

Beyond the Broselow : Bridging the Knowledge Gap for Emergency Room Providers Delivering Care to Pediatric Patients

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Background

The treatment of pediatric patients in the emergency department (ED) setting is complex due to varying developmental and physiologic changes among children. Knowledge gaps and reduced comfort levels have been identified among healthcare providers who deliver care to these patients. **Only 14% of EDs nationwide have been certified to effectively treat pediatric patients**, in part, due to deficiencies in pediatric educational resources for healthcare providers.

Methods

Between April 24 and July 20, 2024, an evidence-based and expert-reviewed e-learning module focusing on pediatric airway management was developed and distributed to various IL based healthcare providers involved in the care of infants and children. **Participants completed a comprehensive module on the Teachable platform including video-based learning.** Descriptive analysis demonstrated pre- and post-module knowledge and self-efficacy change scores. Survey data was collected utilizing Qualtrics™. IRB approval was obtained 04/12/24 (#CON24-433)

Participants

Demographics	Number of Participants
Gender	Prefer not to say (n= 1, 0.06%) Male (n= 2, 12%) Female (n= 14, 82%)
Age (years)	55 and over (n= 1, 0.06%) 45-54 (n= 5, 30%) 35-44 (n= 3, 18%) 25-34 (n= 8, 48%)
Title	Respiratory Therapist (RT) (n= 1, 0.06%) Advanced Practice Registered Nurse (APRN) (n= 7, 41%) Registered Nurse (RN) (n= 9, 53%)
Department	Intensive Care Unit (ICU) (n= 2, 12%) Other (n= 2, 12%) Emergency Department (ED) (n= 3, 18%) Anesthesia (n= 4, 24%) Transport Team (n=6, 35%)
Pediatric Advanced Life Support Certification	No (n= 3, 18%) Yes (n= 14, 82%)
Involved in a Pediatric Intubation /Code Event	No (n= 2, 12%) Yes (n= 15, 88%)
Access to Pediatric Emergency Physician/Hospitalist	None Available (n= 3, 18%) Unknown (n= 3, 18%) In-House 24/7 Coverage (n= 11, 65%)



Whyte, Liz, & Evans, Melanie. (2023, October 1). Children Are Dying in Ill-Prepared Emergency Rooms Across America. *The Wall Street Journal*. <https://www.wsj.com/health/healthcare/hospitals-emergency-rooms-cost-childrens-lives-d6c9fc23>

Recommendations

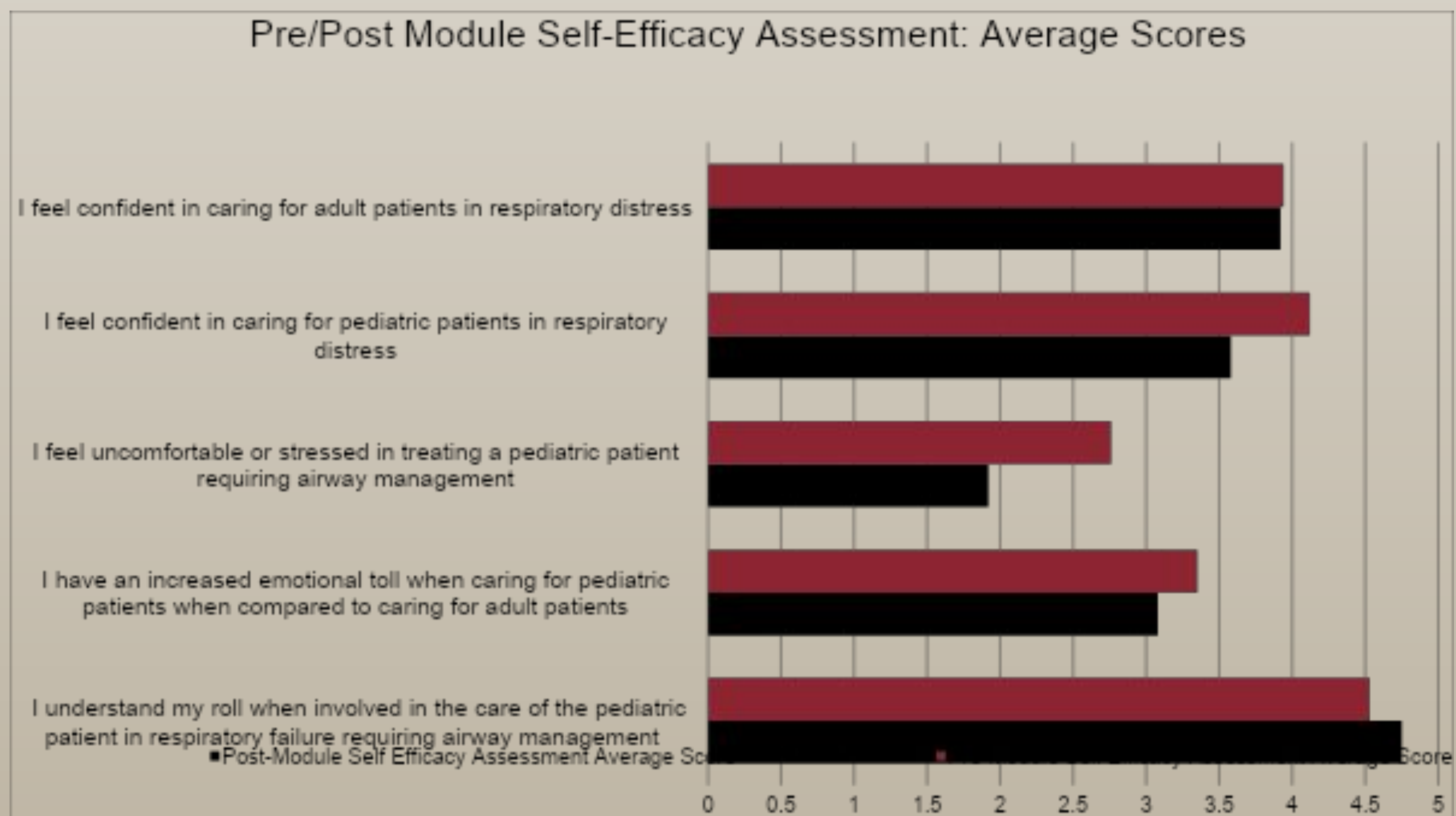
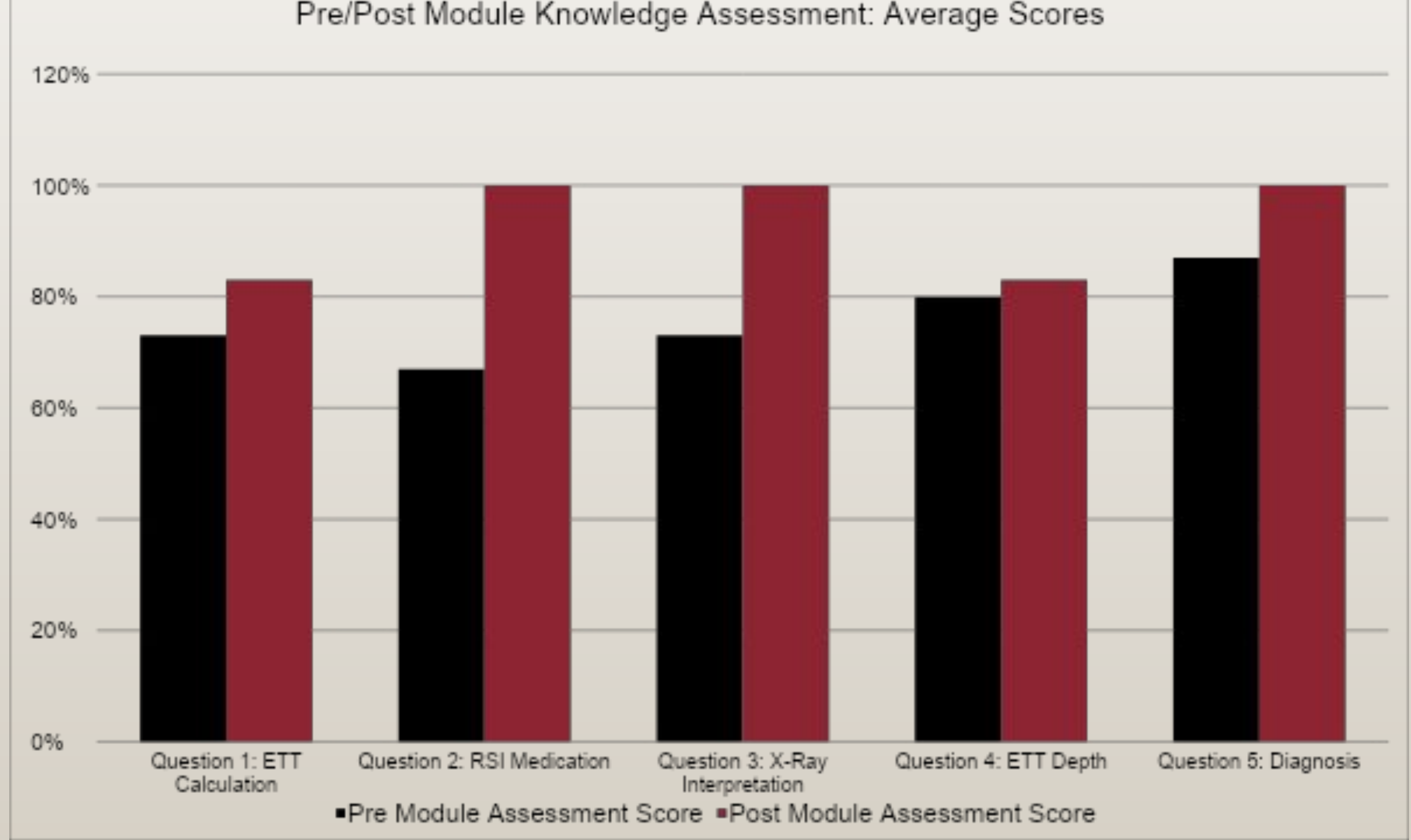
- Many surveys were incomplete due to the uninhibited access to the module. **We recommend that future learning modules lock the user in completion of each survey before progressing.**
- Considering the difficulty in obtaining continuing education credits for all professions, the researchers suggest that the following studies be limited to the **nursing profession, allowing for continuing education credits to be obtained**
- Implementing this module within a specific community, and/or rural ED for nurses to complete as part of their yearly continuing education, would allow for further evaluation of the effectiveness of this module.**
- Other unit-based studies may be beneficial that isolate provider’s skills and patient outcomes** both pre- and post-education. For example, medication errors during pediatric RSI, first pass intubation rates, and hypoxia during intubation could all be evaluated to show the effectiveness of this module.

Reference Link



Results

- 17 learners participated with a total **completion rate of 70.6%**
- 88.2% learners completed the pre-module knowledge assessment
- The average pre-module knowledge assessment score was 76%
- The post-module knowledge assessment average **increased to 93%**
- Self-efficacy scores **increased from 47% pre-module to 75% post-module.**
- All strongly agreed that they could apply knowledge gained from the module into clinical practice.



Discussion

The findings from this project supported the use of online modules to supplement education. **Positive correlations were identified by increases in both knowledge and self-efficacy scores as well as unanimous positive feedback in the post-module survey related to treating pediatric airway complications.** The researchers were able to directly contact and coach over 40 participants on how to register and take the module. However, the initial goals of the project intended to reach a larger sample size.