THE EFFECTS OF BLEED CONTROL TRAINING ON COLLEGE STUDENTS' SENSE OF SCHOOL CLIMATE

STRENGTHENING STUDENT COMMUNITY ON AN URBAN CAMPUS

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PROJECT SUMMARY

The purpose of this study was to explore if university students' participation in a **public bleed control training program** affects their perceptions of **school climate**. We focused on **Stop the Bleed (STB),** a popular program developed by the American College of Surgeons that has been adopted by several schools and universities in the United States. Consisting of a lecture and hands-on practice, STB trains individuals to be i*mmediate responders* in emergencies where there are traumatic bleed injuries—from traffic accidents to intentional acts of violence, like mass shootings. The goal of STB is to inform, educate, and empower civilians to help in a crisis by preventing hemorrhagic death. There is reason to suspect that trainings like STB may affect young adults' impressions of crime and community—two core elements of school climate. Today's college-aged adults report a strong fear of gun violence, such as school shootings (Abrams, 2023) and are also less likely to engage with their surrounding communities (Seemiller & Grace, 2017). For many, the sense of community at school was further eroded by the COVID-19 pandemic when they pivoted to online classes.

Given these clear developmental trends among Generation Z, we explored whether participating in STB affected their fear of crime on campus or *sense of university community.*

RESEARCH QUESTIONS

Because STB spotlights topics such as physical trauma, injuries, and blood, our first research question asked if participation in STB exacerbated students' fears of mass casualty incidents on campus (RQ1). We also examined if STB provokes feelings of self-efficacy and shared responsibility that then in turn affects students' psychological sense of community (PSOC) (RQ2).

METHOD & RESULTS

We conducted two studies with 174 students from **Wayne State University**, an urban university in Detroit, MI. We assessed their (a) fear of mass casualty incidents occurring on campus and (b) PSOC (Peterson et al., 2007) before and after their participation in STB using a repeated measures design at three points during the semester.

Results indicated that while fear of mass casualty incidents remained unchanged before and after STB, PSOC showed a statistically significant increase from baseline to the Time 1 post-STB assessment. Although PSOC declined slightly after taking STB, students' final PSOC levels reported at Time 2 were still significantly higher than they were at baseline.

Comparisons to an offset control group that underwent no bleed control training showed that those who participated in STB had *significantly higher PSOC levels* at the end of the semester.

LIMITATIONS

The positive—if less anticipated—influence of STB on students' PSOC was encouraging, but we recommend caution when applying our findings to further the case for bleed control education at present. Students in our study were on average 18 years old, making them less impressionable than younger (K-12) members of Generation Z who differ in their cognitive responses (Halpern-Felsher et al., 2016). Additionally, ours study was conducted on a campus that has not experienced a school shooting. Students that have experienced violence in the recent past would likely differ from those in our study. STB should be studied on these campuses, as research indicates that past experience with gun violence affects psychological fear of future gun violence (Kirkland et al., 2025; Mitchell et al., 2021).

Semester & Study Timeline

T0

Time 0: Students gave baseline assessments of fear of mass casualties and PSOC in Week 2

T1

Time 1: Students participated in STB training and provided fear of mass casualties and PSOC assessments in Week 3

T2

Time 2: Final assessments were completed 3 months after STB in Week 14

Overall, our study offers evidence that STB produced a small, but significant boost in students' PSOC. This suggests that participation in emergency preparedness trainings instilled in university students a deeper sense of connection to and responsibility for the wellbeing of others in their urban campus community.

Q1. Exploring the The Fear Factor

Does bleed control training raise or reduce college students' fears of public violence?

Because students who feel safe and supported at school are often more engaged and perform better academically, many schools and universities intentionally focus on improving **school climate,** defined as: (1) physical security of a campus; (2) safety regarding a school's policies on appropriate conduct and the absence of violence, aggression, and crime; (3) sense of community among members. Students who feel positively about their school's climate tend to report greater motivation to learn, improved socioemotional wellbeing, and reduced aggressive and violent behavior (Charlton et al., 2020).

To improve the campus security and promote feelings of safety, schools have focused on "common sense" measures such as installing metal detectors, hiring security guards, and offering emergency preparedness trainings such as active/mass shooter drills and bleed control training (Lenzi et al., 2017). One popular program being deployed on campuses nationwide is **Stop the Bleed (STB)** (Katzer et al., 2019; Kelley et al., 2022), which trains civilians how to "act as immediate responders to stop bleeding from all hazards, including active shooter and intentional mass casualty events" (Jacobs et al., 2016) through wound packing, pressure, and tourniquet application.

The Great Debate

Though nearly 4 million people have been certified through STB, there is an ongoing debate about the pros and cons of bleed control training for young adults. **Critics** argue that such programs carry the potential to stoke students' (already high) fears of a violent, mass casualty event occurring on campus, which is a particularly worrisome issue for Generation Z, born 1997 to 2012 (e.g, Miotto & Cogan, 2023). Indeed, results from the American Psychological Association's "Stress in America" survey found that fear of mass shootings in public areas (which included school shootings) was the top stressor reported by their sample of Generation Z respondents (Abrams, 2023).

On the other hand, **emergency medicine practitioners** recommend that STB should be incorporated into high school and college curricula nationwide as a way to boost young adults' feelings of efficacy and empowerment (Haider et al., 2017). Meta-analyses shows that those who completed STB training emerge more confident and comfortable with bleed control, making them more likely to help in an actual emergency (Humar et al., 2020; Tang et al., 2023). While promising, this trend has been studied and detected among the general lay public, and has yet to be specifically examined among younger populations. Interestingly, though this debate regarding the "fear factor" of STB for Generation Z continues among physicians, academics, policymakers, and parents, it has yet to be investigated formally.

Research Question 1: What is the relationship between students' participation in STB and their fear of mass casualty incidents occurring on campus?

Q2. Discovering a Sense of Community

Are there other (more positive) effects of bleed control training for college students?

Our second aim was to explore other less anticipated—but more positive—effects of bleed control training on students' evaluations of school climate. We focused specifically on students' **psychological sense of community (PSOC)**. Thapa et al. (2013) described the context of higher education and student life as "fundamentally relational," and highlighted safe, caring, and participatory relationships as "the optimal foundation for social, emotional, and academic learning" (p. 363). Studies have demonstrated strong links between students' PSOC and their academic performance, learning motivation, and graduation rates (Kirk & Lewis, 2015; Thapa et al., 2013).

How might STB affect PSOC?

In McMillan and Chavis's (1986) model, PSOC –consisting of *membership, influence, integration and need fulfillment,* and *shared emotional connection*—functions as both a **personal resource** that individuals draw on in times of stress, and a **shared responsibility** to contribute to the wellbeing of others in the community.

We predict that STB has the potential to influence both components of the PSOC model. As noted above, program evaluation studies have shown that those who complete STB report greater **willingness, preparedness, and confidence to help victims** during bleed emergencies (see Humar et al., 2025, Tong et al., 2025, Tang et al., 2023). As such outcomes are conceptually related to the resource and responsibility elements of the PSOC model, we anticipate that participation in STB will also be associated with college students' PSOC.

Research Question 2: Does participation in STB increase students' psychological sense of community??

What is STB?

- STB begins with a **lecture** to teach participants about their role as potential immediate responders.
- After learning how to assess and treat traumatic bleed injuries, participants **practice** wound pressure, packing, and tourniquet application.
- **Trainers** supervise participants until they are comfortable with new skills.

STOP THE BLEED® SAVE A LIFE

METHODS

We conducted two studies with students at Wayne State University in 2023. The samples were recruited from the introductory course on public speaking, which is a general education requirement for all students across campus. All procedures described below were approved by our university's institutional review board.

PROCEDURE

Time 0: Baseline. Students began the study by giving their informed consent and completing a short online pretest survey that collected their demographic information, and fear of mass casualty incidents on campus and PSOC at baseline. *"Mass casualty"* was defined for participants in the survey as: *"a major event in which emergency medical resources, equipment and first responder personnel are overwhelmed by the number and severity of injuries and casualties at the scene."*

Time 1: STB and post-test assessment. A week later, two certified STB instructors led the STB bleed control course for students during their regular class time. The instructors had extensive experience in healthcare (e.g., nursing, emergency medicine/paramedic) and collaboration within the surrounding urban community. Immediately following the STB course, students completed another online survey to measure fear of mass casualty incidents and PSOC.

Time 2: Final Assessment. As students' perceptions of school climate can shift with time (Wang & Degol, 2016), in Study 2, we added an additional assessment of students' fear and PSOC, 12 weeks after STB training. We also recruited an **offset control group** to compare against our STB training group.

STUDENT SAMPLES (n = 174)

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STUDY 1

- Age: 18-28(M = 19.38, SD = 2.39)
- Sex: 50 female, 33 male, 2 other
- Race: 37 White, 16 Black, 7 Hispanic/Latino, 12 Asian, 12 other

57

STUDY 2 (STB CONDITION)

- Age: 18-22 (M = 18.38, SD = 0.82)
- Sex: 38 female, 17 male, 2 other
- Race: 28 White, 10 Black, 5 Hispanic/Latino, 7 Asian, 7 other

33

STUDY 2 (CONTROL)

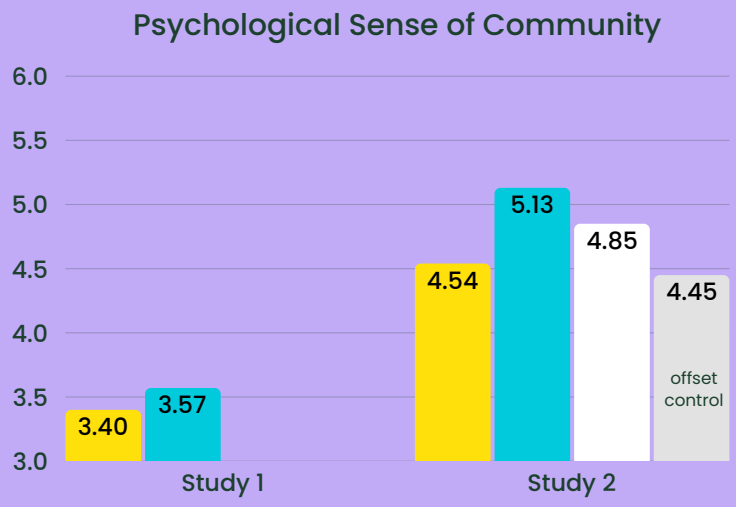
- Age: 18-23 (M = 18.50, SD = 1.16)
- Sex: 17 female, 16 male
- Race: 12 White, 15 Black, 2 Hispanic/Latino, 1 Asian, 3 other

MEASURES

Fear of mass casualty incidents on campus was measured using three items anchored with the stem wording: "The thought of being in a mass casualty incident on Wayne State's campus makes me feel…" and response options of 1 = "calm" to 7 = "anxious", 1 = "not at all afraid" to 7 = "afraid", 1 = "neutral" to 7 = "nervous".

Psychological sense of community was measured using Peterson et al.'s (2007) 8-item scale with Likert-type response options ranging from 1 = "strongly disagree" to 7 = "strongly agree". Item wording reflected the current context: "I feel like a member of this university;" "I feel connected to Wayne State University's community"

Summary of Results



Analysis

To examine differences in students' fear of mass casualty incidents (RQ1) and PSOC (RQ2) before and after STB, we used the SPSS MIXED process with the repeated command to account for data dependency within subjects (Wells, n.d.), alongside students' self-reported sex, race, and commuter vs. residential status.

QUESTION	RESULTS	OUTCOME
Q1. Does STB affect students' fear of mass casualty incidents on campus?	**Study 1:** F (1, 80.21) = 0.721, p = .40 **Study 2**: F (2, 102.18) = 1.84, p = .16.	• No significant results of STB on fear of mass casualties were detected in either study
Q2. Does STB affect students' psychological sense of community?	**Study 1: F (1, 77.65) = 9.29, p = .003** Time 0, Baseline: M = 3.40, SD = 0.06 Time 1, Post-STB: M = 3.57, SD = 0.07	• A modest, but statistically significant increase in PSOC was detected
	Study 2: F (2, 98.31) = 16.57, p < .001 Time 0, Baseline: M = 4.54, SD = 0.13 Time 1, Post-STB: M = 5.13, SD = 0.13 Time 2, 12 wks: M = 4.85, SD = 0.13	• PSOC significantly increased from baseline to Time 1, p <.001 (95% CI = 0.375, 0.827) before declining 12 weeks later at Time 2, p = .009 (95% CI = -0.50, -0.07). • Time 2 PSOC still remained significantly higher than baseline levels, p = .03 (95% CI = .03, .57).
H1. Students who participate in STB report higher levels of PSOC than students who receive no bleed control training.	**Study 2 (control vs. STB): t (88) = -1.86, p = .03, one-tailed.** Control group: M = 4.45, SD = 1.17 STB group: M = 4.85, SD = 0.94	• An independent t-test compared the control group (n = 33) against the STB treatment group (n = 57) on the PSOC outcomes measured at Time 2

BUILDING COMMUNITY WITHOUT FEAR

Our study tested the risk of STB to exacerbate university students' fear of mass casualty incidents that cause traumatic bleed injuries against its potential to instill feelings of personal agency and responsibility to help victims in a crisis. Among the students in this sample, **fear of potential mass casualty incidents on campus did not increase with participation in STB**. Notably, the average levels of fear of mass casualties reported by students in our studies at all timepoints was quite high and significantly above the 3.50 midpoint of the fear measure, $t(169) = 95.83$, $p < .001$. This may suggest a **ceiling effect** in which college students' fear of mass casualties on campus is already formed and fairly strong. Even though bleeding, physical injuries, and acts of public violence were discussed during STB, they seemed to have little-to-no effect on students' fears.

On the other hand, we did see a **significant boost in students' self-reported PSOC immediately after the STB training**. Though this feeling declined over time, **PSOC levels were still significantly higher 12 weeks after bleed control training than they were at baseline.** There could be other reasons for students' increased sense of community at the end of the semester (students have had more time to find and make connections, get involved in campus activities, etc.); however, comparisons of PSOC from the offset control group measured at the same point in the semester suggested that participation in STB did seem to have some influence.

LIMITATIONS

Though our results are encouraging, we recommend caution when applying our findings to further the case for bleed control education at present.

(1) Our samples of university students were on average 18 years old, and their new-found independence as *emerging adults* (Arnett, 2004) likely means that they are less impressionable than younger members of Generation Z who differ in their cognitive decision making processes and psychological response (Halpern-Felsher et al., 2016). **Extrapolating these results to younger student populations in elementary or high school settings should be done with care.**

(2) Additionally, though we would expect our results to generalize to other urban universities, ours was a **single site study.** Students that have experienced a mass casualty, an act of public violence, or an active shooter incident in the recent past would likely differ from those in the current sample who (luckily) have not had to live through that trauma. Research indicates that past experience with gun violence affects psychological fear of future gun violence, as well as preventative/protective behaviors—particularly among youth living urban and metropolitan areas (e.g., Kirkland et al., 2025; Mitchell et al., 2021). Thus future research could examine how the psychological effects of STB participation differ according to individuals' prior experiences and perceptions of personal risk.

TAKEAWAYS

Our results as a whole do indicate that college-aged students have an outsized fear of mass casualties on campus that was unaffected by participation in bleed control training. On the other hand, there was a small but significant increase in PSOC, suggesting that participation in STB instilled a deeper sense of connection to and responsibility for the wellbeing of others in their campus community.

Though this single study does not settle the ongoing debate about offering bleed control training to Generation Z's college student population, we hope our findings do inspire researchers, policymakers, and educators to pay attention to the **less anticipated, but potentially positive effects** that emergency preparedness programs can foster. Though the goal of teaching life-saving skills should remain at the forefront, our study suggests that it is worth exploring and harnessing the **unexpected benefits** of emergency public health campaigns for future use.

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