

Improvement of First Aid Knowledge and Skills Confidence in First-Year Medical Students



WAYNE STATE
School of Medicine

Brandon Holland¹, Alejandro Ponce¹, Andrew Kirmse¹, Shobi Mathew¹, Alyssa Dsouza¹, Alexander Wind¹,
Rooshan Arshad¹, Joshua Kirschner¹, Kristiana Kaufmann MD¹

1. First Aid First, Wayne State University School of Medicine



INTRODUCTION

- First aid (FA) training is not standardly incorporated into didactic medical school curriculums across the United States.
- Consequently, graduating fourth-year medical students often demonstrate a lack of confidence and competency in their ability to participate in adult and pediatric resuscitations among other skills, especially without continuous opportunities to practice.

OBJECTIVE

- Since pre-clinical exposure to emergency response and confidence of using relevant hands-on skills in insufficient, we investigated the improvement of knowledge of proper FA response and confidence of using FA skills following early undergraduate medical FA training in an incoming cohort of first-year medical students (Class of 2026) at the Wayne State University School of Medicine (WSUSOM).

METHODS

Pre-survey

- A twenty-question pre-test formulated by WSU Department of Emergency Medicine faculty was utilized to establish baseline student FA knowledge and confidence.

First Aid First training

- Online lecture teaching first aid topics and an in-person hands-on training session putting learned skills to use.

Post-survey

- Reassessment on the same twenty questions that were previously given now to evaluate for improvement in FA knowledge after completion of training.

- Pre- and post-training survey implementation, data collection and storage, and primary data analysis was conducted through the REDCap database.
- The primary outcome of this study was to identify trends in FA knowledge and abilities after completion of training.
- Secondary outcomes included: identification of confidence trends relating to performance of first aid skills such as cardiopulmonary resuscitation (CPR), choking intervention, and bleeding management; concerns with intervening in specific emergency scenarios including fear of potential contamination and potentially causing additional injury through improper first aid administration; comprehension of Good Samaritan legislation; and lastly, student satisfaction in training quality and applicability as assessed by Likert feedback scale.

RESULTS

304 first-year medical students were included in the database. 148 students completed the corresponding post-survey, yielding a response rate of 48.7%.

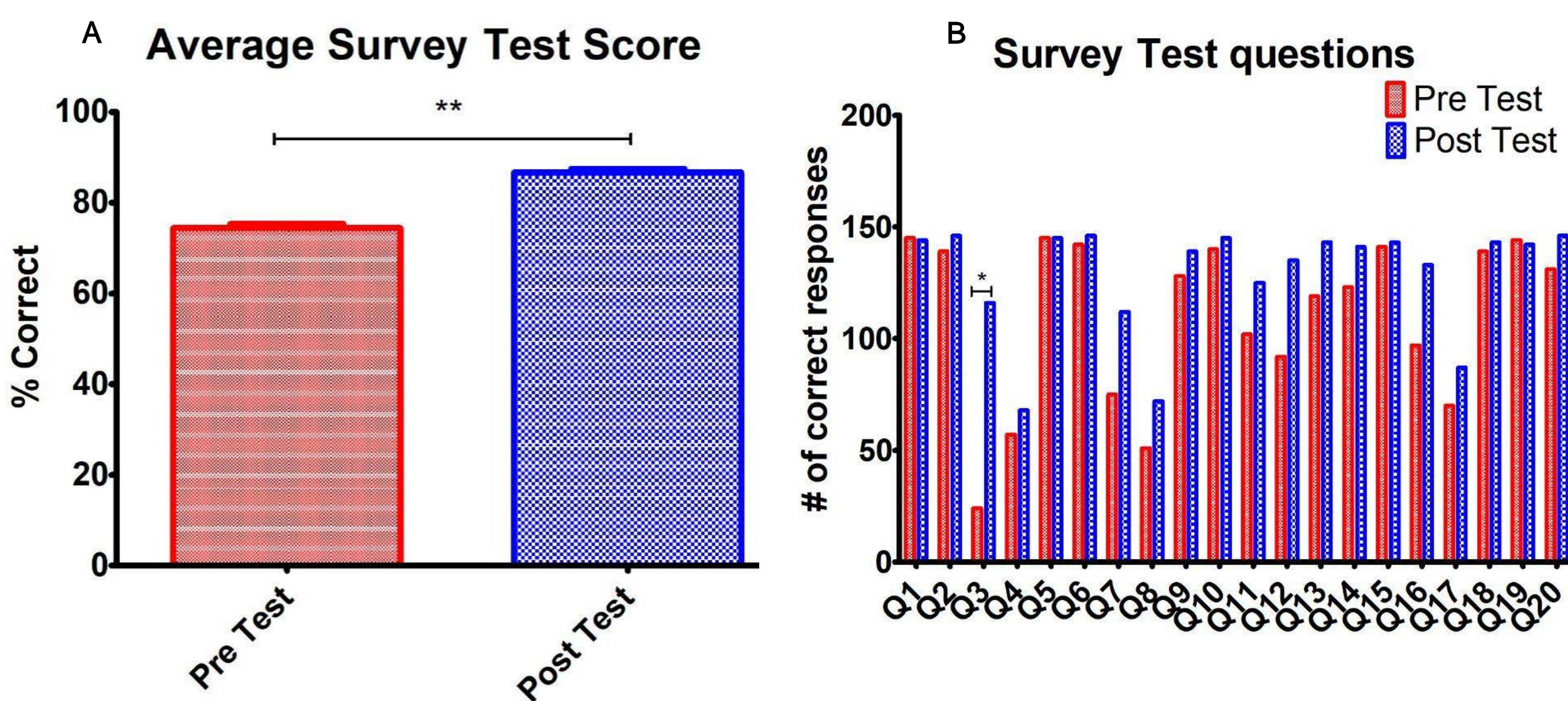


Figure 1: Increase in test scores after training

Average pre-test score was 74.3% correct. Average post-test score was 86.5%, yielding an improvement of 12.2% from baseline ($p < 0.001$, A). 9 of 20 knowledge-based questions showed $> 10\%$ improvement post-training, the highest differential showing 59% improvement ($p < 0.001$, B). One question had a 1.1% decline in percent correct, which was not statistically significant ($p = 0.282$).

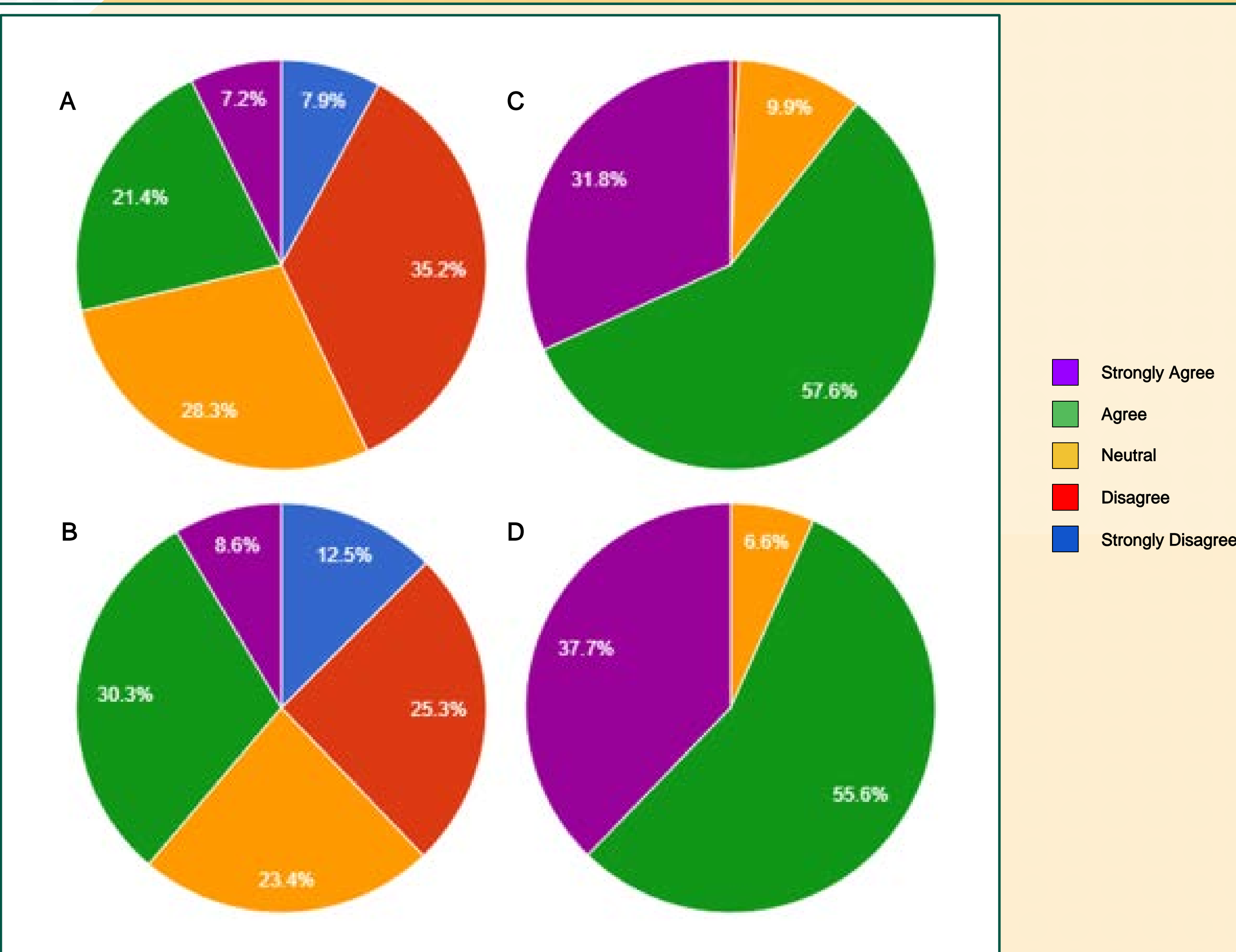


Figure 2: Increase in student confidence in their first aid skills

Initially 87 students (28.6%) agreed or strongly agreed in being confident in responding to a medical emergency (A). After FA training, 133 students (89.2%) agreed or strongly agreed, demonstrating an improvement in personal confidence of 60.6% ($p < 0.001$, B). Regarding CPR performance, 118 students (38.9%) felt confident at baseline (C). Post-training, 139 students (93.3%) reported strong confidence performing CPR ($p < 0.001$, D).

RESULTS

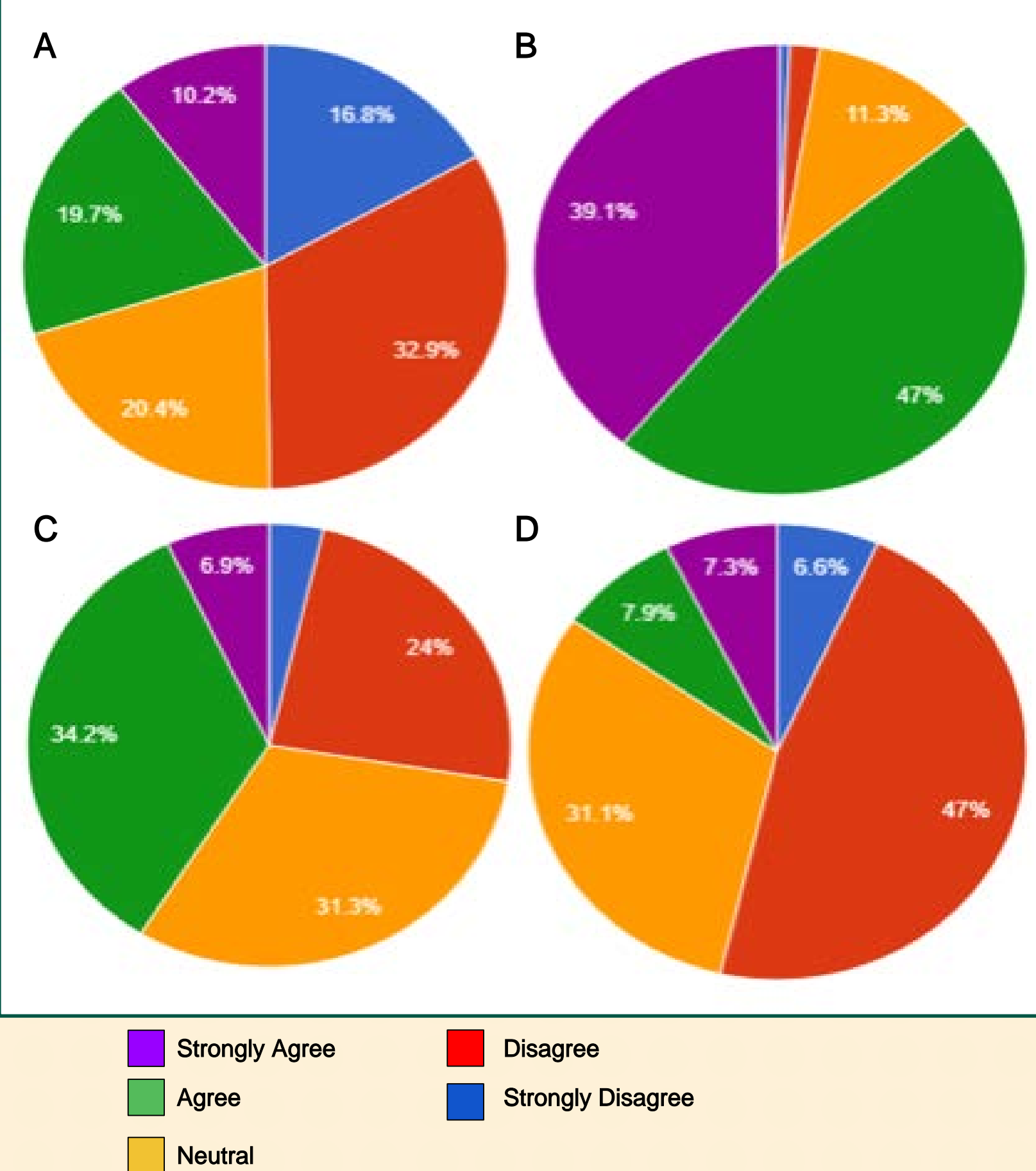


Figure 3: Increase in student understanding about Michigan Law and decrease in fear of causing injury to others

Prior to training, only 91 students (29.9%) reported understanding the application of Good Samaritan laws in the state of Michigan (A). Additionally, 125 students (41.1%) were concerned they might cause additional harm by intervening in an emergency scenario (B). Following training completion, 130 students (86.1%) agreed in understanding Good Samaritan laws concerning CPR and AED use on another person (C). As well, only 23 students (15.2%) now were concerned with causing potential injury when performing FA (D).

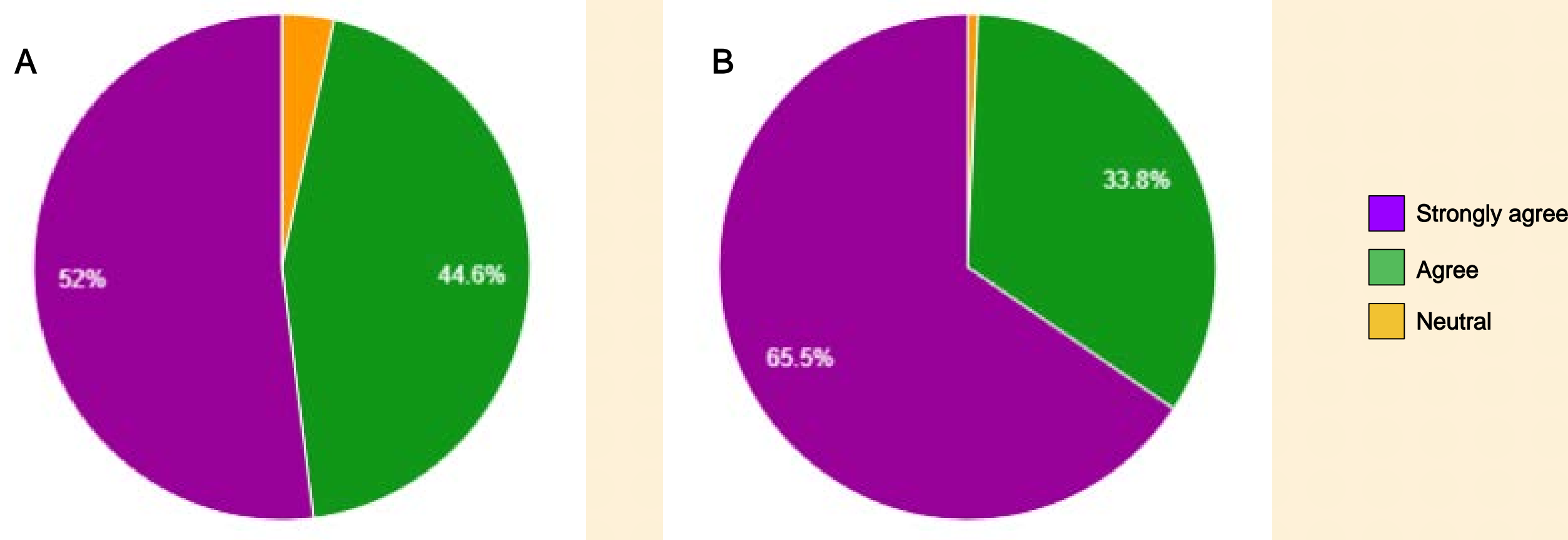


Figure 4: Medical student responses to "Did you think the teaching was effective?" and "Did you think this FA course helpful as an incoming medical student?"

Regarding FA training effectiveness and utility, an overwhelming majority of students expressed agreement. 96.6% of students thought the teaching was effective (A). 99.3% of students believed the FA course to be helpful as an incoming medical student (B). In both scenarios, there were no students that reported disagreement.

CONCLUSIONS

- Our findings demonstrate that first-year medical students are improving their foundational FA knowledge and skills through early FA training implementation.
- Even with limited clinical exposure, the large positive response to participating in early FA training further validates the importance of including formalized FA training opportunities both earlier and longitudinally throughout the medical school curriculum.
- These results may help lower the overall rates of students that do not feel confident in their ability to engage in practical skills such as CPR upon graduating medical school.