The Effectiveness of Simulation Education on Improving Self-Efficacy Toward Teaching Among Nurse Educators in India

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Background: Simulation is an evidence-based teaching and learning method that has been used in nursing education to improve critical thinking and clinical decision making skills in high income countries for several years (Hayden et al., 2014). While simulation is a growing concept globally, limited research exists on the translation of simulation as a teaching strategy across cultures and in countries with emerging economies, such as India (Garner et al. 2017). In order for nursing faculty new to simulation to be successful in adapting simulation as a new teaching technique, they need to be confident in their abilities. Self-efficacy as described in Bandura’s (1977) seminal work is a person’s perception of one’s ability to perform at various levels. It is imperative for nurse educators to have a high level of self-efficacy when embedding simulation into nursing curricula.

Purpose: Our overarching aim for this study was to examine the impact of a simulation education workshop intervention on improving self-efficacy towards teaching among nurse educators in India. Specifically, the Self-Efficacy Towards Teaching Inventory for Nurse Educators (SETTI-NE) was used to evaluate four subscales related to self-efficacy including 1) course preparation, 2) instructor behavior and delivery, 3) evaluation and examination, and 4) clinical practice.

Methods: A quantitative pre-test/post-test design was used. Non parametric sampling methods were used to recruit N=87 nursing faculty from 20 nursing schools across South India, which focused on best practices in simulation standards (International Nursing Association for Clinical Simulation and Learning, 2016), simulation use in a variety of settings, and intraprofessional collaborative practice. The simulation workshop provided hands-on interactive breakout sessions using both high and low fidelity simulators and attendees participated in scenarios including 1) pediatric fluid and electrolyte imbalance in an urban hospital setting, 2) nursing and midwifery care during the second stage of labor in a hospital setting, 3) Helping Babies Breathe® in a rural healthcare setting, and 4) cardiopulmonary resuscitation and use of an automatic external defibrillator in a community setting. This study was approved by an International Review Board in the United States (US) and in India. The workshop was conducted and data were collected in July of 2017 by a cross-cultural team of nurse faculty from both India and the US. A paired t-test was conducted to measure pre and post-test self-efficacy scores.

Results: Sociodemographic results were:

- 89.7% participants were female and 10.3% male.
- 9.2% were age 25 years or below, 60.9% were between 26-35, 21.9% were between 46-45, 4.6% were between 46-55, and 3.4% were 61 or above.
- Highest degree among participants were reported as 23% Bachelor of Science in Nursing, 74.7% Master of Science in Nursing, and 2.3% Doctorate of Philosophy in Nursing.

Statistically significant improvements in total and subscale scores were found when measuring self-efficacy towards teaching among nurse educators in South India after a simulation workshop intervention.

- Total SETTI-NE $t(86) = -10.36$, $p<.0001$
- Course Preparation Subscale $t(86) = -10.03$, $p<.0001$
• Instructor Delivery Subscale \( t(86) = -8.96, p<.0001 \)
• Evaluation and Examination Subscale \( t(86) = -7.47, p<.0001 \)
• Clinical Practice Subscale \( t(86) = -10.77, p<.0001 \).

**Conclusion:** Nursing faculty preparation is a key requisite to effective nursing education and building nurse capacity around the world (Spies et al. 2017). According to the National Health Policy for India, the Ministry of Health (2017) recently recognized how nurses are crucial to improving health in India and makes an appeal to establish centers of nursing excellence in all of its member states to address the quality of nursing education in India. Simulation is an emerging concept in India and findings from this study can be used to model simulation education programs around the nation and in similar emerging economies where simulation is on the rise. A cross-cultural international team of researchers was successful in collaborating to improve teaching self-efficacy among nurse educators and establish a simulation program in India. More studies are needed to determine how international partnerships can influence both teacher self-efficacy and the establishment of simulation programs globally.

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Abstract Summary:
This study, conducted by an international team of collaborating researchers, evaluates the impact of a simulation education workshop intervention on self-efficacy towards teaching among nurse educators in South India.

Content Outline:

I. Introduction
   A. Introduction of international research team from India and the US
   B. History of collaboration between international partners
   C. Simulation and global innovation

II. Research Study Background
   A. Research and evidence on simulation education overview
   B. Body of research on self-efficacy

III. Purpose
   A. Evaluating the impact of simulation education on self-efficacy towards teaching among nurse educators in India
   B. Evaluating subscales: course preparation, instructor delivery, evaluation and examination, and clinical practice

IV. Methods
   A. Design: Quantitative pre-test/ post-test design
   B. Sampling Methods: purposive sampling, N=87 nurse educators from 20 schools across Karnataka, India
   C. Human Participant protection: IRB approved by University in the US and hospital in India. Informed consent obtained
   D. Data Collection: Data collected July 2017 before and after a simulation education workshop intervention
   E. Data Analysis: Sociodemographic data were analyzed using descriptive statistics. A paired t-test was conducted to assess self-efficacy towards teaching before and after the simulation workshop intervention

V. Results
   A. Sociodemographic data
   B. Inferential statistical results

VI. Discussion
   A. Implications for nursing education
   B. Implications for nursing policy
   C. Recommendations for future research
   D. Limitations

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**Author Summary:** Dr. Shelby L. Garner is an Assistant Professor of Nursing at the Baylor University Louise Herrington School of Nursing where she teaches Nursing Research and Servant Leadership. Dr. Garner has an active international research trajectory and is the Project Director for a US Agency for International Development Grant to build a Simulation Education and Research Centre for Nursing Excellence in Bengaluru, India. She is also a 2016-2018 Fulbright Research Scholar to India.

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**Author Summary:** Dr. Bradshaw and colleagues first published on teacher self-efficacy in nurse educators in 1999. The instrument in the original research has been used by other nurse educators in subsequent research studies. It was modified for this study to include use of simulation and to study self-efficacy in nurse educators outside of the United States.