

**SCHOOL NURSING SIMULATION: AN EVIDENCE-BASED PRACTICE
INTERVENTION FOR IMPROVED CONFIDENCE IN HEALTH-RELATED SCHOOL
EMERGENCY FIRST-RESPONDER ROLE**

by

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Abstract

School nursing practice occurs in an autonomous clinical practice setting in which school nurses function as first-responders to life-threatening school emergencies. However, a gap in school nursing practice preparation exists due to a lack of pediatric first-responder experience or training. Following evidence-based school nursing simulation interventions, the current longitudinal descriptive mixed method doctoral project analyzed participants' self-perceived gains in knowledge, skills, confidence, and integration as measures of clinical and leadership improvements. The convenience sample of post-licensure registered nurse practicing school nurses (PSN) graduate students ($n=37$) in California completed pre and post simulation evaluations generated from the Student Assessment of Their Learning Gains (SALG) instrument. A paired two-tailed t test with a 95% confidence interval resulted in statistically significant findings for all but two of the 40 comparative statements. The results conveyed simulation should be considered for future learning venues due to the significant impact on school nurses' confidence, critical reasoning, and clinical judgement.

Introduction

School Nursing Practice Background

The specialty practice of school nursing occurs in an autonomous clinical practice setting in which more often than not the school nurse is the only health care professional available to school staff and is the primary health services provider for children while at school (Baker, Hebbeler, Davis-Alldritt, Anderson, & Knauer, 2015; National Association of School Nurses [NASN], 2011; 2014b). The role the school nurse plays is significant because it is important to ensure that the healthcare needs of children ages five through eighteen; who spend the majority of their waking hours in school settings; are addressed while at school (Knauer, Baker, Hebbeler, & Davis-Alldritt, 2015; Olympia, Wan, & Avner, 2005). Functioning as a first-responder to health-related life-threatening school emergencies is one component of the school nurse's direct care services role (NASN, 2011). Due in part to an increase prevalence of chronic conditions in children which can quickly escalate to a life-threatening status, school nurses need to be proficient in managing health-related emergencies which are not included in standard registered nurse educational programs (Baker, Davis-Alldritt, & Hebbler, 2014; Cavanaugh & Strickland, 2011; Centers for Disease Control and Prevention [CDC], 2013; Cosby, Miller, & Youngman, 2013; Council on School Health, 2008a, 2008b; Gibbons, Lehr, & Selekman, 2013; Gupta et al., 2011; Jackson, 2013; NASN, 2012a, 2014a; Sicherer, Mahr, & the Section on Allergy and Immunology, 2010).

However, there is a misalignment or gap between the need for school nurses to be experienced in the assessment and management of health-related emergencies and their preparation prior to entering the specialty. In the United States, part of the gap stems from variations of school nursing practice from state to state (Adams & Barron, 2009).

Inconsistencies include licensing and lack of state dictated certification or credential requirements (Maughan & McCarthy, 2015). Although most states do require licensure as a registered nurse, only 14 of the 50 states require a credentialing process for school nurses (Maughan & McCarthy, 2015). Additionally, in some states; such as California; which do require a credentialing process, nurses may be employed as a school nurse up to five years under a preliminary credential while obtaining the additional school nursing specific education and training to meet clear credentialing criteria. Therefore, many nurses enter into school nursing practice without school nursing specific education or training (Malone & Bergren, 2010; Maughan & McCarthy, 2015).

Another component of the gap in school nursing practice preparation can be attributed to a lack of pediatric first-responder experience or training. The clinical backgrounds of registered nurses who enter school nursing practice often consists of acute care practice areas other than pediatrics or emergency nursing, or they may lack recent clinical experience (Malone & Bergren, 2010). Absent post-licensure pediatric first-responder experience or training, registered nurses often become school nurses without the prerequisite knowledge and skills required to manage prevalent chronic and potentially life-threatening conditions. Confidence in their ability to function as first-responders to health-related emergencies is lacking (Baker et al., 2014; Cavanaugh & Strickland, 2011; CDC, 2013; Cosby et al., 2013; Council on School Health, 2008a, 2008b; Gibbons et al., 2013; Gupta et al., 2011; Jackson, 2013; NASN, 2012a, 2014b; Sicherer et al., 2010).

National surveys, studies, and policies report that there is a need for practicing school nurses to have access to and be provided with learning opportunities to increase their confidence level to manage potential pediatric life-threatening emergencies such as respiratory or systemic

distress associated with asthma, diabetes, anaphylaxis, overdose, and cardiac arrests (Council on School Health, 2008a, 2008b; Hazinski et al., 2004; Hillemeier, Gusic, & Bai, 2006; Malone & Bergren, 2010; Morris, Baker, Belot, & Edwards, 2011; Olympia et al., 2005; Sicherer et al., 2010). Without role specific application opportunities to address the practice gap, there is a greater likelihood of failure to rescue when an emergency does occur (Greiling, Boss, & Wheeler, 2005; Malone & Bergren, 2010; NASN, 2011). When the school nurse fails to recognize early subtle signs and symptoms of serious health conditions and subsequently fails to take the steps necessary to prevent the conditions from escalating, the end result can be disability or death (Greiling et al., 2005; Malone & Bergren, 2010; NASN, 2011; Schubert, 2012). Since school nurses are typically the sole health provider and lead clinician for health rescue situations in a school setting, school staff look to the school nurse for leadership, guidance, and direction for the management of health-related conditions and emergencies (Cosby et al., 2013; NASN, 2011; 2014b). If these failure to rescue conditions and negative outcomes are to be averted, school nurses must have proper clinical and leadership skill sets (Cosby et al., 2013; Council on School Health, 2008b; Morris et al., 2011; NASN, 2011, 2014b; Schubert, 2012).

Life-Threatening School Emergencies

The need for proper leadership attributes and clinical knowledge and skills has risen over the last decade due in part to an increased prevalence of pediatric chronic conditions such as asthma, food allergies, and allergic reactions which can quickly progress to a life-threatening status (Akinbami et al., 2012; Baker et al., 2014; Cavanaugh & Strickland, 2011; CDC, 2013; Cosby et al., 2013; Council on School Health, 2008a, 2008b; Gibbons et al., 2013; Gupta et al., 2011; Jackson, 2013; NASN, 2012a, 2012b; 2014a; Sicherer et al., 2010; Wood et al., 2014). Recent studies show the severity of allergic reactions in children has increased. For example

anaphylaxis is two to four times more likely to manifest in children who have food allergies and asthma or other allergies, which increases the risk of experiencing a fatal reaction (Bird & Burk, 2009; Branum & Lukacs, 2009; NASN, 2012a). Food allergies are now estimated to affect one in 13 (8 %) children in the United States with food allergy reactions from accidental food ingestion at school occurring in 18 % of children diagnosed with a food allergies (Branum & Lukacs, 2009; Gupta et al., 2011; Wahl, Stephens, Ruffo, & Jones, 2015). Further, children without a prior history of food allergy account for about 25% of life-threatening reactions which require treatment with epinephrine in school (Massachusetts Department of Public Health, 2010; McIntyre, Sheetz, Carroll, & Young, 2005).

The increase in prevalence and recent national attention placed on anaphylaxis, food allergies, and asthma has created a heightened awareness of the rapid onset and potentially fatal outcomes of these conditions if not promptly and properly recognized and expeditiously managed at school (CDC, 2013; Public Law 113-48, 113th Congress, 2013- 2015). Although aggregate national school health data is not available from any unified source to substantiate the incidence and prevalence in the school setting, the pressing and urgent need to address the school nursing clinical practice gap exists (Duff & Gerdes, 2014; Baker et al., 2014; Fahrenkrug, 2003; Gordon & Barry, 2006; Greiling et al., 2005; Knauer et al., 2015; Krause-Parello, 2013; Malone & Bergren, 2010; Maughan et al., 2014; NASN & National Association of State School Nurse Consultants, 2014; Patrick et al., 2014). Practicing school nurses need to hone clinical reasoning and judgement skills that are integral to recognizing, detecting, and managing prevalent health conditions with increased morbidity and mortality risks (NASN, 2012a, 2012b, 2014a).

Local Problem in California

Consistent with this practice gap, a published study of practicing California credentialed school nurse stakeholders found various barriers to the inclusion of life-saving stock epinephrine programs in schools (Morris et al., 2011). The findings conveyed school nurses' limited awareness of susceptibility and the immediate life-threatening aspects of anaphylaxis contributed to the absence of stock epinephrine-auto injector programs in schools (Morris et al., 2011). Indicative of a knowledge or practice deficit, only 53% of the survey respondents indicated support for schools to require stock epinephrine. Of the 53% survey respondents who did support the stock epinephrine programs, only 13% reported implementation of the California legislative allowed local stock epinephrine policy and program (Morris et al., 2011).

Similar findings were reported as part of one of California's university's graduate level school nursing credential program. The annual immediate post school nurse credential graduate surveys for successive years reported the number one request for practice and program improvement was the need for additional preparation to recognize and manage health-related emergency situations such as asthma and anaphylaxis (D. Baker, personal communication, November 14, 2013). These local practice findings align with the national concern regarding the school nursing clinical practice gap.

Intended Improvement and Project Question

To address the clinical practice gap, simulation was proposed as an evidence-based school nursing practice quality improvement intervention. The organization planned to trial the simulation intervention during the 2014 fall semester of the PSN' graduate school nurse credential program. In order to create internal evidence to evaluate the effectiveness of the simulation intervention, this evidenced-based practice quality improvement doctoral project was

conducted. The project intervention consisted of participants' completion of pre and post simulation intervention evaluations to answer the clinical question: What impact does health-related emergency simulation have on the critical reasoning and clinical judgment of graduate-level practicing school nurses seeking their school nurse credential at the organization in their clinical practicum in comparison to their pre-simulation intervention baseline?

The primary purpose and initial aim of the project was to evaluate what impact simulation may have on improving participants' health-related school emergency first-responder clinical and leadership skill sets. Outcomes were expected to stem from the PSN' synthesis and integration of the information and experience from the simulation intervention as part of their critical reasoning and clinical judgement processes (Rubenfeld & Scheffer, 2015). By comparing the participant's self-perceived pre and post simulation intervention gains in understanding, skills, attitudes, and integration; improved confidence and clinical judgement was anticipated (Clapper & Kardong-Edgren, 2012). Similarly, improvement in the participants' self-perceived gains in communications, care coordination, teamwork, and empowerment were anticipated as indicators of the leadership components of school nursing practice (Schmidt, Goldhaber-Fiebert, Ho, & McDonald, 2013).

The secondary aim of the project, specific to the organization, was to provide the project findings to the organization for consideration of sustainability and inclusion of simulation as an organizational policy change for the graduate level school nursing credential program.

Methods

Intervention Setting

The first time inclusion of simulation in the school nurse credential program was proposed and planned by the organization's administration, simulation lab director, and school

nurse credential program coordinator to occur during the 2014 fall semester regularly scheduled practicum hours in the organization's lecture halls and simulation lab. The desire to extend the simulation experience to the graduate level school nurse credential program and determine whether ongoing inclusion should become an organizational policy change, was due in part from the successful use of high-fidelity simulation in the organization's undergraduate registered nurse program. Other driving factors included the evidence which supports simulation as a best practice quality improvement intervention in the areas of knowledge and skill acquisition; along with effective communications, safety, confidence, and critical thinking (Aebersold & Tschannen, 2013; Cant & Cooper, 2010; Cook, 2011, 2012, 2013; Decker, Sportsman, Puetz, & Billing, 2009; Durham & Alden, 2008; Norman, 2012; Richardson & Claman, 2014; Schmidt et al., 2013; Schubert, 2012; Wakefield, 2008).

In a safe environment of simulation, PSN' could experience and respond to various presentations of health conditions specifically designed to mimic common health-related school emergencies. The simulation experience could facilitate PSN' gaining clinical skills and the confidence necessary to demonstrate a reduction of the identified practice gap (Schmidt et al., 2013). Further, by providing an opportunity for PSN to practice leading a school staff team through an emergency, the clinical and non-clinical elements that must be addressed simultaneously could be highlighted and integrated. The essential clinical skills, critical reasoning, and judgment needed to function as a first-responder could be practiced and refined. Through the simulation intervention, anticipation and coordination of clinical actions and communications with children's parents, school administrators, emergency medical services, and other health care providers could facilitate transparency, continuity of care, and advocacy.

Project Design: Intervention Planning.

Although the setting and logistics for the simulation were in place, further planning was needed since the existence of published evidence-based simulation pediatric scenarios specific to school nursing clinical practice were non-existent. Garnering input from community stakeholder subject matter experts, collaborative and interprofessional processes were implemented for the development and evaluation of several school nursing specific evidence-based quality improvement simulation scenarios. The California Simulation Alliance ([CSA], n.d.) simulation scenario template was utilized for this endeavor.

The CSA scenario development protocols and peer review publishing guideline criteria contributed to the internal construct and validity of the project. The scenarios required evidence-based practice and the American Association of Colleges of Nursing (AACN) quality and safety education in nursing (QSEN) competency content (AACN and Safety Education in Nursing Education Consortium, 2012; CSA, n.d.). The process resulted in scenarios that were included in the simulation intervention, served as the basis for the project intervention, and have since been published by CSA (n.d.).

In order to address potential internal threats to project validity the Student Assessment of Their Learning Gains (SALG) instrument was selected for the longitudinal descriptive mixed method project design (SALG, n.d.). Since the use of the publically available online generated SALG prototype instrument required no permissions and had published test findings of the instrument's validity and reliability, it was utilized (SALG, n.d.; Seymour, Weise, Hunter, & Daffinrud, 2000). The testing results reported the Likert-type scaled instrument as a valid and reliable method of quantifying learners' perceptions that could be adapted and tailored for any pedagogical approach or discipline. Since any alteration of the SALG core content and structure

was blocked during the online generation; the integrity, validity, and reliability of the instrument developed for the project was preserved (SALG, n.d.). Thus, internal validity threats related to instrumentation, testing, and statistical conclusion validity were minimized for the project specific pre and post instruments (Figure 1 and Figure 2) (Peters, 2012).

Further reasons for selection of the SALG instrument was due to its applicability, adaptably, and alignment with components of the project's framework. Since the core components of the SALG Likert-type scaled statements focused on participants' self-perception of their baseline level and learning gains in understanding, skills, attitudes, and integration; the instrument was easily adapted and tailored to the project focused evaluation statements. Project statements easily aligned to be specific and applicable to the simulation scenarios' QSEN knowledge, skills, and attitudes content and the targeted clinical and leadership aims of the project (Figure 1 and Figure 2). Statements that targeted gains in the recognition and clinical assessment of emergent health-related conditions, implementation of care management and teamwork interventions, confidence and integration in abilities to communicate and function as a first-responder, and other leadership and policy development areas were incorporated. Resultant outcomes generated the project instruments that were to be used to evaluate the simulation interventions (Figure 1 and Figure 2).

Project Design: Methods of Evaluation

Additionally, the SALG instrument seamlessly aligned with the project's theoretical framework which was based in part on the Institute of Medicine ([IOM], 2000, 2003, 2011) reports regarding quality improvement, nursing competencies and quality health care and outcome measurement, and the QSEN projects of the AACN; and the NLN/Jeffries simulation outcome framework (AACN, 2012; Brady, 2011; Cronenwett et al., 2007, 2009; Ravert, 2014).

Combined with the use of a two-tailed paired *t*-test for the statistical analysis, validity for comparative inferences to address the project question and aims was established. The confidence component of critical reasoning and critical thinking theory was the linkage for substantiating the congruent relationships between the SALG instrument, the QSEN knowledge, skills, and attitudes; and the Jeffries simulation outcome measures (Dillard et al., 2009; Ravert, 2014; Rubenfeld & Scheffer, 2015). Any statistically significant gains in understanding and skills were inferred to demonstrate an improvement in critical thinking or reasoning. Any gains in attitudes or confidence were inferred as an improvement in clinical judgment (Ravert, 2014).

Ethical Issues

In addition to considering the interconnected alignment of the anticipated outcomes with quality improvement and simulation theoretical frameworks to infer statistical significant findings, ethical issues were also considered and evaluated as part of the project design. Vetted and approved by the investigator's project committee, in order to maintain anonymity and avoid the identifiers inherent in the SALG online data collection process, a pencil and paper version of the online generated SALG instrument was used to collect data. Similarly, the distribution and collection process of the completed evaluations was designed so that anonymity would be maintained regardless of a participant's opt-out status.

Each paper pre and post simulation evaluation was pre-coded so that participant's pre and post evaluation could be paired for comparison purposes only. There were no other linked identifiers. Evaluations were randomly distributed to potential participants in a sealed envelope. To maintain privacy, once completed participants dropped the evaluations into a sealed cardboard box. The box and its contents were securely transferred to the principal investigator's office where they were securely housed for the duration of the project.

The project intervention was also predicated on the ethical components inherent in the institutional review board (IRB) approval processes of the organization and project investigator's university. The project was exempted by both IRBs. However, consistent with the investigator's university requirement, an exempt status of a signed participant informed consent was developed and disseminated to potential participants two weeks prior to data collection. The consent took the form of a five page document which outlined the voluntary aspects of participation, participant opt-out options, along with anonymity and confidentiality. Due to this consent process, the instrument design, and the fact that the project investigator had no employee or contractual faculty relationship with the organization, confirms no potential ethical concerns or conflicts were identified in connection with the project.

Data Collection

Data collection was initiated by distribution of the project packet to a convenience sample of the 50 potential project participants. The potential participants were part of the organization's fall PSN graduate school nurse credential program 2014 cohort. The project packet consisted of a consent form and a coded set of pre and post evaluation instruments.

The participants were asked to provide two demographics: the number of years as a licensed registered nurse and the number of years as a practicing school nurse. In order to obtain comparative data, participants were asked to complete the Likert-type scaled pre and post simulation intervention evaluations. The evaluations contained statements of the participants' baseline and post intervention self-perceived gains of understanding, skills, attitudes, and practice integration regarding health-related school emergencies (Figure 1 and Figure 2).

The evaluations consisted of 40 Likert-type scaled statements of which twelve were pre and post statements on understanding, nine on skills, 13 on attitudes, and six on integration of

application to practice (Figure 1 and Figure 2). An additional 15 post evaluation non-comparative Likert-type scaled statements addressed the participants' perception of how various components of the simulation experience helped their learning, and development of their leadership skill set (Figure 2). Participants also had the opportunity to respond narratively to two pre and post questions and statements each, and five post evaluation statements regarding the simulation experience and other learning outcomes (Figure 1 and Figure 2).

Analysis

Following data collection, the evaluation instruments were manually sorted and paired by pre-coded number. All Likert-type scaled responses were converted to numerical data (0 -5) and then entered into Version 22 of International Business Machines Corporation (IBM) Statistical Package for Social Sciences (SPSS) for analysis (Table 1). To ensure data entry accuracy, all entries were doubled-checked against source documents. Data was cleaned and analyzed for missing data. There were no more than 3 % (1 entry) missing data on all but two statements of the 40 comparative data (1.10 post = 5.4 % - 2 missing and 1.11 post = 13.5% - 5 missing); and all but five of the non-comparative data statements (Table 2, Table 3, Table 4, Table 5, and Table 6).

Statistical analyses included descriptive examination of the frequency, percentage, mean, standard error, standard deviation, range, and variance for the comparative quantitative data. Cronbach's alpha was .93 or greater for each group of comparative data (understanding, skill, attitudes, and integration) which confirmed a strong internal consistency and construct reliability for the 40 Likert-type scaled pre and post evaluation instruments (Figure 1 and Figure 2) (Dougherty, 2012). To determine pre and post evaluation differences between the means, a paired two-tailed *t* test with a 95% confidence interval of the differences or $p < \text{or equal to } .05$

was used. The non-comparative data and narrative comments were reviewed and summarized for consideration of adjunct interpretation and analysis of the data.

Results

Demographics

Of the 50 potential participants, 74% ($n=37$) completed both the pre and post evaluations. Years of experience as a registered nurse ($n=36$) ranged from a minimum of two to a maximum 40 (Figure 3). Fifty percent reported two to seven years of experience, 25% between 8 and 20 years, with the remaining 25% reporting between 21 and 40 years. The years of experience as a practicing school nurse ranged from one to 16 years with the 94% of participants reporting 1 to five years of experience (Figure 4).

Non-Comparative Quantitative Data

The value ratings as percentages of responses to the non-comparative Likert-type statements can be viewed on Table 6. The majority of the statements focused on the learning content and reflected participants overall rating of how the experience helped their learning and the value of the simulation intervention. Highlights of these results included statements 5.1 and 5.2 which focused on elements of the participants' leadership skill set. The simulation experience was reported by 70.3% of the participants to have an improvement effect in their school nursing practice (5.1) and enhancement of their empowerment, advocacy, and policy development skills sets (5.2). The value of simulation debriefing component (6.5) had the highest rating overall with 21.6 % of the participants having reported debriefing as providing "much help" and the remaining 78.4 % reported it as "great help".

Comparative Quantitative Data

The aggregate results from the pre and post evaluations showed that all but two of the 40 comparative statements were found to be statistically significant ($p < .05$). All of the skills and attitudes statements were found to be statistically significant ($p < .05$) (Table 3 and Table 4). The understanding and integration statements were also found to be statistically significant ($p < .05$) with one exception in each category. The two exceptions were statements 1.10 regarding the gains in understanding care plan development ($p = .193$) and the 4.2 integration statement of the participants being in the habit of applying what they learn to school nursing practice ($p = .079$) (Table 2 and Table 5).

These two exceptions to the statistically significant findings may be related to the participants' prior experiences as registered nurses. Since care plan development is an area of nursing that is not necessarily unique to school nursing practice, the lack of statistically significant gains for this item could be an indicator of the participants' solid knowledge in care plan development. Similarly, the nearly statistically significant ($p = .079$) integration statement of the gains in applying what was learned into school nursing practice, may be attributed to either the participants' years of experience in other nursing practice settings or alternatively from their current school nursing practice. Therefore these two exceptions are anomalous and are not an unusual or surprising finding.

Outcomes Inclusive of Qualitative Data

Of the four categories that contained the remaining 38 statistically significant quantitative comparative findings, the statements on attitudes or confidence showed the greatest gains as represented by t values with the greatest magnitude (Table 4). These findings were further substantiated by the leading qualitative comparative theme of participants' self-perceived

improvement in their level of confidence. The areas showing increased confidence were triage assessment, emergency intervention skill set, and the management and communications components of the health-related emergency first-responder role.

The statements showing the greatest gains in the skills category aligned with improvement in skills regarding recognition of condition statements 2.1 ($t = -5.625$) and 2.3 ($t = -6.275$); and initiation of care management statement 2.4 ($t = -6.348$) (Table 3). Those statements showing the greatest gains in understanding focused on improvement in pediatric assessment and acuity 1.2 ($t = -9.334$), 1.3 ($t = -6.894$), and 1.4 ($t = -6.597$); and the necessary communications needed during a health-related emergency 1.8 ($t = -5.146$) (Table 2).

In contrast to the lack of statistical significance of statement 1.10 regarding gains in understanding care plan development, the gains in integration of development of individualized emergency care plans (4.5) was statistically significant ($t = -3.903$). The statements that targeted integration of concepts (4.1) ($t = -3.402$), systematic reason (4.3) ($t = -4.175$), critical approach (4.4) ($t = -4.750$) and application to leadership role (4.6) ($t = -3.995$) were also statistically significant (Table 5). These findings conveyed there was a self-perceived synthesis and integration of the intervention elements into the participants' school nursing practice. Further substantiation of these findings was evident in the qualitative data that conveyed a predominant theme of participants' self-perception of proper leadership abilities through improved communications, calm demeanor, and confidence to effectively direct staff members.

Clinical and Leadership Outcomes

Sorting the four categories of comparative quantitative data to delineate the clinical and leadership components of the project's primary aim resulted in data groupings that represented the desired self-perceived outcomes of the simulation intervention. Statistically significant self-

perceived clinical outcomes included pediatric assessment, acuity, and interventions and management (Table 7, Table 8, and Table 9). Similarly, the statistically significant self-perceived leadership outcomes included communications, empowerment, and care coordination as teamwork and training (Table 10 and Table 11).

Discussion

Summary

The specific aim of the project was to evaluate the impact the simulation intervention had on improving the school nurse participants' health-related school emergency first-responder clinical and leadership skills sets. Indicative of critical reasoning and clinical judgement processes, the findings conveyed that participants' had statistically significant comparative improvement gains in nearly every statement of the four categories of the project instrument: understanding, skills, attitudes, and integration (Table 2, Table 3, Table 4 and Table 5). When sorted and analyzed to reflect specific clinical and leadership components, the quantitative comparative findings clearly conveyed self-perceived improvements in confidence in the first-responder role (Table 7, Table 8, Table 9, Table 10, and Table 11). Coupled with the prominent qualitative themes and non-comparative findings, the project outcomes supported the use of simulation as a valid and beneficial intervention to improve school nurses' confidence in their health-related school emergency first-responder role. Therefore, the results and outcomes answered the project question and conveyed simulation interventions had a significant impact on the self-perceived improvement of the participants' critical reasoning and clinical judgement to recognize and manage pediatric health-related emergencies.

Consistent with these finding, an organization policy change for the graduate level school nursing credential program transpired as an outcome reflective of the project's secondary aim.

The organization has planned to include simulation as part of the Fall 2015 cohort practicum. As evidence of a measure of sustainability, this organizational policy change is indicative of simulation as an evidence-based practice intervention for school nursing practice improvement and a quality improvement measure for students' health and safety in school nursing practice (Maughan, Bobo, Butler, Schantz, & Schoessler, 2015).

Relation to Other Evidence

An online search of national repositories and publishing databases for information regarding standards, quality improvement data, and peer-reviewed literature was undertaken in an effort to locate best practice evidence of other similar studies regarding the focus of the project's school nursing practice issue. Evidence of a few interactive and self-study online trainings, webinars, orientation programs for the new school nurse, and simulation related to school nurse conferences were noted in the peer-reviewed literature search (Austin, Kakacek, & Carr, 2010; Elgie, Sapien, & Fullerton-Gleason, 2005; Elgie, Sapien, Fullerton, & Moore, 2010; McKee, Bultas, & Ahearn, 2011). None of the articles conveyed an identical focus of the project. However, each article's focus was similar enough for review and comparison considerations.

The emergency preparedness course which consisted of face-to-face didactic instruction followed by skills application in simulated emergency scenarios reported findings similar to the project findings (Elgie et al., 2005). Significant improvement in confidence, knowledge, and application of knowledge was found with the study group that had the didactic training followed by emergency simulation practice (Elgie et al., 2005). However, a similar study which substituted the face-to-face component with online training modules found self-reported confidence lacking (Elgie et al., 2010).

Improved confidence levels of school nurses was reported following a face-to-face training program on managing and supporting students with epilepsy and seizures (Austin et al., 2010). The study conveyed there was an improvement in all measured confidence areas although nurses with the greatest amount of previous experience reported less improvement. Not as comprehensive as the project findings, the study's findings were similar to the project as there were statistically significant self-perceived improvements in confidence levels in clinical and leadership areas related to seizure management.

When structured as part of a conference, simulation for practicing school nurses was found to be a useful means to review clinical skills needed to care for children with special health care needs (McKee et al, 2010). A local college with a simulation lab partnered with the local professional school nurses organization, and provided school nurses an opportunity for hands on practice at multiple skill stations. Similar to elements of the project's non-comparative and qualitative findings, feedback from the nurses reported that the class format increased their confidence in caring for children with clinically advanced technology needs.

Limitations and Recommendations for Future Studies

Due to the small sample size ($n= 37$), the findings are not generalizable and are limited to the organization where the project was conducted and the number of eligible individuals who agreed to participate in the project. Since the project findings are self-perceptions and not actual observed performance elements, there could be an element of bias in the self-reporting process. Although a project assumption included participants would be honest in their responses, the participants may have provided responses based on what they thought should have occurred from the simulation experience.

Finally, the findings are limited since post evaluations were administered immediately following the simulation experience. Future studies could include a follow-up interview or survey with participants six months after the simulation to gather data on how the participants applied the intervention gains into their school nursing practice. Such data could provide additional opportunities of quality improvement studies for future school nursing simulations.

Although the costs associated with the project intervention were minimal, the resources and costs associated with a simulation intervention within a state of the art simulation lab could be a limiting factor for future studies. However, the school nursing specific simulation scenarios that were published can be obtained through CSA membership and utilized in a modified simulation environment as necessary. Considerations for use include other schools of nursing and other venues such as conferences or learning events where school nursing practice improvement is sought.

Implications for School Nursing

The outcomes of this doctoral evidence-based practice improvement project conveyed that evidence-based simulation intervention resulted in improved PSN' confidence in their health-related school emergency first-responder role. Implications for school nursing practice include application of improved clinical and leadership skill sets that have the potential to positively impact the PSN' ability to promptly recognize and manage life-threatening emergencies. The knowledgeable and confident school nurse can better convey the significance and severity of health conditions and need for prompt treatment by school staff. Through practice integration the PSN should be more confident to train, lead staff, and effectively function as a first-responder to save lives and avoid failure to rescue situations in schools.

Additional implications include leadership applications related to the improved communications, care coordination, and empowerment. Due to increased knowledge and confidence, the PSN can generate improved communications to facilitate care coordination amongst and between the school and parents, providers, and other community partners. The ability to promote improved continuity of care and advocacy for policies that support quality improvement measures for student's health and safety while at school may also be substantiated. Empowered through the improved confidence and skill sets that align with the new national school nursing practice framework, the PSN can apply and integrate simulation outcomes to improve their practice (Maughan et al., 2015).

Conclusions

Simulation as an evidence-based practice intervention was found to positively impact on PSN' health-related school emergency first-responder role. Statistically significant self-perceived increased confidence in clinical and leadership skill sets specific to life-threatening school emergencies were among the project's findings. The knowledge, skills and confidence gained from the simulation interventions provide a sound platform for future health-related emergency first-responder interactions and quality improvement advocacy efforts. Anticipated applications include improved clinical outcomes, continuity and transition of care across the continuum, and advocacy for policies that support quality improvement measures for student's health and safety while at school. Simulation should be considered in future learning venues to ensure that school nurses have access to evidence-based practice learning interventions that can significantly impact confidence, critical reasoning, and clinical judgement skills needed to optimize the quality of care delivered to students and the practice of school nursing in the 21st century.

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Table 1.

Assigned Numerical Values for SALG Likert-type Scaled Scores

| Assigned Value | Comparative Pre intervention Evaluation Statements | Comparative Post Intervention Evaluation Statements | Non-Comparative Statements |
|----------------|--|---|----------------------------|
| 0 | Not applicable | Not applicable | Not Applicable |
| 1 | Not at all | No gains | No help |
| 2 | Just a little | A little gain | A little help |
| 3 | Somewhat | Moderate gain | Moderate Help |
| 4 | A lot | Good gain | Much Help |
| 5 | A great deal | Great gain | Great Help |

Table 2.

Comparative Statements: Participants' Self-Perceived Gains in Understanding/Knowledge

| Statement Number | Pre and Post Simulation Statements | Paired mean Differences | Paired SD Differences | T Value | DF | 2 Tailed P Value |
|------------------|--|-------------------------|-----------------------|---------|----|------------------|
| | As a result of your work in this class, what GAINS DID YOU MAKE in your UNDERSTANDING of each of the following? | | | | | |
| 1.1.1 | The types of health-related emergencies which may occur in school nursing practice | -.8108 | .9955 | -4.954 | 36 | .000 |
| 1.1.2 | The range of presentations of chronic conditions which have the potential to become a life-threatening emergency | -.7568 | 1.0647 | -4.323 | 36 | .000 |
| 1.2 | Method of rapid pediatric assessment | -1.2973 | .8454 | -9.334 | 36 | .000 |
| 1.3 | Method of determining acuity based on assessment | -1.0811 | .9539 | -6.894 | 36 | .000 |
| 1.4 | Clinical management of pediatric respiratory distress | -.9730 | .8971 | -6.597 | 36 | .000 |
| 1.5 | Identifying clinical presentations which pose a heightened risk for anaphylaxis | -.7568 | .9547 | -4.822 | 36 | .000 |
| 1.6 | The actions to take for a suspected anaphylactic reaction | -.6216 | 1.1143 | -3.393 | 36 | .002 |
| 1.7 | Knowing when to call for emergency help (911) | -.5405 | .9602 | -3.424 | 36 | .002 |
| 1.8 | Necessary communications during a health-related emergency | -.7568 | .8946 | -5.146 | 36 | .000 |
| 1.9 | Necessary teamwork and situation management | -.6216 | .9818 | -3.851 | 36 | .000 |
| 1.10 | Care plan development | -.2571 | 1.1464 | -1.327 | 34 | .193 |
| 1.11 | Elements of health policy advocacy | -.875 | 1.129 | -4.385 | 31 | .000 |

Note. SD = Standard Deviation; DF = Degrees of freedom

Table 3.

Comparative Statements: Participants' Self-Perceived Gains in Skills

| Statement Number | Pre and Post Simulation Statements | Paired mean Differences | Paired SD Differences | T Value | DF | 2 Tailed P Value |
|------------------|---|-------------------------|-----------------------|---------|----|------------------|
| | As a result of your work in this class, what GAINS DID YOU MAKE in the following SKILLS? | | | | | |
| 2.1 | Recognizing deviations from normal or expected clinical patterns of pediatric presentations | -.8108 | .8768 | -5.625 | 36 | .000 |
| 2.2 | Recognizing respiratory signs and symptoms which may be associated with impending pediatric respiratory distress | -.8378 | 1.1184 | -4.557 | 36 | .000 |
| 2.3 | Recognizing how rapidly a condition can deteriorate to a life-threatening state | -1.0000 | .9562 | -6.275 | 35 | .000 |
| 2.4 | Accurately initiating best practice nursing interventions for effective clinical management of pediatric health-related emergency presentations | -.9444 | .8927 | -6.348 | 35 | .000 |
| 2.5 | Accurately initiating best practice nursing interventions for effective clinical management of impending anaphylaxis | -.5000 | 1.0000 | -3.000 | 35 | .005 |
| 2.6 | Working effectively with other team members in an emergency | -.4865 | 1.0441 | -2.834 | 36 | .007 |
| 2.7 | Communicating with team members adapting communication style to the needs of team and situation | -.5676 | 1.1436 | -3.019 | 36 | .005 |
| 2.8 | Use of best practice communication that minimize risks associated with handoffs among providers and across transitions of care | -.7838 | 1.0310 | -4.624 | 36 | .000 |
| 2.9 | Use of best practices and legal requirements to report and prevent harm | -.6757 | 1.0015 | -4.104 | 36 | .000 |

Note. SD = Standard Deviation; DF = Degrees of freedom

Table 4.

| <i>Comparative Statements: Participants' Self-Perceived Gains in Attitudes/Confidence</i> | | | | | | | |
|---|--|-------------------------|-----------------------|---------|----|------------------|--|
| Statement Number | Pre and Post Simulation Statements | Paired mean Differences | Paired SD Differences | T Value | DF | 2 Tailed P Value | |
| | As a result of your work in this class, what GAINS DID YOU MAKE in the following? | | | | | | |
| 3.1 | Confidence in pediatric assessment | -1.0541 | .9112 | -7.036 | 36 | .000 | |
| 3.2 | Confidence in determining an acuity or triage category | -1.1351 | .9476 | -7.287 | 36 | .000 | |
| 3.3 | Confidence to recognize subtle signs and symptoms of a deteriorating health conditions | -.8649 | .8551 | -6.152 | 36 | .000 | |
| 3.4 | Confidence to respond to health related emergencies requiring imminent clinical decision making | -.9189 | .7218 | -7.744 | 36 | .000 | |
| 3.5 | Confidence to manage pediatric respiratory distress clinical presentations | -.8649 | .7134 | -7.374 | 36 | .000 | |
| 3.6 | Confidence in early recognition of a condition which may lead to anaphylactic emergency | -.7027 | .8454 | -5.056 | 36 | .000 | |
| 3.7 | Confidence to lead and direct a school staff team through a health related emergency | -.7838 | .7865 | -6.062 | 36 | .000 | |
| 3.8 | Confidence to initiate communications regarding an emergency | -.6486 | .8238 | -4.789 | 36 | .000 | |
| 3.9 | Confidence with communication processes for patient handoffs to other providers as part of transitions of care | -.8378 | .8338 | -6.112 | 36 | .000 | |
| 3.10 | Confidence to manage pediatric health-related emergencies | -.8378 | .7270 | -7.010 | 36 | .000 | |
| 3.11 | Confidence that you understand the material enough to discuss health-related emergency response concepts with teachers and other non-licensed school personnel | -.7297 | .7321 | -6.063 | 36 | .000 | |
| 3.12 | Confidence to provide appropriate health-related emergency response training to unlicensed school personnel | -.8378 | .8338 | -6.112 | 36 | .000 | |
| 3.13 | Confidence to provide appropriate health-related emergency information to administrators to advocate for school or district health policy updates or change | -.7568 | .9251 | -4.976 | 36 | .000 | |

Note. SD = Standard Deviation; DF = Degrees of freedom

Table 5.

Comparative Statements: Participants' Self-Perceived Gains in Integration

| Statement Number | Pre and Post Simulation Statements | Paired mean Differences | Paired SD Differences | T Value | DF | 2 Tailed P Value |
|------------------|---|-------------------------|-----------------------|---------|----|------------------|
| | As a result of your work in this class, what GAINS DID YOU MAKE in INTEGRATING the following? | | | | | |
| 4.1 | Connection concepts with general nursing knowledge and skills | -.5676 | 1.0149 | -3.402 | 36 | .002 |
| 4.2 | Applying what you learned to your school nursing practice | -.3514 | 1.1836 | -1.806 | 36 | .079 |
| 4.3 | Using systematic reasoning in your approach to determine urgency of a clinical situation and ability to prioritize actions | -.7027 | 1.0237 | -4.175 | 36 | .000 |
| 4.4 | Using a critical approach to analyze and interpret clinical data to when and what interventions are needed when faced with a school health -related emergency | -.7838 | 1.0037 | -4.750 | 36 | .000 |
| 4.5 | The ability to incorporate newly identified health -related information into the development and completion of individualized emergency health care plans | -.5946 | .9267 | -3.903 | 36 | .000 |
| 4.6 | Application to your leadership role in school health | -.6757 | 1.0289 | -3.903 | 36 | .000 |

Note. SD = Standard Deviation; DF = Degrees of freedom

Table 6.

Non-Comparative Post Evaluation Statements: Participants' Percentage Ratings of How Aspects of the Simulation Intervention Helped With Learning

| Statement Number | Statements on How Much Did the Following Aspect of the Class Help | No Help | Little Help | Much Help | Moderate Help | Great Help |
|------------------|--|---------|-------------|-----------|---------------|------------|
| 5.1 | The opportunity to be in safe environment and practice the management of school health-related emergencies in order to improve your school nursing practice. | | 2.7 | 8.1 | 18.9 | 70.3 |
| 5.2 | The simulation experience enhanced your skill set and your sense of empowerment to advocate for safe practice and health policy development | | 2.7 | 10.8 | 16.2 | 70.3 |
| 5.3 | The simulation experience raised your awareness of the importance of evidence-based practice in school nursing practice | | 5.4 | 8.1 | 24.3 | 62.2 |
| 6.1 | Pre-simulation overview | 2.7 | 5.4 | 21.6 | 32.4 | 37.8 |
| 6.2 | Opportunity to interact as a member of a team during the simulation | | 5.4 | 8.1 | 21.6 | 64.9 |
| 6.3 | Opportunity to interact as the lead school nurse during the simulation | | 3.2 | 3.2 | 25.8 | 67.7 |
| 6.4 | Observing the interactions of other groups | | | 2.7 | 24.3 | 73.0 |
| 6.5 | Participating in the debriefing process | | | | 21.6 | 78.4 |
| 7.1 | Pre-assigned reading | 3.1 | 9.4 | 25.0 | 37.5 | 25.0 |
| 8.1 | Handouts and supplemental reading material | | 8.8 | 17.6 | 41.2 | 32.4 |
| 8.2 | Verbal guidance | | 5.7 | 17.1 | 17.1 | 60.0 |
| 9.1 | Explanation of simulation focused topics | | 5.6 | 16.7 | 30.6 | 47.2 |
| 9.2 | Explanation of simulation components and process | | 2.8 | 19.4 | 30.6 | 47.2 |
| 10.1 | Interacting with team members to simulate your first responder role as a school nurse. | | | 8.6 | 22.9 | 68.6 |
| 10.2 | The opportunity to be in safe environment to practice the management of school health-related emergencies. | | | 2.8 | 22.2 | 75.0 |

Table 7.

Comparative Statements: Statistically Significant Clinical Outcomes in Pediatric Assessment

| Statement Number | Pre and Post statements | Paired mean Differences | Paired SD Differences | T Value | DF | 2 Tailed P Value |
|------------------|--|-------------------------|-----------------------|---------|----|------------------|
| 1.1.1 | The types of health-related emergencies which may occur in school nursing practice | -.8108 | .9955 | -4.954 | 36 | .000 |
| 1.2 | Method of rapid pediatric assessment | -1.2973 | .8454 | -9.334 | 36 | .000 |
| 1.5 | Identifying clinical presentations which pose a heightened risk for anaphylaxis | -.7568 | .9547 | -4.822 | 36 | .000 |
| 2.1 | Recognizing deviations from normal or expected clinical patterns of pediatric presentations | -.8108 | .8768 | -5.625 | 36 | .000 |
| 2.2 | Recognizing respiratory signs and symptoms which may be associated with impending pediatric respiratory distress | -.8378 | 1.1184 | -4.557 | 36 | .000 |
| 3.1 | Confidence in pediatric assessment | -1.0541 | .9112 | -7.036 | 36 | .000 |
| 3.3 | Confidence to recognize subtle signs and symptoms of a deteriorating health conditions | -.8649 | .8551 | -6.152 | 36 | .000 |
| 3.6 | Confidence in early recognition of a condition which may lead to anaphylactic emergency | -.7027 | .8454 | -5.056 | 36 | .000 |
| 4.1 | Connection concepts with general nursing knowledge and skills | -.5676 | 1.0149 | -3.402 | 36 | .002 |

Note. SD = Standard Deviation; DF = Degrees of freedom

Table 8.

Comparative Statements: Statistically Significant Clinical Outcomes in Acuity

| Statement Number | Pre and Post statements | Paired mean Differences | Paired SD Differences | T Value | DF | 2 Tailed P Value |
|------------------|--|-------------------------|-----------------------|---------|----|------------------|
| 1.1.2 | The range of presentations of chronic conditions which have the potential to become a life-threatening emergency | -.7568 | 1.0647 | -4.323 | 36 | .000 |
| 1.3 | Method of determining acuity based on assessment | -1.0811 | .9539 | -6.894 | 36 | .000 |
| 1.7 | Knowing when to call for emergency help (911) | -.5405 | .9602 | -3.424 | 36 | .002 |
| 2.3 | Recognizing how rapidly a condition can deteriorate to a life-threatening state | -1.0000 | .9562 | -6.275 | 35 | .000 |
| 3.2 | Confidence in determining an acuity or triage category | -1.1351 | .9476 | -7.287 | 36 | .000 |
| 4.3 | Using systematic reasoning in your approach to determine urgency of a clinical situation and ability to prioritize actions | -.7027 | 1.0237 | -4.175 | 36 | .000 |

Note. SD = Standard Deviation; DF = Degrees of freedom

Table 9

Comparative Statements: Statistically Significant Clinical Outcomes in Interventions and Management

| Statement Number | Pre and Post statements | Paired mean Differences | Paired SD Differences | T Value | DF | 2 Tailed P Value |
|------------------|--|-------------------------|-----------------------|---------|----|------------------|
| 1.4 | Clinical management of pediatric respiratory distress | -.9730 | .8971 | -6.597 | 36 | .000 |
| 1.6 | The actions to take for a suspected anaphylactic reaction | -.6216 | 1.1143 | -3.393 | 36 | .002 |
| 2.4 | Accurately initiating best practice nursing interventions for effective clinical management of pediatric health-related emergency presentations | -.9444 | .8927 | -6.348 | 35 | .000 |
| 2.5 | Accurately initiating best practice nursing interventions for effective clinical management of impending anaphylaxis | -.5000 | 1.0000 | -3.000 | 35 | .005 |
| 3.4 | Confidence to respond to health related emergencies requiring imminent clinical decision making | -.9189 | .7218 | -7.744 | 36 | .000 |
| 3.5 | Confidence to manage pediatric respiratory distress clinical presentations | -.8649 | .7134 | -7.374 | 36 | .000 |
| 3.10 | Confidence to manage pediatric health-related emergencies | -.8378 | .7270 | -7.010 | 36 | .000 |
| 4.4 | Using a critical approach to analyze and interpret clinical data to when and what interventions are needed when faced with a school health-related emergency | -.7838 | 1.0037 | -4.750 | 36 | .000 |
| 4.5 | The ability to incorporate newly identified health -related information into the development and completion of individualized emergency health -care plans | -.5946 | .9267 | -3.903 | 36 | .000 |

Note. SD = Standard Deviation; DF = Degrees of freedom

Table 10.

Comparative Statements: Statistically Significant Leadership Outcomes in Communications and Empowerment

| Statement Number | Pre and Post statements | Paired mean Differences | Paired SD Differences | T Value | DF | 2 Tailed P Value |
|-----------------------|---|-------------------------|-----------------------|---------|----|------------------|
| COMMUNICATIONS | | | | | | |
| 1.8 | Necessary communications during a health-related emergency | -.7568 | .8946 | -5.146 | 36 | .000 |
| 2.7 | Communicating with team members adapting communication style to the needs of team and situation | -.5676 | 1.1436 | -3.019 | 36 | .005 |
| 2.8 | Use of best practice communication that minimize risks associated with handoffs among providers and across transitions of care | -.7838 | 1.0310 | -4.624 | 36 | .000 |
| 3.8 | Confidence to initiate communications regarding an emergency | -.6486 | .8238 | -4.789 | 36 | .000 |
| 3.9 | Confidence with communication processes for patient handoffs to other providers as part of transitions of care | -.8378 | .8338 | -6.112 | 36 | .000 |
| EMPOWERMENT | | | | | | |
| 1.11 | Elements of health policy advocacy | -.875 | 1.129 | -4.385 | 31 | .000 |
| 2.9 | Use of best practices and legal requirements to report and prevent harm | -.6757 | 1.0015 | -4.104 | 36 | .000 |
| 3.13 | Confidence to provide appropriate health-related emergency information to administrators to advocate for school or district health policy updates or change | -.7568 | .9251 | -4.976 | 36 | .000 |
| 4.6 | Application to your leadership role in school health | -.6757 | 1.0289 | -3.995 | 36 | .000 |

Note. SD = Standard Deviation; DF = Degrees of freedom

Table 11.

Comparative Statements: Statistically Significant Leadership Outcomes in Care Coordination

| Statement Number | Pre and Post statements | Paired mean Difference | Paired SD Differences | T Value | DF | 2 Tailed P Value |
|------------------|--|------------------------|-----------------------|---------|----|------------------|
| TEAMWORK | | | | | | |
| 1.9 | Understanding necessary teamwork and situation management | -.6216 | .9818 | -3.851 | 36 | .000 |
| 2.6 | Working effectively with other team members in an emergency | -.4865 | 1.0441 | -2.834 | 36 | .007 |
| 3.7 | Confidence to lead and direct a school staff team through a health related emergency | -.7838 | .7865 | -6.062 | 36 | .000 |
| 4.6 | Application to your leadership role in school health | -.6757 | 1.0289 | -3.995 | 36 | .000 |
| TRAINING | | | | | | |
| 3.11 | Confidence that you understand the material enough to discuss health-related emergency response concepts with teachers and other non-licensed school personnel | -.7297 | .7321 | -6.063 | 36 | .000 |
| 3.12 | Confidence to provide appropriate health-related emergency response training to unlicensed school personnel | -.8378 | .8338 | -6.112 | 36 | .000 |
| 4.6 | Application to your leadership role in school health | -.6757 | 1.0289 | -3.995 | 36 | .000 |

Note. SD = Standard Deviation; DF = Degrees of freedom

Figure 1. Pre Evaluation Simulation Instrument.

Page 1 of 3

SALG - Student Assessment of their Learning Gains

INSTRUMENT SCHOOL NURSING SIMULATION PRE EVALUATION, FALL 2014

The instrument appearing below is for the following class:

Course: School Nursing Simulation Pre Evaluation

Semester: Fall 2014

Instructions to students:

Teachers value students' feedback and take it into account when improving their courses. Please be as precise as you can in your answers. Please choose "not applicable" for any activity you did not do. You may find one or more questions at the end of each section that invite an answer in your own words. Please comment candidly, bearing in mind that future students will benefit from your thoughtfulness. Remember that this is an anonymous survey: your teacher will never know what any individual student has written.

You may see the following note next to some questions:

"D" — Department question. The department head can view the responses to these questions.

Understanding

1. Presently, I understand...

1.1 The following concepts regarding health-related emergencies in school nursing practice

not applicable not at all just a little somewhat a lot a great deal

1.1.1 The types of health-related emergencies which may occur in school nursing practice

0 0 0 0 0 0

1.1.2 Varied presentations of chronic conditions which have the potential to become a life-threatening emergency

○ ○ ○ ○ ○ ○ ○

1.2 A method of rapid pediatric assessment

○ ○ ○ ○ ○ ○ ○

1.3 A method of determining acuity based on assessment

○ ○ ○ ○ ○ ○ ○

1.5 The identification of clinical presentations which pose a heightened risk for anaphylaxis

○ ○ ○ ○ ○ ○ ○

1.6 The actions to take for a suspected anaphylactic reaction

[illegible]

1.7 When to call for emergency help (911)

© © © © © ©

1.8 Necessary communications during a health-related emergency

○ ○ ○ ○ ○ ○ ○

1.9 Necessary teamwork and situation management

0 0 0 0 0 0

1.10 Emergency care plan development

○ ○ ○ ○ ○ ○ ○

1.11 Elements of health policy advocacy

☐ ☐ ☐ ☐ ☐ ☐

1.12 What do you expect to understand at the end of the the simulation experience that you do not know now?

[illegible]

1.13 N/A

| | |
|--|--|
| | |
| | |

Skills

2. Presently, I can...

not applicable not at all just a little somewhat a lot a great deal

2.1 Recognize deviations from normal or expected clinical patterns of pediatric presentations

○ ○ ○ ○ ○ ○ ○

2.2 Recognize respiratory signs and symptoms which may be associated with impending pediatric respiratory distress

© © © © © ©

- 4.5 Developing individualized emergency care plans

☐☐☐☐☐☐
- 4.6 Applying what I learn to enhance my leadership role in school health

☐☐☐☐☐☐
- 4.7 Please comment on how you expect this simulation experience to integrate with your school nursing practice

Participant Information

5. Years of Experience
- 5.1 Number of years licensed as a RN. If less than 5 months round down, round up for 6 months or more.
- 5.2 Number of school years as a practicing school nurse. Count each school year (August - June) as one year excluding the current 2014- 2015 school year

Form Code

6. Pre and Post evaluation form code number should match
- 6.1 Enter code number

Figure 2. Post Evaluation Simulation Instrument.
SALG - Student Assessment of their Learning Gains

INSTRUMENT SCHOOL NURSING SIMULATION POST EVALUATION, FALL 2014

The instrument appearing below is for the following class:

Semester: Fall 2014

Instructions to students:

Teachers value students' feedback and take it into account when improving their courses. Please be as precise as you can in your answers. Please choose "not applicable" for any activity you did not do. You may find one or more questions at the end of each section that invite an answer in your own words. Please comment candidly, bearing in mind that future students will benefit from your thoughtfulness. Remember that this is an anonymous survey: your teacher will never know what any individual student has written.

You may see the following note next to some questions:

"D" — Department question. The department head can view the responses to these questions.

Your understanding of class content

1. As a result of your work in this class, what GAINS DID YOU MAKE in your UNDERSTANDING of each of the following?

1.1 The following concepts which pertain to your participation in the simulation experience regarding health-related emergencies in school nursing practice

no gains a little gain moderate gain good gain great gain not applicable

1.1.1 The types of health-related emergencies which may occur in school nursing practice

○ ○ ○ ○ ○ ○ ○

1.1.2 The range of presentations of chronic conditions which have the potential to become a life-threatening emergency

○ ○ ○ ○ ○ ○ ○

1.2 Method of rapid pediatric assessment

○ ○ ○ ○ ○ ○ ○

1.3 Method of determining acuity based on assessment

○ ○ ○ ○ ○ ○ ○

1.4 Clinical management of pediatric respiratory distress

○ ○ ○ ○ ○ ○

1.5 Identifying clinical presentations which pose a heightened risk for anaphylaxis

○ ○ ○ ○ ○ ○

1.6 The actions to take for a suspected anaphylactic reaction

○ ○ ○ ○ ○ ○ ○

1.7 Knowing when to call for emergency help (911)

○ ○ ○ ○ ○ ○

1.8 Necessary communications during a health-related emergency

○ ○ ○ ○ ○ ○ ○

1.9 Necessary teamwork and situation management

○ ○ ○ ○ ○ ○ ○

1.10 Care plan development

○ ○ ○ ○ ○ ○

1.11 Elements of health policy advocacy

○ ○ ○ ○ ○ ○ ○

1.12 Please comment on how your knowledge of the subject matter has changed as a result of the simulation experience.

Increases in your skills

2. As a result of your work in this class, what GAINS DID YOU MAKE in the following SKILLS?

2.1 Recognizing deviations from normal or expected clinical patterns of pediatric presentations

○ ○ ○ ○ ○ ○

2.2 Recognizing respiratory signs and symptoms which may be associated with impending pediatric respiratory distress

○ ○ ○ ○ ○ ○ ○

2.3 Recognizing how rapidly a condition can deteriorate to a life-threatening state

○ ○ ○ ○ ○ ○ ○

4.4 Using a critical approach to analyze and interpret clinical data to know when and what interventions are needed when faced with a school health-related emergency

☐ ☐ ☐ ☐ ☐ ☐

4.5 The ability to incorporate newly identified health-related information into the development and completion of individualized emergency health care plans

☐ ☐ ☐ ☐ ☐ ☐

4.6 Application to your leadership role in school health

☐ ☐ ☐ ☐ ☐ ☐

4.7 Please identify how the simulation experience is likely to improve your school nurse role as a first-responder to health-related emergencies

The Class Overall

5. HOW MUCH did the following aspects of the class HELP YOUR LEARNING?

no help a little help moderate help much help great help not applicable

5.1 The opportunity to be in safe environment and practice the management of school health-related emergencies in order to improve your school nursing practice.

☐ ☐ ☐ ☐ ☐ ☐

5.2 The simulation experience enhanced your skill set and your sense of empowerment to advocate for safe practice and health policy development.

☐ ☐ ☐ ☐ ☐ ☐

5.3 The simulation experience raised your awareness of the importance of evidence-based practice in school nursing practice

☐ ☐ ☐ ☐ ☐ ☐

5.4 Please identify three ways on how you anticipate the SIMULATION experience will help you to improve your school nursing practice .

Class Activities

6. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING?

no help a little help moderate help much help great help not applicable

6.1 Pre-simulation overview

☐ ☐ ☐ ☐ ☐ ☐

6.2 Opportunity to interact as a member of a team during the simulation

☐ ☐ ☐ ☐ ☐ ☐

6.3 Opportunity to interact as the lead school nurse during the simulation

☐ ☐ ☐ ☐ ☐ ☐

6.4 Observing the interactions of other groups

☐ ☐ ☐ ☐ ☐ ☐

6.5 Participating in the debriefing process

☐ ☐ ☐ ☐ ☐ ☐

6.6 Please identify what elements of the simulation experience were most beneficial to your learning.

Assignments, graded activities and tests

7. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING?

no help a little help moderate help much help great help not applicable

7.1 Pre-assigned reading

☐ ☐ ☐ ☐ ☐ ☐

Class Resources

8. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING?

no help a little help moderate help much help great help not applicable

8.1 Handouts and supplemental reading material

☐ ☐ ☐ ☐ ☐ ☐

8.2 Verbal guidance

☐ ☐ ☐ ☐ ☐ ☐

8.3 Please identify on how any of the RESOURCES contributed to improving your school nursing practice skill set.

The information you were given

9. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? no help a little help moderate help much help great help not applicable

9.1 Explanation of simulation focused topics ☐ ☐ ☐ ☐ ☐ ☐

9.2 Explanation of simulation components and process ☐ ☐ ☐ ☐ ☐ ☐

9.3 Please identify how the INFORMATION YOU RECEIVED about the simulation helped with your involvement in the experience

Support for you as an individual learner

10. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? no help a little help moderate help much help great help not applicable

10.1 Interacting with team members to simulate your first responder role as a school nurse. ☐ ☐ ☐ ☐ ☐ ☐

10.2 The opportunity to be in safe environment to practice the management of school health-related emergencies. ☐ ☐ ☐ ☐ ☐ ☐

10.3 Please identify how the SUPPORT YOU RECEIVED through the simulation experience helped to improve your approach to pediatric health-related emergencies as a school nurse

Participant Information

11. Years of Experience

11.1 Number of years licensed as RN. If less than 5 months round down, round up if 6 months or more

11.2 Number of years as a practicing school nurse. Count each school year (August - June) as one year excluding the current 2014- 2015 school year.

Form Code

12. Pre and Post evaluation form code should match

12.1 Enter form code

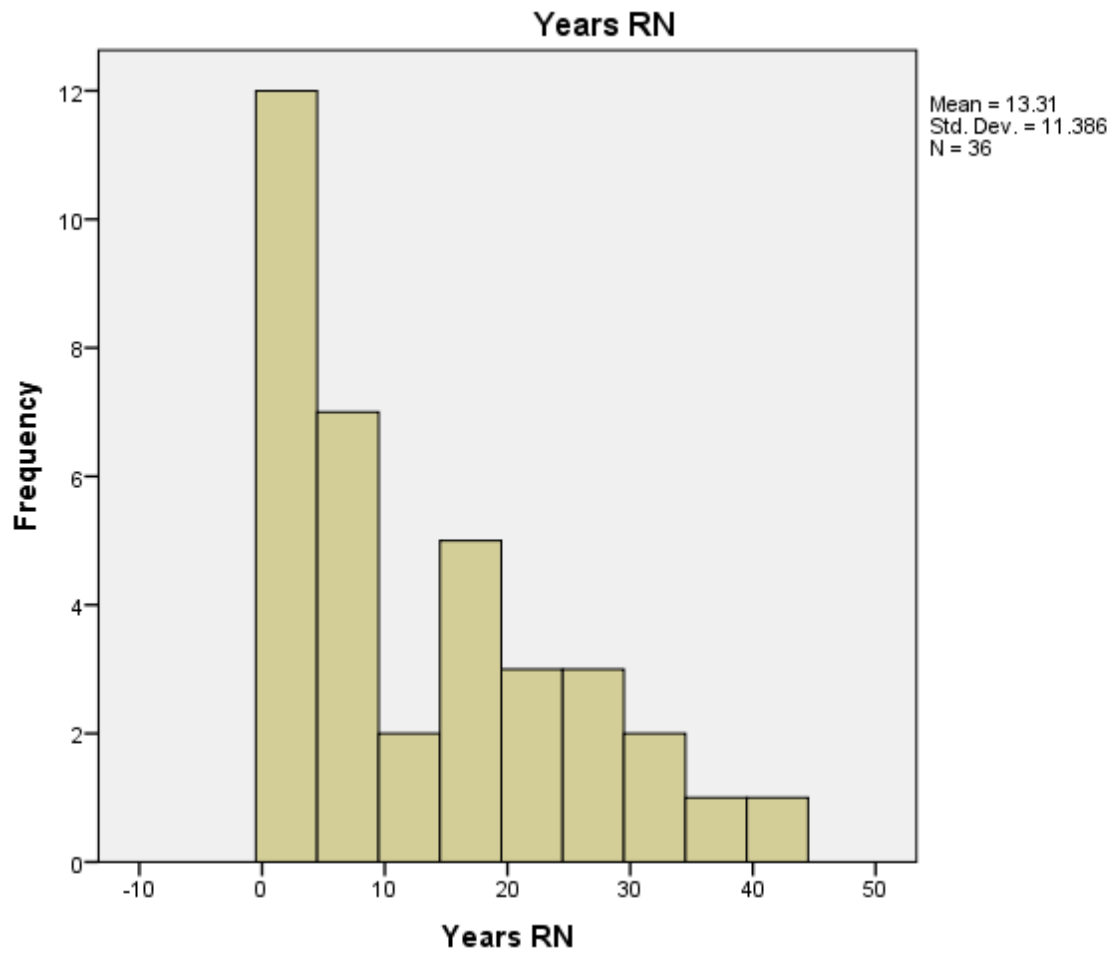


Figure 3. Participant Number of Years as a Licensed Registered Nurse (RN).

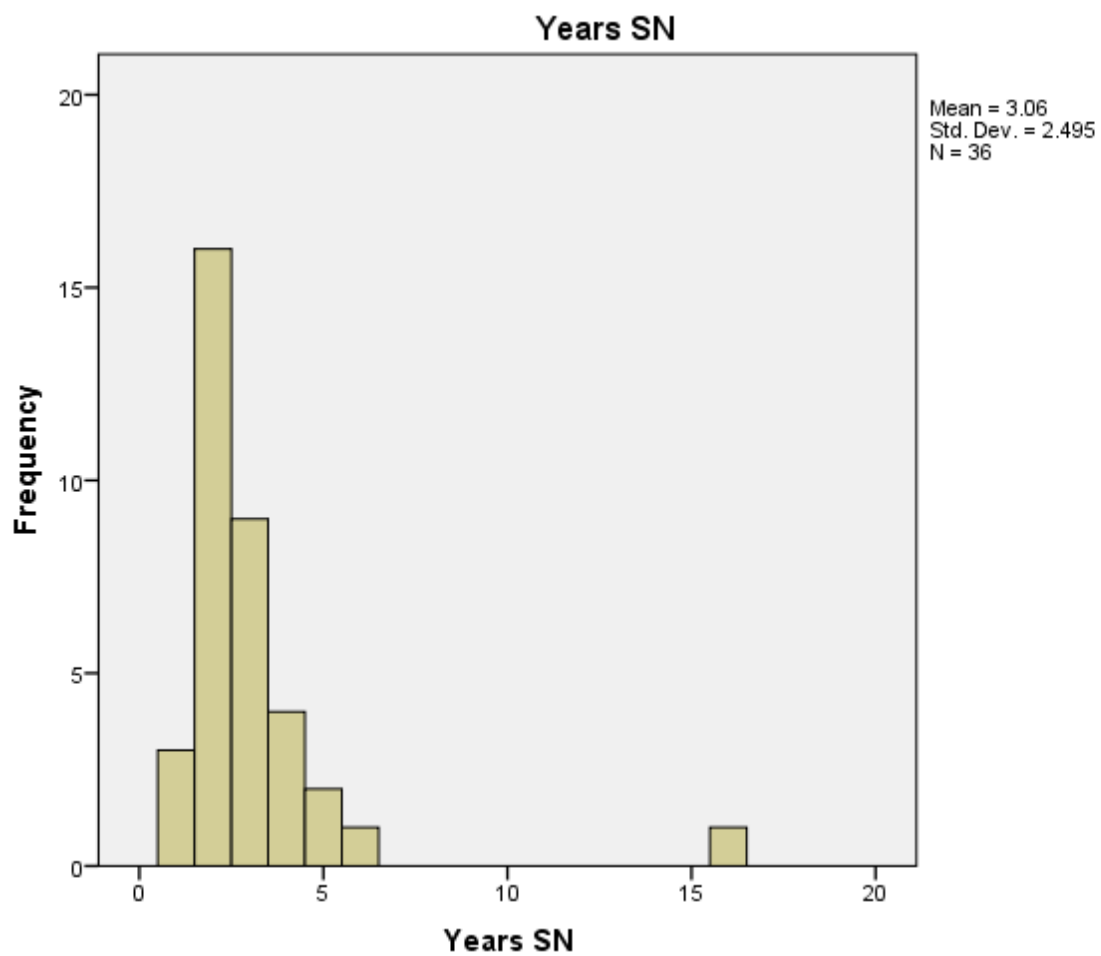


Figure 4. Participant Number of Years as a Practicing School Nurse (SN).

APPENDIX A. STATEMENT OF ORIGINAL WORK

Academic Honesty Policy

Capella University's Academic Honesty Policy (3.01.01) holds learners accountable for the integrity of work they submit, which includes but is not limited to discussion postings, assignments, comprehensive exams, and the dissertation or capstone project.

Established in the Policy are the expectations for original work, rationale for the policy, definition of terms that pertain to academic honesty and original work, and disciplinary consequences of academic dishonesty. Also stated in the Policy is the expectation that learners will follow APA rules for citing another person's ideas or works.

The following standards for original work and definition of *plagiarism* are discussed in the Policy:

Learners are expected to be the sole authors of their work and to acknowledge the authorship of others' work through proper citation and reference. Use of another person's ideas, including another learner's, without proper reference or citation constitutes plagiarism and academic dishonesty and is prohibited conduct. (p. 1)

Plagiarism is one example of academic dishonesty. Plagiarism is presenting someone else's ideas or work as your own. Plagiarism also includes copying verbatim or rephrasing ideas without properly acknowledging the source by author, date, and publication medium. (p. 2)

Capella University's Research Misconduct Policy (3.03.06) holds learners accountable for research integrity. What constitutes research misconduct is discussed in the Policy:

Research misconduct includes but is not limited to falsification, fabrication, plagiarism, misappropriation, or other practices that seriously deviate from those that are commonly accepted within the academic community for proposing, conducting, or reviewing research, or in reporting research results. (p. 1)

Learners failing to abide by these policies are subject to consequences, including but not limited to dismissal or revocation of the degree.

Statement of Original Work and Signature

I have read, understood, and abided by Capella University's Academic Honesty Policy ([3.01.01](#)) and Research Misconduct Policy ([3.03.06](#)), including the Policy Statements, Rationale, and Definitions.

I attest that this dissertation or capstone project is my own work. Where I have used the ideas or words of others, I have paraphrased, summarized, or used direct quotes following the guidelines set forth in the APA *Publication Manual*

| | |
|--------------------------|-------------------------------------|
| Learner name and date | Mariann F. Cosby August 24, 2015 |
|--------------------------|-------------------------------------|

| | |
|---------------------------|---|
| Mentor name and school | Dr. JoAnna Fairley School of Nursing and Health Sciences |
|---------------------------|---|