

Improving Skill Proficiency in *Stop the Bleed* Participants

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Background

As *Stop the Bleed* becomes a staple of injury prevention programs for trauma centers, more research is needed to validate the efficacy of the tourniquet placement and wound-packing skill stations. While the lecture presentation is provided by the American College of Surgeons, the methods used to teach the skill stations may vary greatly. As our trauma center first began teaching this course, we had one station each for tourniquet placement and wound packing. Our instructors received feedback that participants desired additional skill stations to improve proficiency.

Purpose

We tested perceived skill proficiency in the pre-intervention (one skill station per skill) versus perceived skill proficiency in the post-intervention (multiple skill stations per skill).

Study Design

Anonymous surveys were completed by all class participants, who were asked about their assessment of their own proficiency packing a wound and placing a tourniquet.

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Stop the Bleed Participant Survey

Please provide feedback regarding your recent "Stop the Bleed" training to help us improve this course. The results of the survey may also be used in scientific publications to help the "Stop the Bleed" campaign on a national level. The results of the survey will remain anonymous. Thank you for your time and input.

Instructions: Please indicate your response next to each question.

- Age _____
- Gender _____
- Occupation _____
- Highest level of education you have completed _____
- Have you had any prior medical training? ___Yes ___No
- If yes, please explain: _____
- In the past, have you ever been in a situation where the knowledge you obtained in this course would have been helpful? ___Yes ___No
- Did you find the lecture helpful? ___Yes ___Somewhat ___No
- Did you find the simulation stations helpful? ___Yes ___Somewhat ___No
- Do you feel prepared to apply a tourniquet? ___Yes ___Somewhat ___No
- Do you feel prepared to pack a bleeding wound? ___Yes ___Somewhat ___No
- Would you recommend this course? ___Yes ___No
- What can we do to improve this course?
 Provide pre-course reading
 Provide a booklet
 Provide more simulation stations
 Other (please explain): _____

Figure 1: *Stop the Bleed* Participant Survey

Setting

Surveys were completed at high schools, churches, workplaces, and in the Level I Trauma Center.

Sample

The sample was 387 surveys of participants with an occupation of student, business, or community.

Methods

Stop the Bleed instructors taught the course from July 2017-November 2017 (pre-intervention) using one skill station each for wound-packing and tourniquet placement, as per the American College of Surgeons' Instructor Guidelines.

From January 2018-May 2018 (post-intervention), we offered three tourniquet placement stations and two wound-packing two stations instead of only one for each skill. Anonymous paper surveys were given to all participants at the end of the course during both the pre and post intervention. On the survey, participants were asked to assess their own skill proficiency with these questions:

- "Do you feel prepared to apply a tourniquet?"
- "Do you feel prepared to pack a bleeding wound?"

Surveys were entered in Survey Monkey for analysis.



Figure 2: Students applying a CAT



Figure 3: Firefighters packing a simulated wound

Background

Responses to the survey questions were as follows:

| | "Do you feel prepared to apply a tourniquet?" | | "Do you feel prepared to pack a bleeding wound?" | |
|----------|---|-------------------|--|-------------------|
| | Pre-Intervention | Post-Intervention | Pre-Intervention | Post-Intervention |
| Yes | 30 | 323 | 30 | 307 |
| Somewhat | 7 | 24 | 8 | 41 |
| No | 0 | 2 | 0 | 1 |

A chi-square test for association using a p value=0.05 was conducted on both survey questions with pre versus post intervention data. For the tourniquet question, differences among the outcome percentage profiles were significant (P=0.034). For the wound packing station, the differences among the outcome percentage profiles were not significant (P=0.250).

Conclusions

The data indicates that additional tourniquet placement stations increased perceived proficiency in this skill, but additional wound packing stations did not increase perceived skill proficiency among *Stop the Bleed* participants. Because of the association between increased number of tourniquet placement skill stations and proficiency, our Injury Prevention program will continue to teach this course with these tourniquet skill stations:

- Applying a Combat Application Tourniquet (CAT) to a mannequin;
- Applying a CAT to a person; and
- Provisioning and applying an improvised tourniquet from readily-available materials to a person or mannequin.



Figure 4: Student provisioning a tourniquet from a bandanna.



Figure 5: Students provisioning tourniquets from belts and bandannas