



Perception of Comfort, Knowledge Retention and Teamwork in Cardiothoracic ICU Staff During Cardiac Advanced Life Support Implementation



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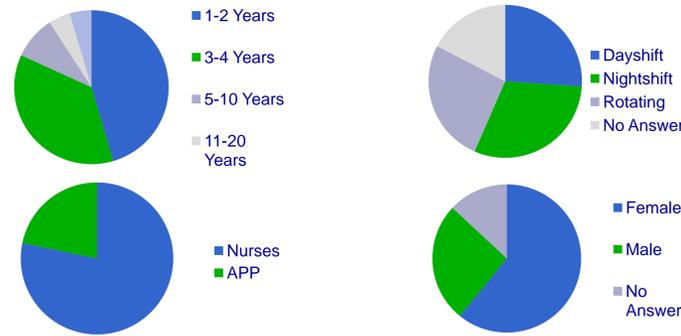
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ABSTRACT

Purpose — The intent of this study was to evaluate the perception of CTICU staff nurses (RN) and advanced practice providers (APPs) knowledge of, comfort level with, and teamwork during chest re-opening. **Background/Significance** — Chest re-opening occurs for patients who suffer cardiac arrest post cardiac surgery while still in the ICU; historically it is a high anxiety, nerve-wracking situation. A formal protocol for chest re-opening was introduced into our CTICU. We hypothesized that formal training on chest re-opening would improve RN and APP comfort and knowledge of the process, as well as improve the perception of teamwork during the chest re-opening process. **Method** — Education of the new process occurred in an 8 hour day, and included didactic lectures, problem based learning, return demonstration and simulation. A pre-post study design was utilized. A 16 question survey was distributed to RNs and APPs before education, then six and 12 months post training. A total of 25 staff completed all 3 surveys. Data was collected and analyzed utilizing repeated measure ANOVA in Microsoft Excel. **Results** — Training improved staff perception of knowledge and comfort regarding the standardized process, although comfort level declined between six and 12 months. Staff reported increased knowledge levels at 6 and then 12 months, but knowledge of process specifics (knowing where to find items, inclusion criteria for process, knowledge of items in open chest tray) declined between six and 12 months. Perception of teamwork during chest re-opening increased with time, although findings were not statistically significant. **Conclusions** — A mixed methods training program was effective to increase staff comfort with and knowledge of a standardized process for chest re-opening, although perception of both these constructs declined over time. Repeat education of resuscitation programs should occur on more frequent intervals to ensure knowledge retention and staff comfort.

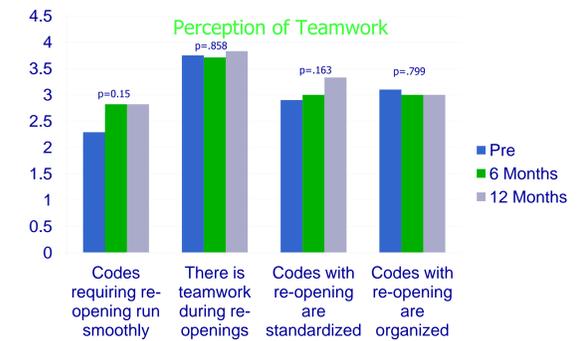
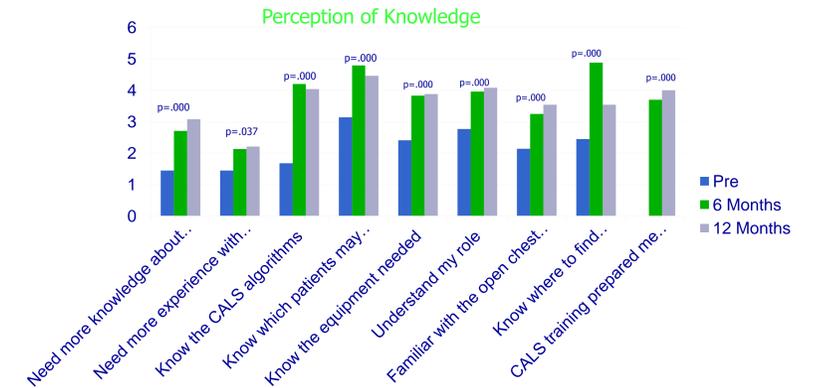
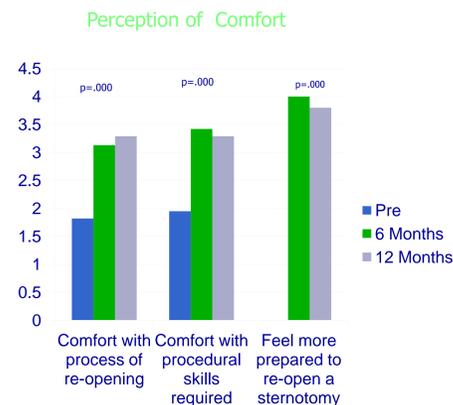
INTERVENTIONS

Surveys of 16 questions were distributed to class participants pre, 6 months, and 12 months post-education. Responses were based on a 5 point Likert scale with an option for not applicable. Eighty-one surveys were distributed, with 23 participants returning all 3 surveys for a participant rate of 28.4%. The majority of respondents were female, nurses, worked nightshift and had been in their current position for 1-2 years. Statistics were performed using Microsoft Excel.



FINDINGS

After CSU-ALS education, reported knowledge and comfort levels were increased above baseline at both 6 and 12 months. At 12 months, participants reported wanting more knowledge about re-opening and more experience. Knowledge of process specific items, such as where to find equipment declined at 12 months. Comfort with procedural skills and a feeling of preparedness to re-open sternotomies also declined at 12 months. The perception of teamwork increased at both 6 and 12 months.



NEXT STEPS

The findings indicate that the knowledge and comfort level of participants was inversely related to the time since education, which indicates the need for more frequent re-education. This concept is supported by literature, as retention of knowledge begins to decline as soon as 8 weeks post-training^{1,2}. What is not known is how comfort affects performance in chest re-opening situations, or what factors led to the decrease in comfort and knowledge levels. These aspects could be an avenue for future research.

REFERENCES

Bukiran, A., Erdur, B., Ozen, M & Bozkurt, A. I. (2013). Retention of nurses' knowledge after BLS/ACLS training at immediate, 6-month, and 12-month post-training intervals: A longitudinal study of nurses in Turkey. *Journal of Emergency Nursing*, in press, doi: 10.1016/j.jen.2012.08.011.
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BACKGROUND

Cardiac Advanced Life Support (CSU-ALS) is a concept that was introduced in Europe for patients with median sternotomies, to allow for rapid chest re-opening and early internal cardiac massage. Although chest reopening occurs on a fairly frequent basis in cardiothoracic intensive care settings, a formal training program for chest re-opening was new. A multidisciplinary committee created an 8 hour educational program involving hands on practice, lectures and return demonstration.