Faculty Development When Initiating Simulation Programs: Lessons Learned From the National Simulation Study

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Nursing programs are seeking guidance from boards of nursing about how much simulation can be substituted for traditional clinical practice. To address this question and to assess educational outcomes when simulation is substituted for clinical time, the National Council of State Boards of Nursing (NCSBN) conducted a study using 10 nursing schools across the United States. This article focuses on the faculty development needed to maintain fidelity in the intervention, implementation, and evaluation processes of initiating simulation programs. Lessons learned from preparing faculty for the NCSBN simulation study are shared and may be applicable to schools seeking to educate faculty in teaching simulation.

Nursing programs are recognizing clinical experiences using simulation as an important component of nursing education. Because of increasing difficulties in obtaining high-quality clinical placement sites, some nursing programs are replacing a portion of the time spent in traditional clinical environments with simulation, and they want to replace more. Thus, programs are making substantial investments in equipment and dedicated laboratory space. However, faculty education for simulation is often underfunded or neglected (Kardong-Edgren, Willhaus, & Hayden, 2012; Waznonis, 2014).

As a result, these programs are seeking guidance from boards of nursing (BONs) about how much clinical time can be spent in clinical experiences using simulation. BONs, however, have valid questions about the apparently widespread and uncritical adoption of simulation. Oermann, Yarbrough, Saewert, Ard, and Charasika (2009) suggest that the "call for evidence in nursing education parallels the emphasis on evidence-based practice in nursing" (p. 64). Additionally, many BONs and schools of nursing are requesting information about best practices in simulation pedagogy and are also asking for guidance to develop faculty in the area of creating and implementing a simulation-based curriculum in their nursing program. Others ask which competencies are being measured by simulation and how they should be measured. BONs have requested data to help guide and support decisions regarding these important issues.

The National Council of State Boards of Nursing (NCSBN) conducted a study using 10 U.S. nursing schools that began in the fall of 2011. The National Simulation Study examined the educational outcomes of nursing knowledge, clinical competency, and students' perception of how well learning needs were met. Prelicensure nursing students at each school were randomized to a control group in which up to 10% of clinical time was replaced by simulation, a group in which 25% of clinical time was replaced by simulation, or a group in which 50% of clinical time was replaced by simulation. Students were followed throughout their nursing program and for up to 6 months after they began practice as new graduate nurses (Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014).

Large multisite studies in nursing education are rare (Oermann et al., 2012) as are nursing faculty members experienced in conducting these types of studies. Thus, this large, multisite study required intervention fidelity. Faculty participants needed to be educated in the interventional pedagogy so the simulations would be presented in a consistent manner across the 10 sites. In the year before the study, extensive education following the principles of maintaining fidelity in educational and psychosocial interventions was conducted over three time periods. Faculty members from each participating school were instructed in the study design and the chosen models for conducting and debriefing the study simulations and the use of the assessment evaluations. This provided the rigor, fidelity, and integrity needed for a multisite study.

Translating these findings into a high-quality practice of teaching with simulation requires similar attention to training, rigor, and fidelity. This article focuses on the faculty development necessary to conduct and ensure the integrity of the National Simulation Study and provides guidance for developing faculty to implement a simulation-based curriculum into their nursing program. Faculty development in the study included creating instructional and reference materials for the study sites, presenting interactive educational sessions with participant demonstration and evaluation, using standardized protocols for facilitating

simulation scenarios, conducting debriefings using Dreifuerst's (2012) Debriefing for Meaningful Learning© (DML), evaluating student clinical performance using the Creighton Clinical Evaluation Instrument (CCEI) , and evaluating debriefing effectiveness using the Debriefing Assessment for Simulation in Healthcare-Rater Version (DASH©-RV) instrument (Simon, Raemer, & Rudolph, 2011). To implement a similar design in a single school or program, similar decisions and protocols would be necessary; however, evaluation measures may need to be refined to address individualized desired program outcome data.

Literature Review

Results of studies reporting the outcomes of simulation education are favorable, but the literature is limited in its generalizability. There is variability in the way simulations are structured and conducted and variability in the way debriefing is conducted. The use of validated assessment instruments is nascent in the literature. The level of evidence needed by BONs and nurse educators to determine whether simulation can replace some of the time in traditional clinical experiences is still lacking.

The simulation literature in health-related disciplines has increased exponentially in the last 10 years. However, many early studies in the nursing simulation literature had small sample sizes, described the learning outcomes after exposure to a small number of simulation scenarios, tested simulation used in one course, or did not use a control group to compare learning outcomes. There are few large, multisite, longitudinal studies.

The maintenance of intervention fidelity in large multisite studies can be challenging but is fundamental to achieving valid outcomes and sound findings. Key factors in nursing and educational research fidelity include attention to consistencies in study design, training in the use of the intervention, implementation, and evaluation methods (Hulleman & Cordray, 2009; Santacroce, Maccarelli, & Grey, 2004). In this study, each was given careful consideration to ensure fidelity across sites and longitudinally over the 24 months of data collection.

Best practice standards for debriefing have been published (Decker et al., 2013); however, reports describing the actual faculty development methods for simulation training and debriefing education remain rare in the literature (Jones, Reese, & Shelton, 2014; Nehring, Wexler, Hughes, & Greenwell, 2013; Reese, 2014). In fact, most current simulation faculty members have had little formal simulation facilitator training (Waznonis, 2014). More faculty members have been trained by vendor representatives who sell simulation equipment than by trainers who have received formal education (Kardong-Edgren et al., 2012). Known best practices include debriefing by a facilitator educated in the debriefing process, using techniques that promote an open environment, confidentiality, self-reflection, assessment, and analysis. Debriefing should be conducted by someone who observed the simulation and be based on the objectives of the learning experi-

ence and a structured framework (Decker et al., 2013; Dreifuerst & Decker, 2012).

Simulation Framework

One approach to organizing the consistency of variables in simulation scenario design and implementation is the The Nursing Education Simulation Framework, which was used in the National Simulation Study. This framework provided an empirically supported model to guide the simulation design and implementation of the simulations throughout the study. The framework was originally based on the insights gained from the theoretical and empirical literature related to simulations in nursing, medicine, and other health care disciplines as well as non–health care disciplines. The framework has been used and tested by various educational researchers, including master's and doctoral students (Jeffries et al., 2011; Reese, 2014).

The framework has five components, as shown in Figure 1. Each variable is operationalized through a number of other variables. The five components are facilitator, participant, educational practices that need to be incorporated into the simulation, simulation design characteristics, and expected participant outcomes. The framework is grounded in the theories focused on learner-centered practices, constructivism, and sociocultural collaboration among individuals with different sociocultural backgrounds (Jeffries, 2012).

Simulation Design

The selection of simulations is of utmost importance for positive student outcomes. When selecting simulations, faculty should keep in mind the activities and encounters that correspond to the objectives of the nursing curriculum that learners need to experience. In the national study, simulation was used as part of the clinical educational component in all nursing clinical courses except the capstone experience so that the simulations represented both depth and breadth of experiences throughout the curriculum. Individual programs may need to adapt this model to focus on particular courses or curricular concepts instead.

All simulations chosen for the study included five design characteristics: objectives, fidelity, problem solving, student support, and debriefing. The simulation topics in the study were based on a survey of faculty members (Kardong-Edgren, Jeffries, & Kamerer, 2014). Priority topics were determined by simulation faculty from the International Nursing Association of Clinical Simulation and Learning, and by members of the Simulation Innovation Resource Center, based on their own curricula, and course and program outcomes. Study faculty from the 10 schools then narrowed down the concepts and suggested scenarios based on their own experiences, courses, and program outcomes. Simulations were purchased from vendors and publish-