Creating an Educational Module to Improve the Calculation of Total Body Surface Area Burned

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Introduction

The limited number of verified Burn Center's around the country coupled with a lack of education regarding the care of burn patients has led health care practitioners to be unable to accurately calculate a patients' total body surface area burned (TBSAB).

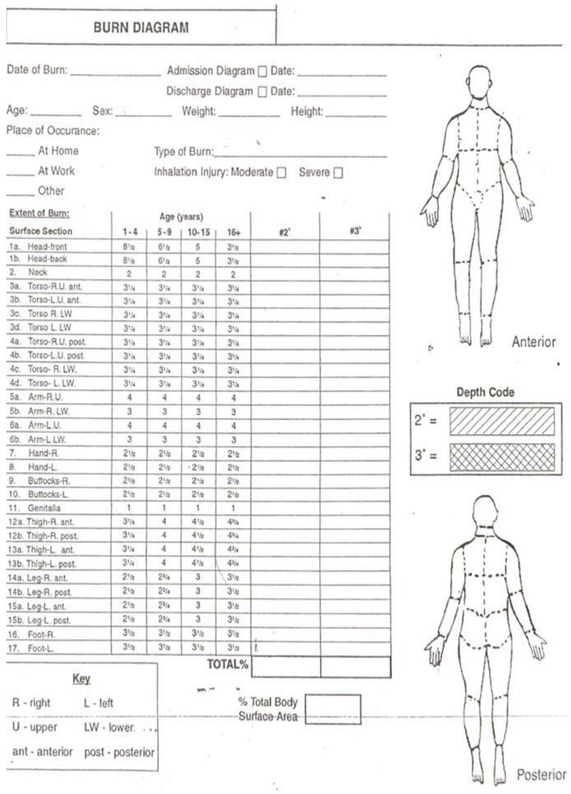
Education of Advanced Nurse Practitioner (APN) students is a method to increase the knowledge future practitioners in proper calculation of TBSAB, decreasing the morbidity and mortality associated with incorrect calculation.

Background and Significance

- Miscalculation frequently occurs in the TBSAB calculation by non-burn specialists
  - 50% are overcalculated
  - 17% are undercalculated
- Miscalculation leads to:
  - Incorrect fluid resuscitation
  - Increases the morbidity and mortality of burn patients.
- The Department of Health and Human Services, Health Resources and Services Administration, and the Bioterrorism Hospital Preparedness Program mandated all states to implement a plan to mobilize and manage burn patients
- Non-burn specialists expressed their lack of education and confidence to care for burn patients

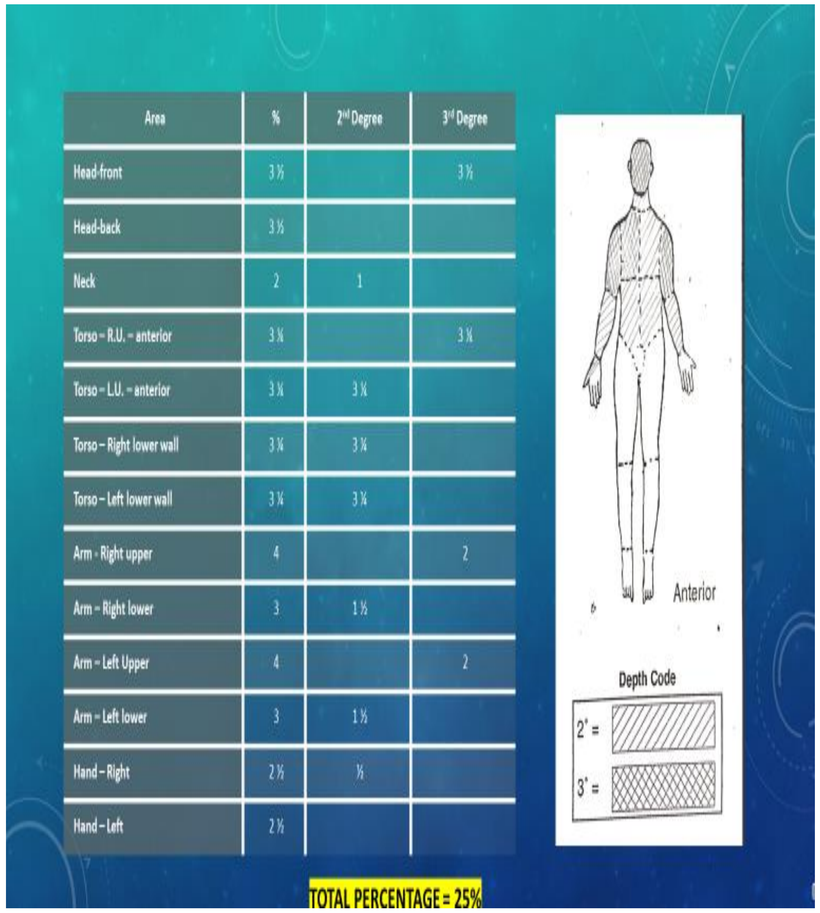
Methods

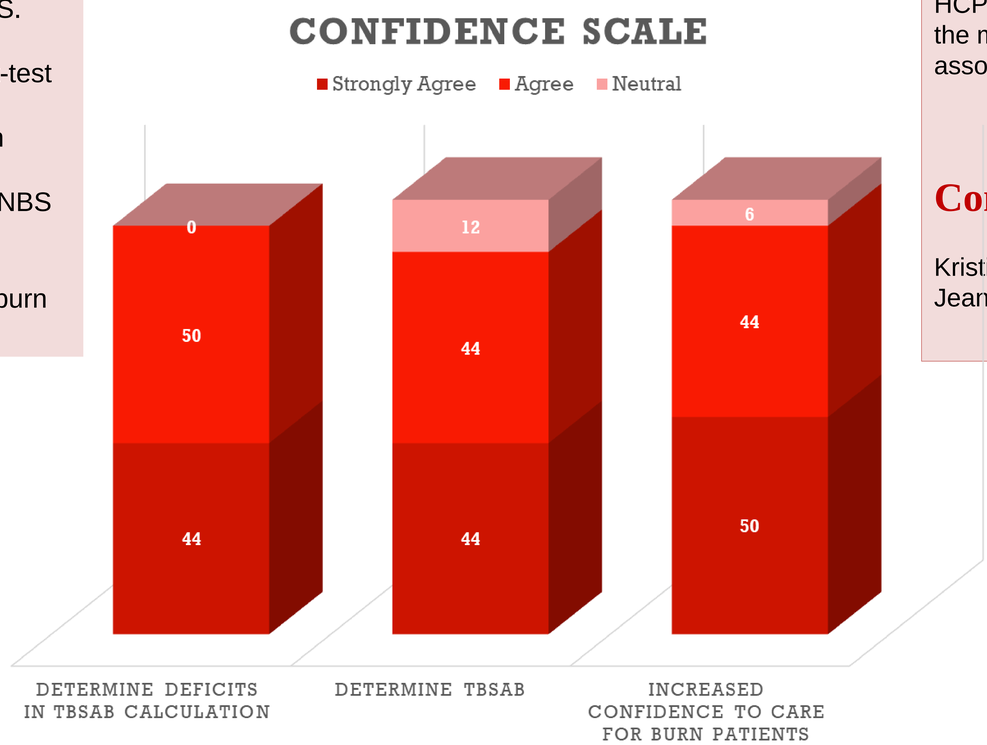
- APN students were invited to participate in a Canvas educational module in an interactive module, where they learned to calculate TBSAB, and how to calculate fluid requirements in a fictional patient
- Pre and post tests determined knowledge gained.
- A self-confidence questionnaire was given to discover if participants experienced an increased confidence to care for burn patients after completion of the module.



Results

- 33 students participated
- A Wilcoxon Rank Sum Test using SPSS.
- Results showed a p value of 0.122
- Mean score between pre-test and post-test improved 4 ¼%.
- 53% of participants calculated the burn percentage correctly, improved from previous research finding only 30% of NBS calculate the TBSAB correctly
- Overall, participants experienced an increased confidence level to care for burn patients





Conclusions

The project to improve TBSAB calculation among HCP was intended to increase education and confidence levels among HCP in the initial management of patients suffering burn injuries. Research has revealed non-burn specialists are not adequately prepared to manage burn patients nor do they feel confident to care for patients in the initial hours after injury. This information is vital for providers to be prepared for a mass casualty incident which could lead to burn surge events in any hospital around the country. The education took place in an online education platform available through the School of Nursing to APN students who met the inclusion criteria. The results of the educational module were not statistically significant, however participants scored higher than previous research in determining the TBSAB percentage, and 94% of participants agreed they felt an increased confidence level to care for burn patients upon completion of the module.

Implications on Practice

Introducing education to current and future HCP in the calculation of TBSAB can decrease the morbidity and mortality of burn patients associated with the initial TBSAB miscalculation.

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