

Graduate Nurses' Perception of the Effect of Simulation on Reducing the Theory-Practice Gap

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Abstract

Graduate nurses employed in high-acuity areas can experience a deficit in integrating theoretical concepts in the clinical environment, which is known as the theory-practice gap; this may result in a risk to patient safety with the potential for negative outcomes. Most existing literature address the existence of the theory-practice gap and the benefit of simulation from a faculty perspective. The purpose of this study was to explore the theory-practice gap from the perspectives of graduate nurses based on their experiences and to determine their perceptions of simulation in prelicensure programs as a strategy to address and reduce the gap prior to entry to practice. Cognitive constructivism was the conceptual framework that guided this study. A qualitative phenomenological design was used to explore the lived experiences of 13 graduate nurses with 2 years of less clinical experience by engaging in semistructured interviews. Data analysis revealed that all the graduates experienced the theory-practice gap on their transition to independent clinical practice with variations in degree. In addition, the graduates voiced aspects of their programs which contributed to reducing the challenges experienced during the transition period. The crucial finding was graduate nurses perceived the theory-practice gap could be reduced through the use of high-fidelity simulation utilizing scenario-based learning exercises in prelicensure programs prior to entry to practice.

Keywords

theory-practice gap, simulation, scenario-based learning, graduate nurses, nursing

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Introduction

Nursing education includes classroom and clinical instruction, with the goal of demonstrating competence in clinical skills based on learned theoretical concepts (Scully, 2011). However, for new graduate nurses, there is a deficit between demonstrated clinical skills and theoretical knowledge obtained in nursing prelicensure education or preparation (Ajani & Moez, 2011; Corlett, 2000; Hussein & Osuji, 2016). In addition, graduates often perceive a lack of congruence between what was taught and the actualities faced in the clinical area (Gardiner & Sheen, 2016). This incongruence, graduate nurses who are theoretically but not practically equipped to apply theory and knowledge to practice in the clinical environment, is referred to as the theory-practice gap (Gardiner & Sheen, 2016; Scully, 2011). The theory-practice gap is concerning for the profession of nursing as its effects negatively impact patient safety. In addition, the deficit experienced by the new graduates

contributes to decreased job satisfaction, increased job turnover rates, and increased patient-care errors (Salifu, Gross, Salifu, & Ninnoni, 2018).

Although the theory-practice gap is predominantly visible in the clinical environment, the problem stems from the educational environments where nurses are being prepared to practice. Faculty involved in nursing education play a significant role in the identification of factors contributing to the gap and can integrate actions to eliminate or reduce its existence (Hussein & Osuji, 2016). Nurse educators have a responsibility to introduce theoretical concepts and also to socialize students

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to the practice and environments where they apply the theoretical concepts (Esmaeili, Cheraghi, Salsali, & Ghiyasvandian, 2014; Saifan, AbuRuz, & Masa'deh, 2015). Nurse educators must provide opportunities for students to learn outside of lecture to link theoretical concepts to practice (Montayre, 2015).

Literature Review

While theoretical concepts are taught in the classroom, the ability to apply these concepts is limited in the clinical area due to the lack of instructor control of patient acuity (Kaddoura, 2010), reducing the student's opportunity to reinforce or apply the theory to practice. In addition, a decreasing number of qualified faculty and limited access to clinical placement sites contributes to a reduction in clinical learning opportunities for students to apply theoretical concepts (Robinson & Dearmon, 2013; Zapko, Ferranto, Blasiman, & Shelestak, 2018). Yuan, Williams, and Fang (2012) and adds that patient access is limited in high-acuity areas which diminishes learning opportunities for students. These factors have been cited as major contributors to the theory-practice gap for new graduate nurses globally. Despite these limitations, graduate nurses must be prepared to care for acutely ill patients with competence (Gardiner & Sheen, 2016).

Simulation includes a set of interactive activities designed to mimic real encounters and allow for repetition and reflection on actions in a risk-free environment (Bevan, Joy, Keely, & Brown, 2015; Bortolato-Major et al., 2018). Simulated experiences offer an engaging teaching method to reinforce and evaluate competence in practical skills, critical thinking, and decision-making through the utilization of knowledge promoting a connection between theory and practice (Brown, 2015). Active participation in simulated exercises allows for repetition of skills, providing students the opportunity to learn from errors without risk of harm to life. The repetition of skills benefits students, as they learn from their mistakes, develop competence, and support theory comprehension (Bevan et al., 2015). Simulated exercises can be adjusted to learner skill and knowledge level, increasing in complexity to reflect the real patient-care areas (Cant & Cooper, 2010). Such learner-centered activities can be integrated into the curriculum to support individualized learning.

During a simulated activity, the cognitive and social processes that foster meaningful learning include the learner's recall of previous knowledge, interaction with their environment, the decision-making process, and actions based on previous knowledge, concluding with the process of reflection on the experience during the debriefing. Findings from a 2014 study conducted by the National State Boards of Nursing revealed that

high-quality simulated learning activities that utilized best standards of practice are commensurate to clinical learning and can be used as an alternate for up to 50% of clinical experiences (Barber & Schuessler, 2017; Doolen et al., 2016). Bastable (2014) added that authentic clinical exposure should follow simulated experiences providing an actual experience where skills and knowledge can be combined.

There is extensive research on the theory-practice gap in the discipline of nursing and on the use of simulation in nursing education. However, more research is required as support for simulation technology to be used in prelicensure institutions as a tool to specifically address the theory-practice gap experienced in clinical practice. Addressing the theory-practice gap prior to entry to practice may reduce the difficulties experienced by the graduates and increase the likelihood of their ability to integrate their knowledge appropriately in the practice setting. This study builds on research in this area by exploring the experiences of graduate nurses in the clinical area and exploring their perception of the use of simulation technology in prelicensure programs in addressing and reducing the theory-practice gap.

Methods

Research Design

This study was designed using an exploratory qualitative phenomenological approach to examine the graduates' opinion of the disparity between their knowledge and their clinical performance and to explore their experiences and perceptions of the value of simulation in prelicensure programs in addressing their deficits. The nature of the phenomenological approach lends itself to the researcher's ability to explore and elucidate the deeper meaning of the experiences as described by the participant, the central data source (Lodico, Spaulding, & Voegtle, 2010; Polit & Beck, 2010). Data were collected through semistructured interviews.

The conceptual foundation for this study was the theory of cognitive constructivism, which implies learners construct understanding and hence knowledge through actively engaging and participating in activities (Fosnot, 2013). Constructivism is based on the use of previous knowledge during an encounter to create new meanings and expand understanding (Neil & Wotton, 2011).

Research Questions

Central Research Question: Is simulation an effective instructional strategy in prelicensure nursing programs to address the theory-practice gap experienced by graduate nurses on entry to clinical practice?

Subquestion 1: What are the graduate nurses' perceptions of their ability to apply learned theoretical concepts in their clinical practice?

Subquestion 2: What strategies do graduates believe could be implemented in prelicensure programs to facilitate the application of theory to clinical practice?

Subquestion 3: What are the graduates' perceptions of the impact of simulation on their application of theory to practice in the clinical area?

Participants and Recruitment

The target population for data collection was graduate nurses employed at a community hospital in Northern New Jersey. Ethical approval was obtained from Walden University (approval number: 06-01-17-0246087) and the hospital's Investigative Committee on Clinical Research prior to the recruitment of participants. Participants were recruited through purposive sampling based on years of clinical experience and their ability to contribute to the purpose of this study. Participation in the study was voluntary with no compensation for participation.

Recruitment occurred through employee e-mail. A contact e-mail was sent to a pool of 36 nurses employed over a 4-month period in 2015, which included the inclusion criteria, interview protocol, and description of the study. Nurses were eligible to participate in the study if they were English speaking, graduated from an accredited school of nursing within the last 5 years, participated in simulated exercises during prelicensure preparation, had a maximum of 2 years' clinical experience since completing the program, and were employed at the research site.

Individuals interested in obtaining more information were asked to contact the investigator, following which they were e-mailed the research consent. Before the scheduling of the interviews, a return e-mail with the words "I consent" from each nurse was required as an indication of voluntary participation in the study. The sampling process ended when enough data were available to provide a rich description of the phenomenon under study, and no new data emerged through additional interviews. Thirteen nurses were interviewed for this study.

Data Collection and Analysis

Data were collected by the author through individual, in-depth, semistructured interviews. The interview guide contained author developed open-ended questions and associated probes guided by the Casey Fink Graduate

Nurse Experience Survey, a 42-item valid and reliable tool, to evaluate the experiences of graduate nurses' transition to the clinical environment with an internal consistency (Cronbach's α) for all factors measured calculated as $\alpha = .89$ (Casey, Fink, Krugman, & Propst, 2004). The survey tool was amended with permission from the authors. Face validity of the amended questions was evaluated by five graduate nurses who met the inclusion criteria but were not included in the study. During the pilot test, the nurses were tasked with reviewing the questions for ambiguity and alignment with the stated purpose of the study. Feedback from four of the five nurses identified questions that elicited a similar response, prompting minor revisions to the interview protocol.

Data collection occurred over a period of 8 weeks; each interview was approximately 40 to 60 minutes in duration. Narrative data were audio-recorded with permission from the participants and subsequently transcribed verbatim. The perceptions of the 13 nurses were collected based on their retrospective description and evaluation of their experiences as new graduates in the clinical area. The nurses were requested to determine whether they experienced a disparity between their knowledge and their clinical performance and discuss the effects of this disparity on their practice. In addition, open-ended questions were used to permit the nurses to reflect on their experience with simulation technology in their respective prelicensure programs and determine whether simulation had an effect on reducing their challenges. Data were collected and analyzed concurrently; manual coding ensued following each interview using Excel software to manage the data.

Data analysis was achieved through an iterative and inductive process, adhering to Moustaka's modified version of the Stevick-Coalazzi-Keen's method of data analysis as summarized and presented by Creswell (2007, 2012). The investigator utilized the following procedure: (a) immersion in the data by listening to the audio-recorded interviews, transcribing verbatim, and reviewing and rereading all the interview transcripts, to explore and ascertain possible meanings of the data; (b) evaluating each statement based on its own value; (c) methodically categorizing significant statements into meaningful patterns or discrete codes; and (d) organizing and revising the codes utilizing thematic analysis which resulted in 4 themes and 12 subthemes.

Triangulation, peer debriefing, and member checking helped ensure trustworthiness (Creswell, 2014). Graduate nurses represented five different prelicensure nursing programs. A colleague knowledgeable in the research philosophy and also experienced with simulation technology in academia reviewed the results to check for bias and accuracy of findings impartially, satisfying peer debriefing. Finally, after initiating

member checks, 12 of the 13 participants provided feedback on the transcribed document and the results, unanimously agreeing the data accurately reflected their perceptions and experiences as reported.

Results

Sample Characteristics

Of the 13 participants, 11 were females and 2 were males. The age range was 23 to 45 years, with 8 to 20 months clinical experience working in varied specialties within the research organization. Graduates represented five different prelicensure programs throughout the United States and graduated within the past 5 years. The sampling process ended when no new data emerged during the interviews. Participant demographics are presented in Table 1, and pseudonyms were assigned to ensure anonymity.

Findings

The descriptions of the clinical experiences were consistent, with all participants reporting they experienced the theory-practice gap as defined. Consequent to data collection and analysis, four themes emerged: (a) the transition period, (b) preparation for practice, (c) merging knowledge into practice, and (d) simulation-based learning. The study findings are presented under the four themes. The study findings are presented under the four themes.

Theme 1: The Transition Period

All 13 graduate nurses reflected experiencing similar difficulties in integrating theoretical knowledge to practice during the transitional period. Further analysis of the

statements revealed three subthemes: *the graduate nurse experience*, *clinical orientation*, and *role transition*.

The graduate nurse experience. The participants described their initial experiences as “overwhelming, knowledge overload, difficult, challenging, and intimidating.”

“... What you learn on paper and a patient presentation is so different, I felt prepared to complete tasks. Tasks were great...critical thinking not so much.” John working on the telemetry unit for 8 months described difficulty prioritizing and providing care for the critically ill; he stated, “It was not that I didn’t have an idea in my head of what was going on or what to do, it was just initially hard to pull out what to do in that instance or what to do first.” Another participant reflected on his experience with prioritization during his prelicensure training and summarized that the practice environment was quite different from what was given in the classroom when being tested on prioritization.

All participants offered that they experienced the theory-practice gap in the practice area with varied levels of difficulty. In general, the participants reported a period ranging from 9 to 18 months before they were comfortable with their independent application of theoretical knowledge in the patient-care environment. John reported that his level of comfort with some aspects of the nurse’s role stemmed from active participation in simulation-based learning exercises (SBLEs) as a student.

Clinical orientation. Twelve of the 13 participants reported that the clinical orientation process was a positive experience. They reported the use of constructive feedback to promote professional growth due to knowledgeable preceptors and staff who were open to questions and

Table 1. Participant Demographics ($n = 13$).

Participants (pseudonyms used)	Gender	Age	Months in practice	Degree attained	Area of specialty
Rose	Female	28	20	Diploma	Pulmonary
Zinnia	Female	27	9	Diploma	Renal
Maria	Female		9	Diploma	Emergency department
June	Female	26	9	Diploma	Telemetry
Venus	Female	28	9	Diploma	Pulmonary
John	Male	28	8	Diploma	Telemetry
Paris	Female	37	10	BSN	Renal
Alex	Female	23	8	BSN	Pulmonary
Kenya	Female	28	19	Diploma	Telemetry
Diane	Female	28	9	Diploma	Emergency department
Deana	Female	23	10	ADN	Pulmonary
Carlos	Male	35	8	MSN	Emergency department
Kathy	Female	45	8	Diploma	Neurology

Note. ADN = associate degree in nursing; BSN = bachelor of science in nursing; MSN = master of science in nursing.

assisting with unfamiliar tasks and responsibilities. One participant, however, experienced inconsistencies with preceptors relating poor communication skills and the demonstration of inconsistent clinical practices, which she felt contributed to the difficulty in acclimatizing to the unit and her role thereby heightening the challenge.

Role transition. The common challenges associated with the role transition from student to nurse were reported as “Difficulty communicating with healthcare providers, time management, and prioritization of care.” Two participants clearly articulated that some of their initial anxieties were based on the transition moving from being a student working with an instructor to a nurse working independently in the clinical area and relying on their limited knowledge.

Zinnia, a graduate with 9 months experience, reported feeling overwhelmed by her responsibilities and workload. She shared, “I had some of the experiences in nursing school, but when I became a nurse it was a totally different experience.” Paris compared practicing prioritizing care as a classroom activity and during testing with prioritization in the clinical environment as being totally different, stating “. . . thinking and putting it on paper is a lot easier than actually doing it in the clinical area.”

Maria with a 9-month clinical experience working in the emergency department reflected on the lack of experience in the setting and with the acuity of the patient presentation, citing these as the basis for her initial and continued fears of emergent cases. Although Maria also had exposure to emergency room nursing as a student, the clinical rotation was purely observational and did not prepare her adequately for a role as a registered nurse in the environment.

Alex shared her experience transitioning to her role as,

I feel like I learned about this, the things I would have to do, and at that point I could understand it, but I think there are some responsibilities that you only learn about when you are actually in the field that is different when you are a student.

Venus reported her initial 9 months on the pulmonary floor was also very challenging with difficulties with prioritization, caring for the critically ill ventilated patient, and time management. Kenya reported,

As a new graduate, I was scared, I wasn't as confident for so many reasons. . . It was overwhelming in the beginning. . . As students, there were things we weren't exposed to and things we didn't know we were supposed to be looking at when we became graduates. . . so obviously there was a disconnect.

Theme 2: Preparation for Practice

The participants were asked to reflect on strategies that enhanced their ability to integrate theory into practice. Responses to these questions included suggestions on their perceived best practices based on their personal experiences. Interview questions prompted responses which yielded two subthemes: *role preparation* and *perceived educational best practices*.

Role preparation. The participants verbalized being unprepared for the comprehensive roles of a nurse was a factor in the hardships they encountered during their transition to clinical practice. One participant reported, “Nursing school prepared me with textbook material to be successful in the licensure exam, but you don't know about the full extent of your role until you are in the field.” The general consensus was that being involved in patient care in the clinical area as a student was not always reflective of the roles of the nurse in its entirety, which contributed profoundly to the deficit they felt upon entry to practice.

Participants acknowledged the need to have diverse experiences that portray the actual roles and responsibilities of the nurse. One participant mentioned not being fully able to grasp the collaborative and multifaceted role the nurse embodies while providing care as a student. Most participants admitted that there might be practice limitations during the clinical experience, but voiced simulated exercises could potentially introduce students to the additional roles and functions of the nurse in a safe environment.

Perceived educational best practices. Most of the participants referred to their learning style as being visual, kinesthetic, or a combination of both. The learning environments they described portrayed learning activities supportive of both learning styles, with learners benefitting from participating in active teaching learning strategies, specifically simulation. Nursing education involves theory in combination with experiences or activities to apply the theory in practice. The extent of this combination varies from institution to institution, resulting in graduates with wide-ranging experiences and different levels of competence on entry to practice.

Additional best practices as perceived by the graduates for prelicensure programs to adopt to prepare students to transition as graduates based on their experiences include:

- Have students administer more medications during clinical rotations.
- Increase patient assignments to expose students to the realities of having a typical patient load, practice time management, and prioritization of care.

- Include more high-fidelity simulation-based learning experiences with realistic patient-care scenarios to promote application of knowledge.
- Integrate comprehensive debriefing sessions immediately following simulated exercises to foster, recall, and reinforce theoretical concepts.
- Include students in other nursing roles, for example, communicating with other members of the health-care team.

Theme 3: Merging Knowledge into Practice

The participants' responses to questions referencing their preparation for practice generated answers that led to the third theme, merging knowledge into practice. The participants answered questions which allowed them to verbalize their perceptions concerning their experiences that impacted their ability to integrate theory to practice. The responses generated the following subthemes: *prelicensure environments*, *prelicensure preparation*, and *postlicensure environments*.

Prelicensure environments. Diane shared a unique experience, having been unsuccessful in a previous nursing program, and completing her education at a 2-year diploma program in 3 years following an unsuccessful semester; she had the advantage of comparing both programs during the interview. Diane appreciated the preparation she received in the last program more because she felt the simulated learning environments presented were more comprehensive in incorporating realistic patient-care scenarios, were not merely task-oriented, and included higher fidelity technology than what was offered in her former program. She felt her ability to participate in these exercises solidified her knowledge and prepared her to be more effective in the clinical environment as a student and as a graduate. Diane also cited early and lengthy clinical rotations as a key element in supporting her competence in clinical skills and application of theoretical knowledge in her practice.

In contrast, Alex stated that she felt deficient and inadequate as a graduate nurse because her clinical experience and exposure to simulated learning were both limited. Alex reported having one to two patients to care for, with partial responsibilities and rare medication administration experiences, particularly for parenteral routes. With exposure to low- to medium-fidelity simulation technology in her prelicensure program, Alex felt that these exercises did little to reinforce her knowledge or critical thinking but helped with skill mastery. Graduates who participated in high-fidelity SBLEs expressed how their knowledge base increased and their practice changed following the exercises, while

graduates who participated in task-based training referenced a change in confidence and skill competency only.

Prelicensure preparation. The question seeking to identify what aspect(s) of the preparation during prelicensure training that was most beneficial in preparing them for practice, yielded the following responses: "A combination of classroom, simulation and clinical," "the simulations and clinical instructor teaching style," "the simulation labs that gave me opportunity to practice," "the timing of the simulation with the classroom teaching," "the consistency and frequency of clinical experiences," and "the amount of time in clinical." In general, the participants reported a combination of clinical, simulation, and classroom lecture time, in addition to increased exposure to patients in the clinical environments as key elements in preparing them to be effective clinicians in the clinical area.

Of the 13 participants, 3 graduates reported deficiencies in clinical hours reporting only one 5- to 6-hour clinical day with one to two patients, compared with the 13 to 16 hours per week in clinical with two to four patients of the other respondents. The three participants who spent less time in the clinical area as students shared their perceptions of inadequacy upon entry to practice. One participant reported learning more about being a nurse, managing a patient load, time management, and prioritization during the new graduate orientation program than she did during prelicensure preparation. In addition, the three participants rated their competence negatively in the areas of nursing documentation, medication administration, prioritization, and clinical skills to other graduates who had lengthier clinical times, high-fidelity scenario-based learning, and more patient exposure.

Postlicensure environments. For Diane, as a graduate nurse, working in the emergency department was very challenging. Diane explained,

I didn't have the knowledge base that I needed to do things, and even this far in I still don't feel 100% confident doing everything I need to do . . . and . . . I had a lack of experience, even though I had some foundation it wasn't enough. . .

Rose reported feeling competent in caring for the stable medical-surgical patient, ". . . we got a lot of experience with that in nursing school" but encountered difficulties caring for acutely ill or unstable patients requiring additional ventilation support. In general, graduates employed to specialist areas such as the emergency department and the telemetry unit voiced increased hardships applying their knowledge in these settings.

Theme 4: Simulation-Based Learning

All participants experienced simulated learning during prelicensure preparation. Two participants participated in low-fidelity task simulated exercises infrequently during the academic year, unlike the other graduates who participated in medium- to high-fidelity simulated exercises with patient-care scenarios. As the participants voiced their perceptions of their experiences during simulated learning, four subthemes emerged: *student engagement*, *simulation supporting learning*, *simulations impact on practice*, and *frequency of simulation*.

Student engagement. Eleven participants reported in most instances simulated exercises extended beyond skill acquisition and mastery and included scenarios where they were faced with opportunities to participate in team communication, practice clinical judgment in prioritization and clinical decision-making, and perform nursing interventions in a realistic environment. A recurrent perception among these participants was the high level of interaction and engagement facilitated through participation in simulated exercises involving groups or teams. Alex appreciated the opportunity to hone in on her assessment skills during simulation with hands-on experience; also having “real actors” during select exercises enhanced the realism and offered the opportunity to engage in communication particularly suited for history taking.

A benefit of simulation is the cooperative learning environment that is created where students learn by doing and learn from each other. John and Kenya reported developing an appreciation for working with other students in these environments as they learned through the interaction and learned from each other’s strengths and weaknesses. Piaget and Vygotsky both posit that learning occurs best through interaction and collaboration in instructive environments, suggesting learning is a social process (As cited in Bastable, 2014; Clapper, 2015).

Simulation supporting learning. In response to the most beneficial aspect(s) of simulated learning, participants named the realistic scenarios, the ability to make mistakes without causing harm, the opportunity to practice and repeat skills, and the debriefing session directly following the exercise. Kenya admitted that the videos recorded during the exercise and played back during the debriefing sessions were embarrassing but offered “...being able to view my actions was an eye opener which allowed me to put things in perspective.” Most participants reported that they received constructive criticism and were able to reflect on their actions and identify areas of strengths and weaknesses during the debriefing exercise. The graduates who participated in

structured debriefing exercises asserted the feedback received helped with reinforcing existing knowledge and developing new concepts.

Simulations impact on practice. When asked if they believed participating in simulation impacted how they currently practice, 11 of the graduates responded positively surmising their practice was enhanced by their level of participation in SBLE during preparatory training stating:

I wouldn’t have been so confident when performing my job.

I remember some scenarios I did in school, that helped me when I first started.

The scenarios were so real it helped prepare me for what I would face as a nurse.

I don’t think my practice would be any different; I just know it helped me understand how to do things, and how things worked.

Most participants reported their belief that their ability to practice with competence and confidence was directly related to their simulated learning experiences.

Frequency of simulation. Some participants reported sporadic exposure to simulated learning, on average less than twice per semester, and often limited to task training using low- and medium-fidelity technology. The participants who voiced the most benefit from simulation reported exposure to the simulated learning several times each semester and included the use of medium- to high-fidelity technology. Finally, all participants agreed that high-fidelity simulation with the inclusion of realistic scenarios would be most beneficial when introduced early in the curriculum and repeatedly through each semester to promote and strengthen the integration of theory in clinical practice.

Discussion and Implications for Nursing

The findings resulting from the data analysis is consistent with the existing literature that supports the theory-practice gap as a bona fide experience and challenge for graduate nurses regardless of academic preparation. All participants, regardless of their level of degree attainment or program, attended recalled difficulty integrating theory into clinical practice as an adversity they all faced. Many participants voiced that they were adequately prepared in theory but had difficulty when confronted with the complexities of patient care as independent practitioners, prompting concerns for patient safety. Increased errors associated with medication

administration, patient falls, and sentinel events accounted for negative clinical outcomes associated with novice nurses not adequately prepared to function in the clinical area (Hickerson, Taylor, & Terhaar, 2016).

In general, the participants felt overwhelmed at the vast responsibilities and roles of the registered nurse which intensified the difficulties experienced on entry to practice. The challenges they faced were not only limited to the integration of knowledge but also adapting to the expectations in the clinical environment. These concerns were consistent with trepidations of a wider graduate population. Socialization to the roles of a nurse and the demands associated with clinical practice is challenging at best for first-year graduate nurses (Bull, Shearer, Phillips, & Fallon, 2015). Some participants felt that they were not prepared or equipped to perform these roles or accept the responsibilities in part, due to inadequate and unpredictable exposure during prelicensure preparation.

The study identified inconsistencies in prelicensure nursing programs regarding strategies to foster application and integration of theory in clinical practice, possibly contributing to a theory-practice gap experienced by graduate nurses globally. A recurrent perception held by the participants was being exceptionally prepared for the National Council Licensure Examination but not equipped to fulfill the requirements associated with nursing at the bedside. Many voiced 9 to 18 months as the average time to acclimatize to the roles; in addition, and consistent with the literature, they envisaged an increased exposure to these roles (in the actual clinical or simulated environment) during prelicensure training may reduce the challenge and the period of acclimatization upon entering clinical practice. Nurse educators should present nursing students with increased opportunities to integrate theory into practice and familiarize with the varied roles and expectations of the registered nurse. Nurse educators must integrate active teaching strategies that merge knowledge and skills with real-world experiences (Flood & Robinia, 2014; Kalayi & Akintola, 2013).

Reflecting on their pre- and postlicensure experiences the participants shared strategies they believed could prepare students to better transition as graduate nurses and specifically address the theory-practice gap. The most common suggestion was to integrate more simulation technology through the training period. The participants believed that they benefited exponentially from high-fidelity simulation, simulations utilizing complex patient-care scenarios, the use of standardized patients, and when simulated exercises were strategically placed to correspond with the content taught in the classroom.

Most participants credited the use of high-fidelity technology in enhancing their learning experiences by creating experiences similar to that of the practice

environment. The findings add to existing research supporting simulation technology as a superior instructional strategy to support didactic teaching. A meta-analysis by Shin, Park, and Kim (2015) established simulation as a practical approach to real-world patient-care situations that fostered learning and practice of psychomotor skills without risk. However, a recurrent perception by the participants was that consistent use of low-fidelity technology and equipment that failed to work during SBLEs detracted from the value that could be achieved from the experiences. These responses are consistent with the literature that report simulated experiences that mimic real patient-care environments, including patient-focused scenarios eliciting patient-like responses are best suited to engage students, promote critical thinking, and integrate classroom and clinical learning (Carson & Harder, 2016; Flood & Robinia, 2014; Sanford, 2010).

The input from the participants added to the body of literature affirming that participating in well-designed simulation-based exercises using high-fidelity technology and incorporating realistic patient-care scenarios to promote decision-making, prioritization of care, and communication were optimal options to support theory integration and address the theory-practice gap prior to entry to practice. Simulation-based learning offers a safe environment to recreate realistic patient-care situations where students can develop task mastery and clinical reasoning (Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014). Dynamic-simulated learning scenarios integrating unfolding case studies with changing patient status allow for the incorporation of critical thinking, challenge participant decision-making, and bolster clinical judgment providing a more realistic learning experience (Barber & Schuessler, 2017).

In addition, the participants shared that all simulated experiences were not beneficial, asserting the outcome is reliant on the quality of the experience. Participants reported most benefit from simulations that included high-fidelity technology, realistic patient-care simulation-based learning exercises, the use of standardized patients, a high level of realism in simulated exercises, opportunities to build communication, simulations facilitated by knowledgeable educators, and comprehensive debriefing.

There was a constant emphasis on the value obtained from participating in expertly led debriefing exercises immediately following the exercises. This assertion is corroborated extensively in the literature; a critical element to facilitate and safeguard transfer of learning in simulation-based learning is through the provision of deliberate, timely, and purposeful feedback during the debriefing exercise (Motola, Devine, Chung, Sullivan, & Issenberg, 2013). Pilcher et al. (2012) reinforced that participation in the activity alone was inadequate in guaranteeing transfer of knowledge and identified the

facilitator-led debriefing following the simulation-based learning activity as paramount in ensuring comprehension and learning. The International Nursing Association for Clinical Simulation and Learning's standard VI best practice posits that all simulated experiences be followed by a debriefing session led by an individual proficient in the art of debriefing to facilitate the participants' reflection on their actions during the exercise (Sittner et al., 2015).

The participants believed that the ability to integrate learned theoretical content in the clinical area and beyond would be substantially enhanced if high-fidelity SBLEs were introduced early and with increased frequency through the curriculum in prelicensure programs. The task to integrate simulated learning experiences must, therefore, be purposeful and directed. Simulated learning activities must be deliberate and structured to evoke a transfer of learning by providing realistic patient-care scenarios or situations (Carson & Harder, 2016). For simulation-based learning to be beneficial, the exercises must align with clearly stated and well-developed objectives, be authentic, and mimic reality as closely as possible (Jeffries, 2005).

As the use of high-fidelity simulation increases in prelicensure programs, there is a plethora of research supporting simulation as beneficial in improving student satisfaction and confidence. At the time of this research, there was still dialogue regarding the lack of a consistent evaluation tool that was valid and reliable to gauge the effect of high-fidelity simulation and student learning (Doolen et al., 2016; Fey & Kardong-Edgren, 2017; Watts, Ivankova, & Moss, 2017). The participants in this study add to this dialogue as they perceived learning was enhanced as a direct result of participation in well-designed SBLEs immediately followed by facilitated debriefing but suggest consistency in practice and adherence to best practices through the exercises and the curriculum.

The chief implication of this study is the suggestion of a change in institutional academic policies that reflect an integration of SBLEs with increased frequency through the curriculum as a superior standard of practice for prelicensure programs to adopt to address the theory-practice gap during preparatory training and support the transition to clinical practice. Providing simulated learning experiences consistently throughout the curriculum actively engages students in opportunities to improve confidence, support knowledge retention, and develop competence in skill (Jarvill et al., 2017; Mariani & Doolen, 2016; Zapko et al., 2018).

Limitations

The selective recruitment used in this study resulted in a sample comprised of graduates employed at a single

community-based hospital, which may limit the generalizability of the findings. Other hospitals may offer more or less extensive orientation processes that might impact the graduate nurse experience but does not specifically address the theory-practice gap. Although the graduates opined on several measures to address this deficit, the focus of this study was on a single instructional strategy; therefore, there is the potential to explore alternate options to support the integration of theory to practice in prelicensure programs.

Conclusion and Implications

The aim of this study was to explore the graduates' experiences on entry to clinical practice. Their descriptions closely mirror the existing definition of the theory-practice gap, a hardship they all faced. In addition, all participants attested to the value of simulation technology when used appropriately to support the integration of their theoretical knowledge into practice, thereby a reasonable effort to reduce the theory-practice gap experience.

Responses from the participants supported the use of high-fidelity simulation technology using scenario-based learning exercises as a viable instructional strategy to enhance the application of learned theoretical concepts in the learning environment and clinical practice. Suggestions from the participants as to what constitutes best practices have been well researched and mirror the International Nursing Association for Clinical Simulation and Learning's 2013 revised standards, specifically relating to the educator's professional integrity, the process of facilitation, and the debriefing process (Rutherford-Hemming, Lioce, & Durham, 2015). In light of these results, the integration of scenario-based high-fidelity simulated exercises, facilitated by dedicated faculty and the participation in reflective debriefing exercises immediately following the experience, seems to be an appropriate strategy to promote the integration of theory into clinical practice and thereby reduce the theory-practice gap for new graduate nurses.

The findings from this study should prompt curriculum revisions to integrate best practices and evidence-based strategies including learning activities using high-fidelity simulation technology to augment instruction that will have a bearing on addressing and possibly reducing the theory-practice gap for graduates entering clinical practice. To ensure this benefit, the learning activities should include patient-care scenarios that closely mimic the real patient-care environment, appropriate for the knowledge level of the student, facilitated by trained faculty, and immediately followed by active and engaging debriefing exercises. The far-reaching consequence is the amplified ability for graduates to critically think, make sound clinical judgments, and easily integrate theoretical concepts

into practice evidenced by enhanced patient safety and improved patient outcomes.

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