Apr 24th, 12:00 AM

Active Shooter Protocols: Perceptions, Preparedness, and Unintended Consequences

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Abstract

A national concern of active shootings has pushed schools to implement intense drills without considering unintended consequences. There is a lack of empirical research on effects of active shooter drills, with all findings focusing on immediate effects. This study investigated whether training completed in high school impacts current anxiety and preparedness of undergraduates. Participants completed a survey with questions about past and current training, followed by anxiety and preparedness measures. Two hierarchical regression analyses were used to predict anxiety and preparedness. This study expanded previous findings by demonstrating positive long-term effects for high school training.

Introduction

- Little research exploring the consequences of active shooter protocols, and existing research solely focuses on **short-term effects**, specifically on knowledge, anxiety, and preparedness.
- Some training can increase feelings of preparedness and knowledge (Zhe & Nickerson, 2007; Lui et. al, 2015), but some can cause stress and anxiety (Peterson et. al, 2015; Christakis, 2019).
- This study expanded findings by exploring long-term effects of training.
- **Hypothesis 1:** Active shooter protocols completed in high school impact current levels of anxiety and preparedness in college students.
- **Hypothesis 2:**Limited training at the university level may not provide students with enough updated information to apply to a university setting, therefore students have lower levels of knowledge about their current campus active shooter protocols than high school active shooter protocols.

Methods

Participants

- 364 undergraduate students
- 74 men, 281 women, 9 identified as other
- 111 African American, 204 Caucasian, 14 Hispanic/ Latino(a), 10 Asian, 1 Native Hawaiian/Pacific Islander, 22 multiracial, 2 identified as other

Materials

- Three knowledge variables
  1. Perceived knowledge (Wrench's Crisis Knowledge Index; Wrench, Fiore, & Charbonnette-Jordan, 2007)
  2. Protocol knowledge: 15 item checklist with actions divided into four categories (lockdown, evacuate, fight, and misconception protocols)
  3. Type of training received: 10 item checklist that divided protocol methods into three groups based on level of intensity: uninvolved (printed materials, online, email), involved (orientations, walk through), and real time (preannounced, unannounced, functional, full scale).
- Anxiety measurement: Speilberger Sate Trait Anxiety Inventory (1983)
- Preparedness measurement (Lui et al., 2015; Zhe & Nickerson, 2007)

Methods

- Participants completed an online survey and answered questions about their perceived knowledge of protocols, protocol actions, and training methods from high school
- Participants repeated the process with the next set of questions referring to their current university
- After both sets of questions, participants completed the anxiety and preparedness measures followed by demographic questions

Results

Three-stage analysis:

1. A bivariate correlation examined first hypothesis
2. Two hierarchal linear regression analyses further examined first hypothesis
3. Dependent t-test examined second hypothesis

Table 1. Correlations among Anxiety, Preparedness, Perceived Knowledge (PK), Protocol Actions (PA), and Training Methods (TM)

	High School		University	
	Anxiety	Preparedness	Anxiety	Preparedness
PK	**-.17****	**.16****	**-.34****	**.52****
Lockdown PA	-.01	.07	**-.15****	**.27****
Fight PA	-.05	.07	**-.15****	**.28****
Evacuate PA	**-.15****	**.21****	**-.16****	**.24****
Misconceptions PA	-.10	**.18****	-.06	**.22****
Uninvolved TM	-.00	.01	**-.12****	**.22****
Involved TM	-.07	.10	-.03	**.14****
Realtime TM	**-.12***	**.15****	-.08	**.28****

$^{*}p < .05$ $^{**}p < .01$

Table 2. Predicting Anxiety and Preparedness with High School Variables

	Anxiety		Preparedness	
	ΔR^2	β	ΔR^2	β
Step 1	**.05***		**.08****	
PK HS		**-.16****		**.14***
Uninvolved TM HS		.00		-.03
Involved TM HS		-.05		-.02
Realtime TM HS		-.07		.02
Lockdown PA HS		.08		-.01
Fight PA HS		.03		-.03
Evacuate PA HS		**-.13***		**.16****
Misconception PA HS		.01		.12

$^{*}p < .05$ $^{**}p < .01$

Table 3. Predicting Anxiety and Preparedness Adding University Variables

	Anxiety		Preparedness	
	ΔR^2	β	ΔR^2	β
Step 2	**.11****		**.26****	
PK HS		**-.12***		.09
Evacuate PA HS		-.12		**.15****
PK UNI		**-.32*****		**.47*****
Uninvolved TM UNI		.11		**-.18***
Involved TM UNI		.08		-.53
Realtime TM UNI		.12		.05
Lockdown PA UNI		-.14		**.21****
Fight PA UNI		-.12		**.14***
Evacuate PA UNI		-.01		-.12
Misconceptions PA UNI		.02		-.01
Total R^2	**.16****		**.34****	

$^{*}p < .05$ $^{**}p < .01$ $^{***}p < .001$

Hypothesis 1. At Step 1, the high school variables (perceived knowledge, training actions, and training type) accounted for 5% of the variance in anxiety, $R^2 = .05$, F (8, 355) = 2.39, $p = .02$, which was a significant effect. In the Step 2, the university variables significantly accounted for an additional 11% of the variance in anxiety, $\Delta R^2 = .11$, F (8, 347) = 5.88, $p < .001$.

At Step 1, the high school variables accounted for 8% of the variance in preparedness, $R^2 = .08$, F (8, 355) = 3.59, $p = .001$. In Step 2, the university variables accounted for an additional 26% of the variance, $\Delta R^2 = .26$, F (8, 347) = 17.32, $p < .001$, driven by several factors.

Hypothesis 2. As expected, students perceived **knowledge of current campus** active shooter protocols (M = 2.36, SD = .1.06) was **significantly lower** than students perceived knowledge of high school active shooter protocols (M = 2.81, SD = 1.17), t (363) = 5.83, $p < .001$.

Discussion

- This study expanded findings on the effects of active shooter training by demonstrating long-term effects for high school training
- Hypothesis 1 was **supported**: protocols and drills completed in high school impact current levels of anxiety and preparedness
- Evacuation protocols and perceived knowledge positively impact anxiety and preparedness of university students. Both contribute to lower anxiety and higher feelings of preparedness.
- Experiences at the university level have an additional, larger impact on anxiety and preparedness, which seems to overshadow the effects from high school
- While the limited training at this university still contributed to higher levels of preparedness, this could lead to a false sense of preparedness. Increasing perceived knowledge is seemingly easy, but an increase in perceived knowledge does not mean there is an increase in skills or application of that knowledge, potentially risking lives (Lui et al., 2015; Dorn, 2018)
- Hypothesis 2 was **supported**: students have lower levels of knowledge about current campus active shooter protocols
- Knowledge of high school protocols was low, but knowledge regarding university protocols was even lower.
- Although knowledge is very low, people still feel currently prepared for active shooter events but may not possess skills needed to mitigate loss of life if an actual response is required.
- With the increased push for more intense drills, the consequences of these drills should further be explored. This study demonstrated that there are long-term consequences that need to be investigated.

References

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