conclusion: Students self-report of self-efficacy improved, in all areas of the CSES with the exception of inserting a nasogastric tube with correct placement after the intervention. Using simulation technology in student education improves knowledge and
skills with an opportunity to transfer theory to practice (Alanazi, Nicholson, & Thomas, 2017). Findings indicated, the simulation laboratory, deliberate practice, Q-R code technology, and video debriefing, were effective for improving student's self-efficacy in performance of nursing skills. This study aimed to improve skills acquisition, specifically urinary catheter insertion by nursing students, with the goal of reducing medical error rates and improving patient care.

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**Title:**
Validating Nursing Students' Self-Efficacy Ratings and Urinary Catheterization Skills Using Simulation and iPad Video Debriefing

**Keywords:**
Patient Safety, Self-efficacy and Simulation technology

**Abstract Summary:**
The aim of this study was to validate the level of understanding of senior-level nursing students of their self-efficacy by completing the Clinical Skills Self-Efficacy Scale (CSES), deliberate practice in the skills laboratory with a focus on urinary catheter insertion, and video recording and debriefing urinary catheter insertion.

**References:**

First Primary Presenting Author

Primary Presenting Author
Lynne C. Kiernan, DNP, MSN, RN-BC
Norwich University
School of Nursing
Associate Professor of Nursing
Northfield VT
USA

Author Summary: Lynne Kiernan graduated from the University of Vermont with a BSN in Professional Nursing, received a MSN degree from Drexel University, and received her DNP from Chatham University. Lynne's research focused on improving clinical competence and confidence in BSN nursing students using simulation and deliberate practice. Lynne is an Associate Professor of Nursing and her teaching responsibilities include Health Assessment, Medical Surgical Nursing, and Evidence-Based Practice. Lynne is an instructor of 3-G simulation for Medical-Surgical.

Second Secondary Presenting Author

Corresponding Secondary Presenting Author
Jessica L. Wood, DNP, WHNP-BC, RNC-OB
Norwich University
School of Nursing
Associate Professor
Northfield VT
USA

Author Summary: Jessica L. Wood graduated from the University of New Hampshire with her BSN in 2002, her MSN from Norwich University in 2009, her DNP from Duke University in 2015 and her WHNP from Duke University in 2016. Jessica's primary research focused on improving clinical competence with the insertion and care of the Foley catheter. Jessica is an Associate Professor at the Norwich University School of Nursing where her teaching expertise is in Women's Health.

Third Author
Darlene M. Olsen, PhD
Norwich University
Mathematics Department
Professor
Northfield VT
USA

Author Summary: Dr. Darlene Olsen has taught at Norwich University in central
Vermont since 2006 and is currently a Professor of Mathematics and the Director of the Honors Program. Her current research areas are biostatistics and pedagogy in mathematics and statistics. Dr. Olsen received her doctorate in Mathematics and a Master of Science in Biometry and Statistics from the University at Albany, New York.