

Background and Significance

- Airway fires are the most common surgical fire in the operating room (OR).
- Poor team communication are risk factors for preventable errors in operating rooms (OR).
- Interprofessional simulations (IPEsims) have improved teamwork communication during surgical procedures.

Purpose and Hypothesis

- **The purpose** of this pre-post pilot study was to test the effect of participation in a high fidelity, inter-professional surgical airway fire simulation on beliefs about interprofessional education, team communication skills, and knowledge of the prevention and management of airway fires in the OR.
- **Hypotheses:** Participation in three experiential based perioperative simulation increases beliefs about interprofessional education, knowledge about team communication and airway safety for participants.

Theoretical Framework

- Kolb's Experiential Learning Theory guided educational framework for simulations.
- Learning process includes concrete experience, reflective observation, abstract conceptualization, and active experimentation.

Study Protocol

- Simulation pre-briefing.
- 3 groups of 8 students (2 from each discipline).
- Tracheostomy Simulations: 1) uncomplicated, 2) airway fire, and 3) uncomplicated.
- De-briefing: Discussion of what went well, areas needing improvement: team communication and fire hazards
- Completion of post simulation surveys.

Methods

- **Design:** Pre and post pilot study.
- **Recruitment:** Participants recruited by faculty received email link to pre-simulation materials and REDCap pre-simulation surveys.
- **Participants:** learners in perioperative nursing (n = 4), surgery (n = 7), anesthesia (n = 3), and pharmacy (n = 2); mean age: 30 ± 8.27.

Variables/Instruments:

- Beliefs about interprofessional education/*Collaborative Healthcare Interdisciplinary Planning*.
- Knowledge of team communication/*Interprofessional Attitudes Scale*.
- Knowledge of airway safety/*Modified MedEdPortal Airway Safety*.
- Program evaluation: Rating of mechanics of simulation on a scale of 1 (unsatisfactory or unacceptable) -5 (exceptional or outstanding). Open ended questions asked about what information was most and least useful.

Results

- All post simulation scores improved ($p < 0.05$).
- Program Evaluation scores were satisfactory or above (range = 3 to 4.23).

Program Evaluation Responses

Most Useful	Least Useful
<ul style="list-style-type: none"> • Interaction with 4 professions. • Observation at start of surgery; roles. of nurse, anesthesiologist, surgeon. • Participating in simulation; de-brief. from 4 disciplines with strategies to reduce risk, keep patients safe. 	<ul style="list-style-type: none"> • Pharmacy and nursing students did not seem to have a significant role. • PowerPoints talks on communication. • Survey questions not addressed during pre or post briefing.

"... many times when we have problems there is a breakdown in communication, and working through simulation together helps us be more comfortable working as a team and communicating during stressful situations."

- Participating Student Quote



Discussion

- Beliefs and knowledge scores improved and were supported by student feedback.
- Identified need to strengthen the active role of nurses and pharmacists in this scenario.
- More time needed to address survey questions.

Conclusions/Recommendations

- Revise airway fire safety simulation to include: specific content for nursing and pharmacy students,
- Have faculty in room to provide cues as necessary, de-brief after each simulation.
- Develop and test a trauma simulation and include nursing interns, externs, and residents to study impact on retention rates.

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