

BACKGROUND

- Hemorrhaging, or excessive bleeding, accounts for 40% of deaths that occur after a traumatic injury.
 - Deaths by excessive bleeding can easily be prevented with proper recognition and early intervention
- Traumatic injuries may be caused from natural disasters, motor vehicle accidents, sport injuries, violent attacks, and many other ways. In 2014, traumatic injuries were the third leading cause of death across all ages in the US.
- In 2015, the national “Stop the Bleed” Campaign was implemented to increase public awareness and provide education on bleeding control techniques to prevent deaths.
 - Has support from American College of Surgeons, the Committee on Trauma, the Hartford Consensus, and the Department of Homeland Security
- Providing instructions to people without medical experience of how to apply a combat application tourniquet (CAT) correctly has been shown to improve success rates.

METHODS

Study Design:

- Cross Sectional Pre-Post Survey Design to evaluate the effectiveness of the “Stop the Bleed” bleeding control educational course.

Population:

- Employees within the Thomas Jefferson University Campus Security department (N=32).

Data Collection:

- Pre-Post Knowledge and Confidence Assessment
 - 12 knowledge-based questions
 - 4 confidence-based questions - using Likert scale (1-4)

Intervention:

- Official “Stop the Bleed” Bleeding Control (B-Con) Course
 - Evidence-based, standardized educational course implemented by the National Association of Emergency Medical Technicians (NAEMT).
 - Included educational pamphlets, PowerPoint presentation, and hands-on practice.
 - Training materials that were used for the practical section of the course included training tourniquets, hemostatic dressings, and a bleeding control practice limb.

Data Analysis:

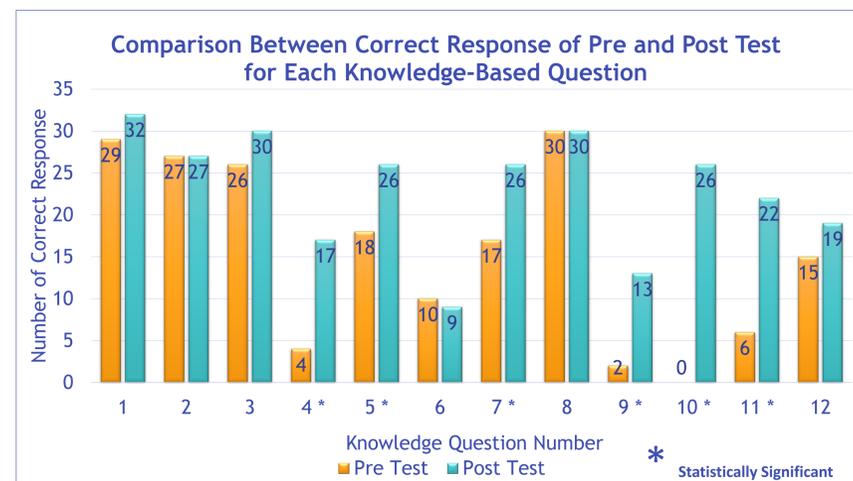
- Paired-T statistical test using SPSS - for continuous variables
 - Used to compare overall knowledge scores and overall confidence scores
- McNemar’s Chi-Square statistical test using SPSS - for counts
 - Used to compare pre and post responses for each individual question
- Frequency analysis on SPSS
 - To determine which questions on the assessment were most frequently answered correctly, incorrectly, improved confidence, decreased confidence, or no change in confidence from pre to post.

RESULTS

Comparison between Overall Knowledge Scores from Pre to Post

Group	N	Mean	Std. dev.	Std. Err.	T value	P-value
Pre-Test	32	5.69	1.469	0.260		
Post-Test	32	8.69	2.389	0.422		
Difference between pre and post test scores		3.00	2.079	0.368	8.163	<0.000

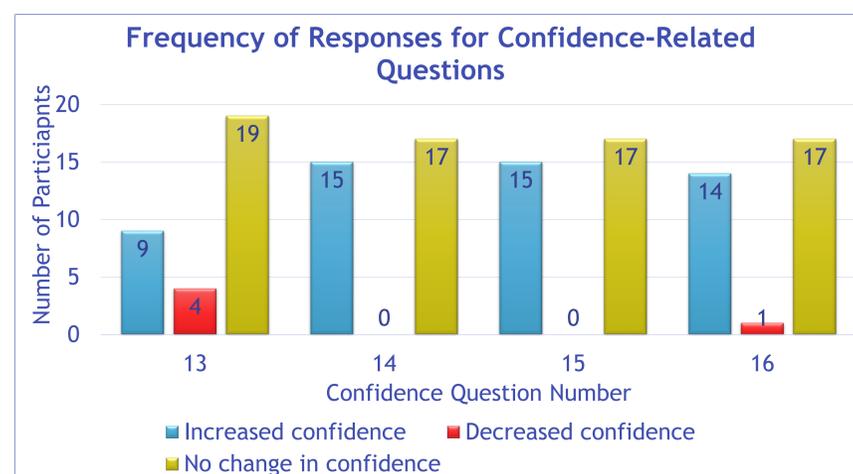
*used Paired-T Statistical Test on SPSS



Comparison between Overall Confidence Scores from Pre to Post

Group	N	Mean	Std. dev.	Std. Err.	T value	P-value
Pre-Test	32	11.47	2.079	0.367		
Post-Test	32	13.34	1.658	0.293		
Difference between pre and post test scores		1.875	2.211	0.391	4.798	<0.000

*used Paired-T Statistical Test on SPSS



DISCUSSION & LIMITATIONS

Discussion:

- The participants’ overall knowledge scores were statistically different from pre to post.
 - Suggests that the B-Con course was effective in increasing the participants’ knowledge about the importance of hemorrhage control and the methods to be used to prevent death.
- The participants’ overall confidence scores were statistically different from pre to post.
 - Suggests that the B-Con course improved the participants’ confidence levels with regards to applying the B-Con skills if a traumatic event occurred nearby to help save a life.
- Participants may have a general idea of the B-Con and the techniques to use to stop bleeding but there still needs to be further training.
 - 6 out of 12 knowledge-based questions were significantly different from pre to post.
- After B-Con course, participants did not improve confidence to actually take action to stop bleeding if a traumatic event occurred near them.

Limitations:

- Small sample size
- Population limited to security officers at TJU
 - Prior experience and other demographic information was not collected from the participants

Improvements:

- Have B-Con courses available in different career fields to improve the results generalizability.
- Include follow up evaluations after the B-Con course was taught (i.e. 1 month, 6 months, etc.) to assess if participants retained the information that was taught.

CORE COMPETENCIES

- Explains importance of evaluations for improving policies, programs, and services.
- Describes implications of policies, programs, and services
- Conveys data and information to professionals and the public
- Recognizes limitations of evidence
- Describes the way diversity may influence policies, programs, services, and the health of a community.
- Gathers information for evaluating policies, programs, and services
- Uses information technology in accessing, collecting, analyzing, using, maintaining, and disseminating data and information

ACKNOWLEDGEMENTS

- Dr. John McAna, PhD, MA
- Nora Kramer, RN,MS, CNRN, Trauma Injury Prevention and Outreach Coordinator
- Employees within the Thomas Jefferson University Campus Security department who took part in this study.