

Nursing Education Research Conference 2020

Building Collaborative Interprofessional Teamwork Skills with IPE and Simulation

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Interprofessional teamwork and collaboration among health professionals improves quality and safety for patients (Agency for Healthcare Research and Quality, 2000). Individual health discipline curriculum delivered in professional silos may not include opportunities for learning how to function in collaborative teams. Educators of health professions have struggled to determine the best methods of teaching and evaluating teamwork competency, and need evidence based interprofessional education (IPE) models.

Purpose:

The purpose of this study was to compare two IPE simulation teaching methods, examining the outcome of teamwork skills, and to determine if there are predictive factors for teamwork skills.

Methods:

Interprofessional Collaborative competency, consisting of sub-competency outcomes in knowledge, skill and attitude (KSA), were identified by an international team of experts (Interprofessional Education Collaborative, 2016). We used the sub-competency KSAs to guide our education design and outcome evaluation for a group of pre-licensure students from nursing, medicine, and respiratory therapy ($n=161$) at a single academic institution and practice setting partner.

We randomly assigned interprofessional teams ($n=19$ teams) and delivered either high dose, low frequency teamwork instruction in a single session immediately preceding a mock code simulation, or alternatively teams received small dose, high frequency instruction over four weeks leading to the simulation. Trained observers using video rated teamwork skills with a revised version of the Teamwork Performance Observation Tool (TPOT); a 20-item five-point Likert scale (Baker, Capella, Hawkes, Gallo, & Clinic, 2009).

Results:

We chose to compare team scores rather than individuals to capture the cumulative team effort. The total TPOT score comparison between groups revealed the high dose same day training groups were associated with higher team skill scores when compared to low-dose high-frequency delivery groups (M difference 8.32, 90% CI [16.03, .62] $p = .08$, small effect size $d = .09$).

Multiple regression analysis was used to determine if teamwork skills could be predicted by measures taken pre-simulation including levels of anxiety, feelings of preparation, and baseline teamwork attitude. Results demonstrated statistically significant prediction of team skills for anxiety ($p = .06$) and preparation ($p = 0.04$), but pre-simulation attitude was the least predictive of teamwork skills ($p = .70$).

Conclusions:

The ultimate purpose of IPE with simulation is to prepare students to transition their learning into practice. The high team skill scores in both teaching method groups demonstrated successful training that can transfer to practice (Hayden, Smiley, Alexander, Kardong-Edgren & Jeffries, 2014). Similar studies using same day

preparation also demonstrated effective team skill outcomes (Brock et. al, 2013, Sawyer et al., 2013). This study design contributes to the IPE and team training research literature in two ways that have been under-studied: 1) as a model for collecting data at the team unit level as opposed to the individual level, and 2) comparison of pre-simulation education time-delivery. Teams function as a unit, and to measure at the individual level may misrepresent the effect of collective teamwork skill. The small difference in teamwork skills between groups may suggest that either method is effective, allowing the educator to choose what works best for their curriculum.

Title:

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Keywords:

Collaborative practice, Interprofessional education and Teamwork

Abstract Summary:

This session describes a comparative study looking at two methods of educating learners for interprofessional collaboration followed by simulation. Measurable outcomes of learning focused on differences between education groups, as well as predictors of teamwork skills.

References:

- Agency for Healthcare Research and Quality. (2000). Doing what counts for patient safety: Federal actions to reduce medical errors and their impact. Rockville, MD: Agency for Healthcare Research and Quality.
- Baker, D., Capella, J., Hawkes, C., Gallo, J., & Clinic, C. (2009). The development of the Trauma Team Performance Observation Tool (TPOT). 26th Annual Meeting of the Society for Industrial and Organizational Psychology, (pp. 1-17), Chicago IL.
- Brock, D., Abu-Rish, E., Chiu, C., Hammer, D., Wilson, S., Vorvick, L., . . . Zierler, B. (2013). Interprofessional education in team communication: Working together to improve patient safety. *British Medical Journal of Quality and Safety*, 22(5), 414-423.
- Hayden, J. K., Smiley, R. A., Alexander, M., Kardong-Edgren, S., & Jeffries, P. R. (2014). The NCSBN national simulation study: A longitudinal, randomized, controlled study replacing clinical hours with simulation in prelicensure nursing education. *Journal of Nursing Regulation*, 5(2 Suppl), S1-S64.
- Sawyer, T., Laubach, V., Hudak, J., Yamamura, K., & Pocrnich, A. (2013). Improvements in teamwork during neonatal resuscitation after interprofessional TeamSTEPPS training. *Neonatal Network*, 32(1), 26-33. doi:10.1891/0730-0832.32.1.26
- Watts, P., Langston, S. B., Brown, M., Prince, C., Belle, A., Skipper, M. W., . . . Moss, J. (2014). Interprofessional education: A multi-patient, team-based intensive care unit simulation. *Clinical Simulation in Nursing*, 10(10), 521-528. doi.org/10.1016/j.ecns.2014.05.004

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Author Summary: Diane Brown is a nurse educator with over 20 years of experience teaching and implementing interprofessional education and simulation at the University of Akron. She was chosen as a QSEN representative in 2011, a HITS scholar in 2012, a TeamSTEPPS Master trainer in 2014, and was awarded the Excellence in Nursing Education faculty award from STT Delta Omega chapter in 2014. She has multiple publications and presentations on topics related to interprofessional education and simulation.