Increase Confidence in New Graduate Nurses using High Fidelity Simulation

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BACKGROUND

Background:
Confidence is critical for nurses to provide quality patient care. New graduate nurses often lack the knowledge and confidence to recognize the cues of a deteriorating patient. Critical situations may be better managed if nurses are confident and competent in identifying and intervening with a deteriorating patient. The lack of confidence has been identified as a barrier to detecting subtle changes in vital signs, leading to a deteriorating patient condition. Lack of confidence may delay intervention in providing care to prevent sentinel events. Research demonstrates that simulation increases competence and confidence in nurses and nursing students at all levels. Providing new graduate nurses with simulation experiences to recognize a deteriorating patient condition, could improve patient outcomes and save lives.

Review of the literature:
Research demonstrates that nurses who lack knowledge, experience, and confidence to recognize subtle changes in a patient's condition can contribute to sentinel events. New graduate nurses often wait to call for assistance instead of seeking action; thus, delaying appropriate intervention. Literature shows that nursing experience develops confidence, and simulation should be included in the hospital orientation process to help build this confidence in new graduate nurses. Analysis of systematic reviews, randomized controlled trials, non-randomized control trials, qualitative and quantitative evidence suggests four principal findings: 1) nursing care for a deteriorating patient condition is critical, 2) new nurses feel inadequately prepared to intervene in deteriorating condition, 3) simulation can positively impact a nurses' confidence to intervene in a deteriorating patient condition and 4) simulation increases knowledge, competence, confidence, clinical judgment, and clinical skills in new graduate nurses (Hsu, Chang, & Hsieh, 2015; Jansson, Syrjälä, Ohtonen, & Meriläinen, et al., 2016; Breen, Sinead, McCarthy, Gallagher, et al., 2019). Literature shows providing new nurses with simulation experiences to recognize and manage a deteriorating patient condition, could facilitate early intervention, improve patient outcomes, and save lives (Purling & King, 2012). Research shows that nursing experience builds confidence and competence; hence, simulation education should be ongoing and included in the hospital orientation process (Driscoll, 2018; Tawalbeh, & Tubaishat, 2013).

METHODS

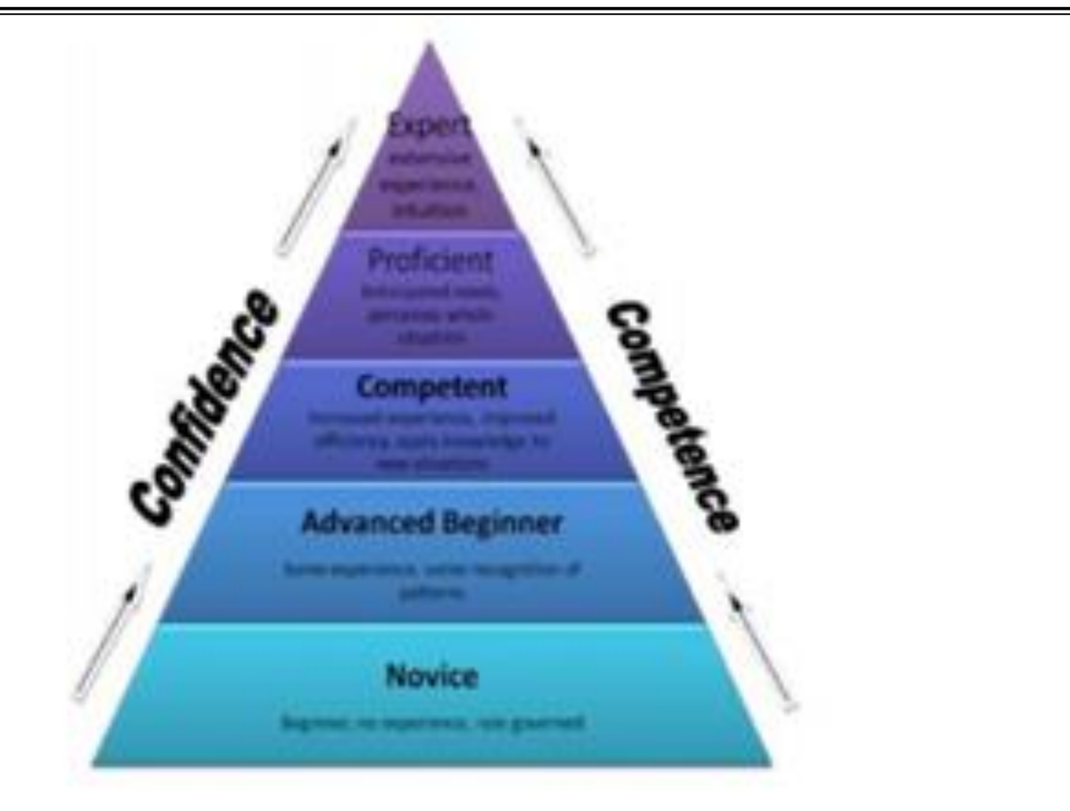

Figure 1. Schematic Adaptation of Benner's Novice to Expert Model for ACNPs. Adapted from Marble (2009).

Benner's *Novice to Expert Theory* clearly identifies five levels of nursing competence, which can be connected to a nurses' confidence level. In Benner's theory, participants go through five skill levels: novice, advanced beginner, competent, proficient, and expert (Benner, 1984). Each level has well-defined attributes of a nurse's practice ability (Benner, 1984).

Simulation Project Process
Hospital leadership CNO, clinical educators, mentors, and content experts at a large Midwestern facility were presented with the problem of NGNs failing to intervene early with a deteriorating patient. This was evidenced by an increased number of rapid response calls made by NGNs from the Neuro/Medical unit. The problem was presented by means of a PPT presentation to hospital leadership in a clinical practice meeting. Hospital leadership approved the simulation program and recommended specific scenarios applicable to the Neuro/Medical unit. A convenience sample of NGNs in the onboarding process was obtained by the clinical educator. The DNP simulation program provided hands-on experience to NGNs on a Neuro/Medical unit. The simulation program improved NGNs knowledge, competence, and confidence to recognize subtle changes in deteriorating patient conditions and call for help in a timely fashion. Weekly meetings occurred with various intra/disciplines providing updates and changes for a smooth implementation.
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Project Design
This quality improvement project utilized Benner's nursing theory Novice to Expert. A t-test and descriptive statistics employing a pre/post-test questionnaire and frequency scores from an antidotal tool. The dependent variable was the NGNs confidence level to intervene in a declining patient condition and the independent variable was the simulation experience created for the simulation program. The simulation program took place at large Midwestern acute care facility by means of a convenience sample of NGNs in the orientation process. Stakeholders include interdisciplinary leadership encompassing CNO, content expert, clinical educators, unit manager, preceptors, charge nurses, and NGNs

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RESULTS

A Repeated-Measures t-test demonstrated a significant difference between the pre-intervention and post-intervention scores $t(14) = -9.88$, $p < 0.001$. Means scores for both observations showed a statistical significance of increased confidence for NGNs. Descriptive statistics of pre/post frequency scores of RRT calls made by NGNs showed a 50% decrease post implementation

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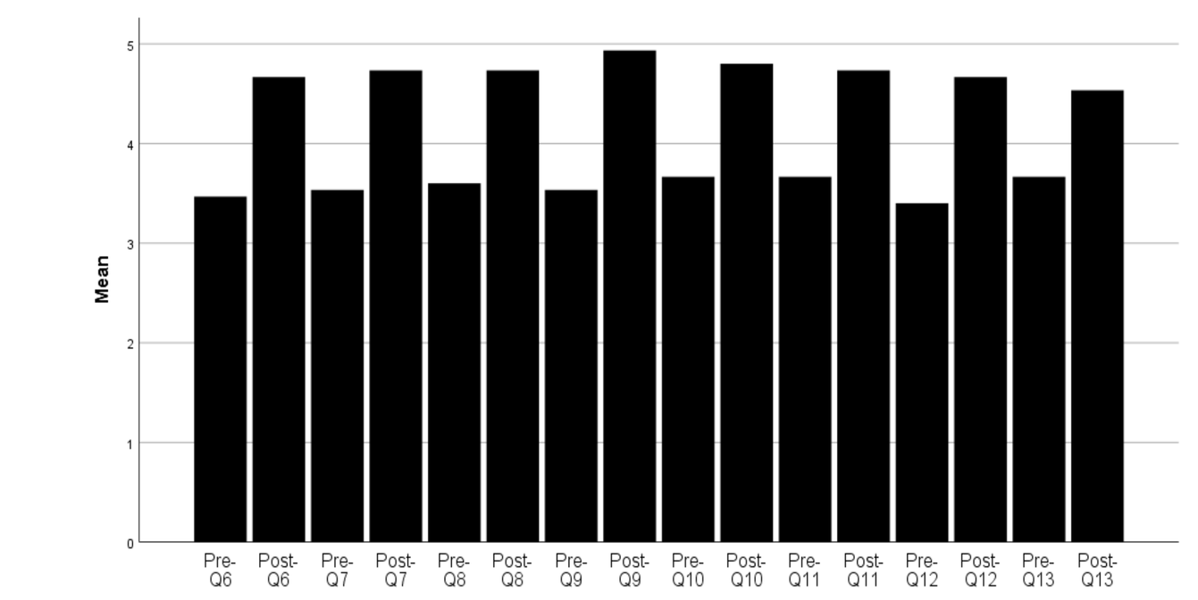
Descriptive Statistics

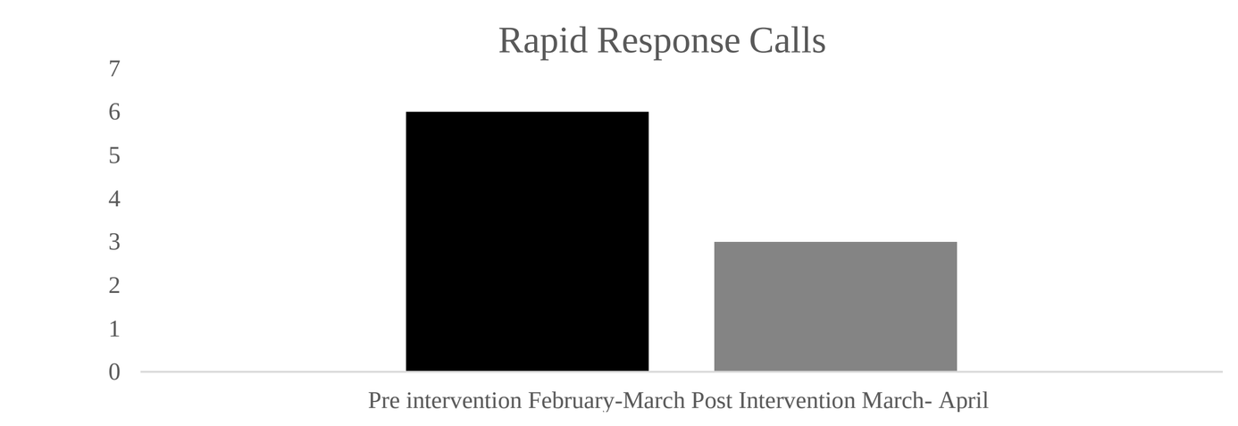
	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Pretotal	15	28.53	3.378	-.252	.580	-1.502	1.121
Posttotal	15	37.80	2.597	-1.018	.580	.019	1.121
Valid N (listwise)	15						

A statistically significant increase in the scores from pre to post, $t(14) = -9.88$, $p < 0.001$.

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Pretotal - Posttotal	-9.267	3.634	.938	-11.279	-7.254	-9.875	14	.000





IMPLICATIONS / CONCLUSIONS

A key nursing practice implication is simulation education is an effective means for improving clinical competency, confidence, and patient outcomes. Simulation in a method for clinical educators to promote patient safety and meet the demand for well-prepared NGNs.. Simulation experiences may play an integral role in shaping the orientation process for nursing education and increase confidence for NGNs. Confidence can impact how nurses think, believe, and respond. The simulation experience may increase the learner's competence; therefore, confidence can occur in increasing critical thinking skills and clinical judgment.

BIBLIOGRAPHY

Abe, Y., Kawahara, C., Yamashina, A., & Tsuboi, R. (2013). Repeated scenario simulation to improve competency in critical care a new approach for nursing education. *American Journal of Critical Care*, *22*, 33-40.doi: 10.4037/ajcc2013229
Aebersold, M. (2018). Simulation-based learning: no longer a novelty in undergraduate education. The Online Journal of Issues in Nursing (OJIN), 23, 1-13. https://doi.org/10.3912/ojin.vol23no02ppt39
Benner, P. (1982). Novice to expert. *The American Journal of Nursing*, *82*, 402-407. https://doi.org/10.2307/3462928
Benner, P. (1982). Novice to expert. *The American Journal of Nursing*, *82*, 402-407. https://doi.org/10.2307/3462928
Breen, D., Sinead, O, McCarthy, N., Gallagher, A., & Walshe, N. (2019). Effect of a proficiency-based progression simulation programme on clinical communication for the deteriorating patient: A randomised controlled trial. *BMJ Open*, *9*(7) doi:http://dx.doi.org/10.1136/bmjopen-2018-025992

Cooper, S. J., Kinsman, L., Chung, C., Cant, R., Boyle, J., Bull, L., ... Rotter, T. (2016). The impact of web-based and face-to-face simulation on patient deterioration and patient safety: protocol for a multi-site multi-method design. *BioMed Central Health Services Research*, *16*, 1-8. https://doi.org/10.1186/s12913-016-1683-0
Erlinger, L. R., Bartlett, a., & Perez, A. (2019). High-fidelity mannequin simulation versus virtual simulation for recognition of critical events by student registered nurse anesthetists. AANA journal, 87, 105-109. retrieved from https://search.proquest.com/docview/2208618794?accountid=14375.
Hsu, L., Chang, W., & Hsieh, S. (2015). The effects of scenario-based simulation course training on nurses' communication competence and self-efficacy a randomized controlled trial. *Journal of Professional Nursing*, *31*(1), 37-49. http://dx.doi.org/
IBM Corp. Released 2018. IBM SPSS Statistics for Windows, Version 26.0. Armonk, NY: IBM Corp
Jansson, M. M., PhD., Syrjälä, Hannu P, Ohtonen, P. P., Meriläinen, Kyngäs, H. A., , & Ala-Kokko, T. (2016). Randomized, controlled trial of the effectiveness of simulation education: A 24-month follow-up study in a clinical setting. *American Journal of Infection Control*, *44*(4), 387. Retrieved from https://search.proquest.com/docview/1781549158?accountid=28843

Lucas, A. N. (2014). Promoting continuing competence and confidence in nurses through high-fidelity simulation-based learning. *The Journal of Continuing Education in Nursing*, *45*, 360-365. https://doi.org/10.3928/00220124-20140716-02
Lucas, A. N. (2014). Promoting continuing competence and confidence in nurses through high-fidelity simulation-based learning. *The Journal of Continuing Education in Nursing*, *45*, 360-365. https://doi.org/10.3928/00220124-20140716-02
National Council of State Boards of Nursing (NCSBN) transition to practice (ttp) promoting public safety. (2013) retrieved from http://www.ndcenter.fornursing.org/wp- content/uploads/2013/08/12_transitiontopractice_factsheet.pdf
Purling A. King L. (2012). A literature review: Graduate nurses' preparedness for recognizing and responding to the deteriorating patient. Journal of Clinical Nursing, 21, 3451 - 3465. 10.1111/j.1365-2702.2012.04348.x
Sanko, J. S. (2017). Simulation as a teaching technology a brief history of its use in nursing education. *The Quarterly Review of Distance Education*, *18*, 77-85 102-103. Retrieved from https://search.proquest.com/docview/1955987437/fulltextPDF/DBBCD67F2BCC4984PQ/15?accountid=14375.
Stone, K. P., Patterson, M. D., Reid, J. R., Geis, G. L., & Auerbach, M. (2016). Simulation to improve patient safety in pediatric emergency medicine. *Clinical Pediatric Emergency Medicine*, *17*(3), 185-192. http://dx.doi.org/10.1016/j.cpem.2016.05.008
Tawalbeh, L. I., & Tubaishat, A. (2013). Effect of simulation on knowledge of advanced cardiac life support, knowledge retention, and confidence of nursing students in Jordan. *Journal of Nursing Education*, *53*(1), 38-44. http://dx.doi.org/10.3928/01484834-20131218-01
Waxman, K, T. (2010). The development of evidence-based clinical simulation scenarios: Guidelines for nurse educators. Journal of Nursing Education, 49(1), 29-35.Retrieved from https://pdfs.semanticscholar.org/09c7/187cd9a3e5d6011959539d7df7fcc0874105.pdf
Yamashina, a., & Tsuboi, r. (2013). Repeated scenario simulation to improve competency in critical care a new approach for nursing education. American Journal of Critical Care, 22, 33-40.doi: 10.4037/ajcc2013229
Wunder, L. L., Glymph, D. C., Newman, J., Gonzalez, V., Gonzalez, J. E., & Groom, J. A. (2014). Objective structured clinical examination as an educational initiative for summative simulation competency evaluation of the first-year student registered nurse anesthetists' clinical skills. *AANA Journal*, *82*, 419-425. Retrieved from https://search.proquest.com/docview/1648607496?accountid=14375