

ABSTRACT

Title of Thesis: NEW GENERATION: COLLEGE STUDENTS' IDENTITY AND CONCERN FOR MASS SHOOTING VICTIMIZATION

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The purpose of this study is to measure the concern of mass shooting victimization of college students and how their identity associates with their concern. In recent years, the number of mass shootings in the United States has increased, consequently leading to highly publicized content of mass shootings in the media (ElSherief et al. 2021). This study collected data using an online, anonymous survey administered through Qualtrics. Undergraduate students currently at a four-year university in the United States were eligible to complete the survey. Key questions of interest are about concern of victimization and identity. Participants were asked about their race, gender, political orientation, religion, community setting at university, class standing, Major, type of university, nationality, and sexuality. The research found that over a quarter of the students had concern for mass shooting victimization, where students who attended public schools had more concern over students who attended a private or liberal arts college. The results did not find any significant differences between political spectrum, class standing, age, or religion for concern or sensitivity to risk. The research found a positive, moderate correlation between the variables concern and sensitivity to risk. This research has implications for Universities to acknowledge and address students' concern for mass shooting victimization and steps that can be completed for research-based practices to support the students.

NEW GENERATION: COLLEGE STUDENTS' IDENTITY AND CONCERN FOR MASS
SHOOTING VICTIMIZATION

By

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Chapter 1: Introduction

In 2022, more than 600 individuals in the United States were killed in a mass shooting (Everytown 2023). In 2021, there was a record high number of mass shooting deaths since 1999, with 686 deaths total (Everytown 2023; Katsiyannis et al. 2023). Research continues to exemplify the significance of mass shootings in the United States. Despite this, criminologists have struggled to come to a conclusion of what constitutes a mass shooting. The main debate with the definition of mass shootings is the number of deaths that occur, as the FBI has not officially set a limit on the number of fatalities in the definition (Fox 2023; Soni and Tekin 2023). However, multiple scholars and databases such as James Alan Fox, The Gun Violence Archive, and The Violence Project have conducted vast research on mass shootings, defining the incidents as four or more individuals injured or killed by a firearm (Fox 2023). This research will focus on defining a mass shooting as a single incident in which four or more individuals are killed by a firearm (Soni and Tekin 2023).

Mass violence at educational institutions has become significant, impacting protocols and prevention strategies for students and faculty. Since the Virginia Tech mass shooting in 2007, the United States Department of Education found nearly 75% of college students on average enroll in their University's alert system due to the exposure of mass shooting potential (Kaminski et al. 2010; Rasmussen and Johnson 2008). The current generation of college students have experienced a much greater impact of mass violence in schools, as a great majority of them have been indirectly affected by mass violence through social media, school drills and protocols. Annually, 95% of public schools in the United States participate in some form of a lockdown. (Schildkraut 2022). Lockdown drills started to become a widespread practice for schools in response to the 1999 Columbine High School shooting which led to 15 dead and over 20 injured

(Schildkraut 2022). Following the impact of the Columbine and Virginia Tech school shootings, students have had lockdown drills implemented into their curriculum, as they are taught to be a protocol that becomes “muscle memory” through the procedural steps of the lockdown (Schildkraut 2022). This exposure through protocols can have negative consequences to the students’ well-being, specifically their perceptions of violence on their own school campus.

As previously stated, studies have mixed results regarding the impact of lockdown drills and protocols on students behavioral and mental health response, as well as perception of school safety. In a study conducted by ElSherief and colleagues (2021), students K-12 were surveyed before and after experiencing a school lockdown drill. The results indicated that after the drill, students had a significant increase in anxiety and stress (ElSherief et al. 2021). Comparatively, in research by Schildkraut (2022), results found students did not have an increase in anxiety after they had experienced a school drill, however, the study recognizes issues with drills that implement certain factors that do in fact increase anxiety, corresponding with ElSherief and colleagues (2021) in their findings. This research also finds that when students are exposed to drills in which poor techniques are used, such as actors, mock perpetrators, props, and other factors to make the drill more “real” lead to harmful consequences on the students perception of safety and anxiety of school gun violence (ElSherief et al. 2021; Schildkraut 2022). Moreover, with most public schools participating in lockdown drills, specifically in a post-Columbine era, there is evidence that this can negatively impact students' perceptions of school shootings and their safety in an unprecedented way. Implications of these findings indicate that when students have an increase in concern for school gun violence, it can lead to harming their mental health, ability to sleep and learn, as well as overall well-being (Aparna Soni and Erdal Tekin 2023; ElSherief et al. 2021).

Another area where research finds implications for increase in concern for gun violence victimization is identity. Within criminological research, perceptions of victimization typically vary based on the individual. Findings in criminological research indicate that individuals who identify as black, female, and elderly have higher perceptions of being victimized by crime in general (Lee and Hilinski 2006; Thomas and Hyman 1977). How an individual interprets their safety around them can be linked to their perception based on who they are, and particularly their identifying features such as race, gender, and age (Thomas and Hyman 1977). To understand how this nuanced era of college students are impacted by exposure to mass violence, identity is a significant factor that is considered. An individual's identity can be a catalyst to perceptions of safety, as well as their general sense of fear of victimization. Empirical evidence has shown that there are certain identities which tend to have higher levels of fear of victimization, these findings indicate that women, the elderly, and low SES individuals have higher levels of fear of victimization and crime (Lee and Hilinski 2006; Thomas and Hyman 1977). Gender differences are also prevalent, as women are typically more fearful of victimization than men (Jennings et al. 2007; Pain 2001; Reynolds et al. 2022). Identity differences are critical to understanding how experiences based on identity, such as a minority status, can impact an individual's fear of victimization. More specifically, how the intersectionality of various identities can lead to an increase or decrease in fear of victimization. As stated, men are less fearful of victimization as compared to women, however, black individuals are more likely to have fear of victimization. Furthermore, it is imperative to understand how identities, such as being both black and a man, intersect and impact their fear for victimization. Moreover, getting data from individuals with multiple minority statuses can help research better know the impact of intersectionality and

concern of victimization. With current conditions of mass violence, identity can be researched as a predictor to better understand the scope of fear of victimization for future implications.

The current research assists with filling the gap of this new era of college students and their concern of mass shooting victimization. The current research question is “Do college students’ concern of on campus mass shooting victimizations differ based on their identity?”. The research addressed the gaps in literature regarding an individual's concern of victimization as well as their perception of the probability of the victimization. This study also attempted to gain better insight by utilizing a more diverse sample of college students. The implications of this research can assist with future educational resources about mass shootings and how some populations of college students may be more at risk of victimization and concern. Additionally, this research is a start to understanding how this new generation of college students are indirectly exposed to mass shootings and add to the current literature.

Chapter 2: Literature Review

MASS SHOOTINGS IN THE UNITED STATES

Prevalence of College Mass Shootings

College campuses have a history of being a location of mass violence, specifically mass shootings. The 2007 Virginia Tech mass shooting made a lead in the severity of mass violence on college campuses, as Seung-Hui Cho murdered 32 students and faculty, as well as injuring 17 others (Kaminski et al. 2010). The Department of Education (DOE) has assessed the nationwide impact of the Virginia Tech shooting, describing the “ripple effect” that has affected U.S. college campuses (Rasmussen and Johnson 2008). The “Ripple Effect” essentially started a conversation for universities in the United States regarding how to combat and prevent mass shootings from taking place on their own campuses (Rasmussen and Johnson 2008). Today, most college campuses have various prevention measures which both the students and faculty are supposed to be made aware of, with the most typical slogan of “Run, Hide, Fight!” in response to an active shooter on campus (Fox 2023).

Mass shootings have been a topic of the media and criminology more recently in the past decade, as there has been a steady increase in mass shootings since the Virginia Tech tragedy (Kaminski et al. 2010). In a survey conducted by the American Psychological Association in 2019, researchers examined triggers of stress on American adults in the United States (American Psychological Association). In the results of this survey, it was found that the most prominent source of stress were mass shootings, with 7 in 10 adults stating that mass shootings are a serious source of stress (American Psychological Association). Despite the overarching stress that mass shootings have had on Americans, mass shootings on college campuses are a rare event (Fox

2023; Schildkraut, Elsass, and Stafford 2015). However, the media has distorted the prevalence, making the events seem much more frequent than the reality (Fox 2023; Schildkraut et al. 2015). The significance of this distorted media coverage is understanding how this affects students' perceptions of frequency, as well as their perceived risk for a shooting to occur.

Sensitivity to Risk

Concern of crime in a general sense can indicate perceptions of students' and their understanding of the likelihood they could be victimized. When studying the concern of crime victimization, a significant link to the perceptions relates to the sensitivity to risk. Sensitivity to risk is a concept which researchers found to predict the amount of concern of crime (Warr 1987). Moreover, an individual's concern of a crime, such as a mass shooting, is impacted by their subjective probability that the crime will happen (Warr 1987). Sensitivity to risk is an important concept to utilize when examining college students' concern of mass shooting victimization, as it distinguishes the association to connect the two fundamental notions to exemplify their similarities and differences (Warr 1987). There are mixed results based on comparing measures of sensitivity to risk in criminological research. Some research has indicated that sensitivity to risk, breaking it down into the two fundamentals of fear of crime and perceptions of the likelihood of the event, are not statistically significant and are not positively correlated (Maier and DePrince 2023). However, other studies share a general consensus that individuals who have greater concern for mass shootings, or other crime types in general, typically tend to have the impression that they have a higher likelihood of being victimized (Reyns, Fisher, and Sloan 2022; Schildkraut et al. 2015; Worthington, Hayes, and Reeves 2012). These differences in findings suggest that there may be other variables that affect sensitivity to risk which some studies may have overlooked or various limitations that could have contributed to these results.

Regarding factors that may impact sensitivity to risk of mass shootings, researchers have started to emphasize the emotional impact that University safety precautions and preparation drills have on their students (ElSherief et al. 2021; Schildkraut 2022). Despite the emphasis on universities to be prepared for active shooter situations in order to prevent and have a plan for mass shootings, the benefits of these drills and precautions have not always yielded the desired results that they are intended to have. When schools implement drills into their precautions, along with training videos of active shooter scenarios, surveys have indicated students become more fearful of being victimized by active shooters than before (Kaminski et al. 2010; Worthington et al. 2012). These results suggest that the sensitivity of risk for students may change regarding the amount of knowledge they have regarding their university policies, especially how they are presented. James Alan Fox, an expert researcher in mass shootings, described this as similar to reminding passengers on airplanes of plane crashes - this will heighten anxiety despite the incredibly rare likelihood of the event occurring (Fox 2023; Peterson et al. 2015). This denotes how college students' sensitivity to risk is an area of concern that is malleable, as there are various factors that can alter their perceptions and impact their concern of mass shooting victimizations.

COLLEGE STUDENTS' CONCERN OF VICTIMIZATION

In research of college students, there is significant data of fear of general crime and their perceptions of safety, as well as fear of being victimized in violent crime (Jennings, Gover, and Pudrzynska 2007; Maier and DePrince 2023; Miller, Hemenway, and Wechsler 2002). Research has examined college students and their perspective of mass shootings, firearms, and violence on their campuses. In a study conducted by Lewis et al. (2016), a survey was sent out to a

Midwestern university in the United States to gain insight into firearm opinions on college campuses in light of mass shootings and gun violence in recent times. The study concluded that 54% believed that military assault weapons need to be banned, as well as 73% of students wanting more security precautions for gun violence on their campus (Lewis et al. 2016). Within the college population, studies show consistency regarding the majority of the sample having a concern for gun violence (Lewis et al. 2016; May, Wilcox, and Roberts 2006; Reynolds et al. 2022). Despite over a decade in between these studies, each of the surveys testing highly related content with students' opinions on gun violence yield similar results (Lewis et al. 2016; May et al. 2006; Reynolds et al. 2022). However, there were limitations which could have affected the results in the studies by Lewis et al. (2016) and May et al. (2006). First, both studies were conducted at either a single midwestern or southern university. These findings suggest that the results could have been skewed due to various characteristics of the social identities of those who attend the school. Therefore, the student perspective of mass shootings and gun violence still needs further research done from a more diverse sample than these two studies.

Previous experiences are a significant aspect in researching college students and their fear of victimization. In a study by Maier and DePrince (2023), the results found that those who had experienced indirect victimization, or knew an individual who had been victimized, reported more fear of crime than those who did not know any victims. The situation in which college students experience crime or are around others who have witnessed crime affect their own fears (Lee and Hilinski 2006; Maier and DePrince 2023). The research indicates significant effects of exposure to crime and other victimization experiences contributing to fear of crime (Lee and Hilinski 2006; Maier and DePrince 2023). These findings can provide an explanation for indirect

exposure to crime may impact perceptions of safety, which in turn can lead to an increase in concern for victimization based on their indirect experiences.

Identity and Concern of Victimization

Within understanding the concern of victimization, it is imperative to integrate how identity can impact an individual's perception of safety and their concern of victimization. In terms of research regarding victimization, most studies include variables related to social identity. In the majority of this research for victimization studies, gender is a significant variable (Jennings et al. 2007; Pain 2001; Reyns et al. 2022). Gender has been one of the most researched parts of identity that have continuously produced similar results measuring concern of victimization, as it is a substantial predictor of perception of crime (Jennings et al. 2007; Pain 2001; Peterson et al. 2015; Reyns et al. 2022). On average, women typically report higher levels of concern of victimization when compared to men (Jennings et al. 2007; Pain 2001; Peterson et al. 2015; Reyns et al. 2022). Men, however, typically report lower levels of concern of victimization (Jennings et al. 2007; Pain 2001; Peterson et al. 2015; Reyns et al. 2022). There is limited data regarding the non-binary and transgender populations, as most studies simply focus on sex assigned at birth. More data must be collected to determine predictors of concern of victimization in order to understand gender differences as a whole.

Likewise, race is another significant predictor of concern of victimization. Various studies have concluded that racial and ethnic minority populations tend to have higher levels of fear of victimization than white populations (Fowler et al. 2015; Truman 2005). These findings remain true for college student minorities as well, as research has demonstrated that non-white college students report higher levels of fear of victimization compared to white college students (Boateng and Adjekum-Boateng 2017; Truman 2005). From a theoretical perspective, some

criminologists can explain the higher levels of fear of victimization for minority races can be associated with the fact they are more likely to live in disadvantaged neighborhoods and areas where exposure to crime may be heightened (Boateng and Adjekum-Boateng 2017). However, there are mixed arguments for these trends that have not yet been settled, as there could be various other variables which can impact an individual's fear of victimization, with race being one of the variables.

Other demographics can include age, social economic status, nationality, and geographic location within the United States. Identity is an intricate web which can impact an individual's likelihood of victimization, as well as their fear of victimization. Each piece of an individual's identity could work as a protective factor or risk factor for impacting their fear of victimization. Focusing on the current research, gun violence per state in the U.S. has varying rates, as states such as Alabama and Mississippi have significantly more deaths by gun violence than states such as Massachusetts or California, based on statistics from 2021 (Gramlich 2023). Additionally, the CDC reports the highest rates of gun violence deaths are reported to be between the ages of 15-34 years old and are Black, American Indian, Hispanic, or Alaskan Native (Anon 2023). Identity is significant to understanding gun violence victimizations, and fear of victimization in general. Therefore, identity is a necessary variable to analyze college students' concern for mass shooting victimizations.

GAPS IN PRIOR RESEARCH

Implications of Mass Shootings on Campuses

As of 2023, the majority of individuals who are currently undergraduate students have grown up learning about mass shootings through events such as Sandy Hook in Connecticut, Virginia Tech, Stoneman Douglas High School in Parkland, Florida, and Robb Elementary

School in Uvalde in Texas. Each of these events have been described as some of the most deadly school shootings in U.S. history, all of which most current undergraduates remember hearing about through media, word of mouth, or connections to the area and school (John Woodrow Cox et al. 2023). This generation of college students have been around in the wake of routine mass school shootings, exposing them to schools, similar to their own, that have experienced a mass shooting. In regards to this exposure, there has been an increase of media attention and publications of mass shootings. This generation has either directly or indirectly experienced the specific crime of a mass shooting, so it is critical to understand what the implications of mass shootings have on this population.

The effect of mass shootings on primary and secondary victims of mass shootings have been well-established in research, however, there are quite significant disparities in understanding the general implications of mass shootings on those who have not experienced one, nor know anyone who has. In a study by Soni and Tekin (2020), they examine the effects of mass shootings on a community and societal level, describing this as looking into the “spillover” effect that mass shootings have on community emotional and mental wellbeing. The results indicated that those exposed to a more violent mass shooting experience a longer and more severe decline in emotional well-being (Soni and Tekin 2023). With these findings, it can indicate how this generation of students could be experiencing similar impacts of this “spillover effect”, as mass shooting have been on the rise continuously impacting different parts of the country and multiple communities at a time (Aparna Soni and Erdal Tekin 2023; Katsiyannis et al. 2023). A similar study indicated that the large media coverage after mass shootings, such as Sandy Hook in 2012, created short-term psychological effects on individuals that were not directly affected by the violence (Cimolai, Schmitz, and Sood 2021). These perceptions of those

affected by the “spillover” effect could help integrate the concern of mass shooting victimizations that college students have, as they too are a part of community populations and indirectly exposed to shootings through the media (Soni and Tekin 2023; Cimolai et al. 2021; Lewis et al. 2016). Additionally, it is important to acknowledge the abundance of media coverage that happens in the current state of technology. With vast amounts of social media, television, and phone communication, this could be yet another factor that exposed this generation to mass shootings as they have experienced the rise of each of these forms of media.

Concern of Mass Shooting Victimization, College Students, and Identity

There have been dozens of mass shootings at college campuses in the past decades, with arguably the most prominent one being the 2007 Virginia Tech shooting. After the Virginia Tech shooting, numerous studies examined how college students were affected by this shooting; however, most of these studies utilized participants who were directly impacted by the shooting (Jaymi Elsass, Schildkraut, and Stafford 2016; Kaminski et al. 2010; Rasmussen and Johnson 2008). Additionally, research has also focused on mass shootings and fear of crime, but not specifically with college students (Soni and Tekin 2023; Cimolai et al. 2021; Fox 2023; Katsiyannis et al. 2023). Some research that does focus on college students and concern of victimization focuses more broadly on various crime types or gun violence, not mass shootings (Jennings et al. 2007; Lewis et al. 2016; May et al. 2006; Reynolds et al. 2022). Furthermore, though there has been research done in regards to mass shootings and college students, there has not been extensive research primarily focusing on average college students, with a sample from multiple different colleges, and their concern of mass shooting victimizations. This is critical to know as there is a statistically new era of college students who have experienced more school mass shootings than previous generations. For example, as of 2022 alone there were more mass

shootings in one year in the U.S. than all years combined since the 1999 tragedy at Columbine High School (John Woodrow Cox et al. 2023). Additionally, college students are a unique population of students who are concentrated on a campus with similar routines throughout the academic year. Classes run from Monday through Friday each week, with students walking around and having classes in buildings. Most campuses have easy access into the buildings and do not have security guards stopping anyone from entering. This creates an opportunity for offenders to seek out college campuses as a place where they have an opportunity to commit mass shootings (Cohen and Felson 1979; Schildkraut et al. 2019). Campuses are different institutions than grade schools; furthermore, research should recognize these differences to capture college students' concern for mass shooting victimizations moving forward.

Additionally, there is another gap which this literature review discussed, which is understanding the role that identity plays in concern of victimization. Literature has found significant support for the role that identity plays in fear of victimization on a general level for crime (Boateng and Adjekum-Boateng 2017; Jennings et al. 2007; Pain 2001; Peterson et al. 2015; Reynolds et al. 2022). As stated previously, literature suggests that fear of victimization based on identity stays consistent for college students as well (Boateng and Adjekum-Boateng 2017; Truman 2005). To specify mass shootings, identity may play a role in an individual's fear for victimization through their experiences within that identity. Intersectionality of identity may make an individual more vulnerable or exposed to previous victimization or acts of gun violence (S.J. Creek and Jennifer L. Dunn 2014). By understanding which populations among college students have significant concern of victimization, it can lead to more opportunities in ways universities can help alleviate these worries.

Chapter 3: Current Study

The current research assists with filling the gap of this new era of college students and their fear of mass shooting victimization. Current college students have been raised in a post-Columbine and Virginia Tech era, where routine mass shootings and drills have been highlighted in mass media and their education. College students have not been a significant population of interest in research of mass shootings, as well as how their identity can impact their concern of victimization. Moreover, this study addresses the current research question “Do college students’ concern of mass shooting victimizations differ based on their identity?”.

RQ1: Do college students’ have concerns about mass shooting victimization?

H1: The majority of students will be concerned or extremely concerned for mass shooting victimizations.

RQ2: Do college students’ amount of concern and sensitivity to risk differ based on identity?

H2: Identities will differ, specifically minorities will have more concern than their counterparts.

Chapter 4: Data and Methods

The goal of this study is to understand if college students are concerned with being victimized in a mass shooting on their college campus and how their identity associates with their concern. The study is anonymous and all information was kept confidential in the research. The study has approval from the University of Maryland Review Board (IRB) to ensure that all participant's information was kept confidential, as well to ensure that the study follows necessary ethical codes. The participants gave informed consent prior to starting the study, where they were briefed on the purpose of the study.

A self-report questionnaire was administered through an online Qualtrics survey. The sampling strategy to recruit participants is a two-pronged method through convenience sampling. The convenience sampling is the preferred method of recruitment due to the access to college students through social media, peers, friends, and platforms that are more easily accessible and convenient to gain more respondents. The survey link was sent out via email and text message to eligible participants of friends and peers of the researcher to give them the opportunity to take the survey. The survey was also sent into multiple on campus organizations through online messaging platforms (Geneva, Slack, Facebook, LinkedIn) at various universities. The survey was also posted on social media platforms such as Instagram and LinkedIn to reach more college students at different universities. After completion of the survey, participants were prompted to share the study with other participants with the goal to have a more diverse sample and larger participant pool. The data collection began on January 30th 2024 and ended on February 15, 2024.

SAMPLE

The population of interest of this study is college students. The students were undergraduate students at the university. To eliminate the risk of having age outliers or non-traditional students, the following measures were taken: this study excluded two-year associate's programs, community college students, or graduate students. To ensure this population, there was an age restriction, only including college undergraduate students 18-23 years old. The purpose of this is to be able to have a more specific analysis of the traditional college-aged students pursuing a Bachelor's degree. The current published literature's future directions focus on the need for a more diverse sample of college students from various colleges and universities. Thus, this study helps fill the gap of current research. Additionally, the population is considered in this study as a new generation of students who have grown up with a greater amount of routine mass shootings, prompting more exposure than previous generations. The study sample needed to represent a diverse population of college students, meaning various gender, race, ethnicity, religion, and other identities. Different geographic locations of participants is a gap in current research, making it a significant piece of this study, therefore participants vary in University location in the United States.

The sample consisted of 147 participants. Of the 147 who engaged with the survey, certain cases were dropped: 11 participants did not complete the majority of the survey; and 27 participants did not consent to the survey, excluding them from analysis. The surveys that were incomplete in nature were excluded from the data analysis and results. Due to these exclusions, a total of 109 participants were used for analysis. All participants were undergraduate students. The sample consisted of 80.7% (N=88) female, 15.6% (N=17) male, .9% (N=1) non-binary, and .9% (1) as another gender identity. Due to this lack of gender variation, statistical analysis by this

variable is limited. By age, 2 participants were 18 years old (1.8%), 12 were 19 years old (11%), 24 were 20 years old (22%), 44 were 21 years old (40.4%), 24 were 22 years old (22%), 2 were 23 years old (1.8%), and 1 participant classified as “Other” (.9%). For race, the vast majority of participants (N=97, 89%) classified as “White”, 1 participants classified as “Black or African American” (.9%), 2 participants classified as “American Indian or Alaskan Native”, 7 classified as “Asian” (6.4%), and 2 classified as “Other”. This data severely lacks variation in racial identity, therefore race as a variable could not be included in the analysis, which will be discussed in the limitations of this study. Similarly, nearly all participants’ universities were located on the East Coast of the United States. Participants' responses illustrated 37 (33.9%) were located “North East”, 60 (55%) “Mid-Atlantic”, 7 (6.4%) “South East”, 4 (3.7%) “MidWest”, and 1 (.9%) “South West”.

Most participants identified religiously as “Christian” (N=56, 51.4%), then “Agnostic” (N=20, 18.3%), “Atheist” (N=13, 11.9%), “Judaism” (N=10, 9.2%), “Other” (N=6, 5.5%), “Muslim” (N=2, 1.8%), and “Hindu” (N=2, 1.8%). Regarding political spectrum, 20 participants (18.3%) identified as “Liberal”, 42 participants (38.5) identified as “Moderately Liberal”, 26 participants (23.9%) identified as “Moderate”, 6 participants (5.5%) identified as “Moderately Conservative”, and 3 participants (2.8%) identified as “Conservative”. Most of the participants attend a Public University (N=50, 45.9%). However, almost the other half of participants, (N=41) attend a private or Liberal Arts University. In terms of class standing, 5 participants were Freshman, 13 were Sophomores, 36 were Juniors, 48 were Seniors, and 7 identified as “Other”. Lastly for demographics, the majority of participants identified themselves as “Straight” (N=91, 83.5%). 14 participants identified as part of the LGBTQ+ community. Due to the lack of

variation of sexual orientation in this sample, this variable cannot be used for statistical analysis as it would not be representative of a diverse population.

MEASUREMENT AND VARIABLES

Dependent Variables

Concern of Mass Shooting Victimization. Concern of victimization captures individual levels of distress about mass shooting victimization on their college campus. The participants were asked to state their level of concern to the following statement: *I am concerned I will be a victim of a mass shooting on my college campus.* Response categories range from 0 = Not concerned at all, to 4 = Extremely concerned.

Sensitivity to risk. Sensitivity to risk indicates the participants' subjective probability of a mass shooting occurring on their college campus. The participants were asked to state their level of sensitivity to risk to the following statement: *A mass shooting will occur on my college campus.* Response categories range from 0 = Not probable at all, to 4 = Extremely probable.

Independent Variables

The independent variables are *Identity Demographics*. The identity demographics in this study serves as the independent, or predictor, variables as they are analyzed to determine if they correlate with the dependent variables above. Participants were asked to answer the following demographics that best describes their identity.

Age indicates the age of the participant. Participants answered the following questions: "What is your age?" ("18 = 1, 19 = 2, 20 = 3, 21 = 4, 22 = 5, 23 = 6, Other = 7").

Race indicates the race that the participant most identified with. Participants answered the following question "What race do you most identify with?" ("White = 1, Black or African

American = 2, American Indian or Alaskan Native = 3, Asian = 4, Native Hawaiian or Pacific Islander = 5, Other = 6”).

Gender indicates the gender identity the participants most identified with. Participants answered “What gender do you most identify with?” (“Male = 1, Female = 2, Transgender Male = 3, Transgender Female = 4, Non-Binary or Third Gender = 5, Prefer not to say = 6”).

Political Orientation indicates where the participants would identify themselves on the political spectrum utilizing a sliding scale. The scale consisted of labels Liberal, Moderately Liberal, Moderate, Moderately Conservative, Conservative.

Religion indicates the religious identity of the participant. Participants answered the following question: “Which religion do you identify with?” (“Christianity = 1, Judaism = 2, Muslim = 3, Hindu = 4, Atheist = 5, Agnostic = 6, Other = 7”). *Religion* was recoded into two categories, “Christian” and “Non-Christian” due to the variation of the data and categorical level of measurement.

Region of University indicates the U.S. region that the participants’ university or college is located. The participants were asked the following question: “What region is your university or college located in?” (“North East = 1, Mid-Atlantic = 2, South East = 3, Midwest = 4, South West = 5, North West = 6, West = 7”). A labeled U.S. map with color coded regions is provided in the question.

Class Standing indicates the participants' classification of the year (in credits) they hold at their university or college. The participants were asked the following question: “What is your class standing? Please select ‘Other’ if you identify as a 5+ year student” (Freshman = 1, Sophomore = 2, Junior = 3, Senior = 4, Other = 5).

Major indicates the major the participant has declared. The participants were asked the following question: “What is your major? If you do not have a declared major, please select ‘undecided’.” The participants answered in a textbox.

Type of University indicates the type of university the participants attend. The participants were asked the following question: “What best describes the type of university you attend?” (Private = 1, Public = 2, Liberal Arts = 3, Other = 4). *Type of University* was recoded into new variables, “Public” and “Private”, categorizing Liberal Arts schools as private due to the variation of the data and categorical level of measurement.

Sexuality indicates the sexual orientation that the participant most identifies with. The participants were asked the following question: “What is your sexual orientation?” (Straight = 1, Gay/Lesbian = 2, Bisexual = 3, Asexual = 4, Pansexual = 5, Other = 6, Prefer not to say = 7).

Control Variables

Prior Gun Violence Victimization indicates whether the participant has been a victim of gun violence or experienced gun violence in their life. This variable controls for the possible effect of previous gun violence victimization, as literature indicates it may skew concern for future victimization. Participants were asked the following question: “Have you ever been a victim of gun violence?” (1 = Yes, 2 = No).

Prior Gun Violence Exposure indicates whether the participant has been exposed to gun violence in their life. This question asks if the participant has been exposed to gun violence, yet not a direct victim. The participants were asked the following statement: “Have you ever been exposed to gun violence?” (1 = Yes, 2 = No).

ANALYTIC METHOD

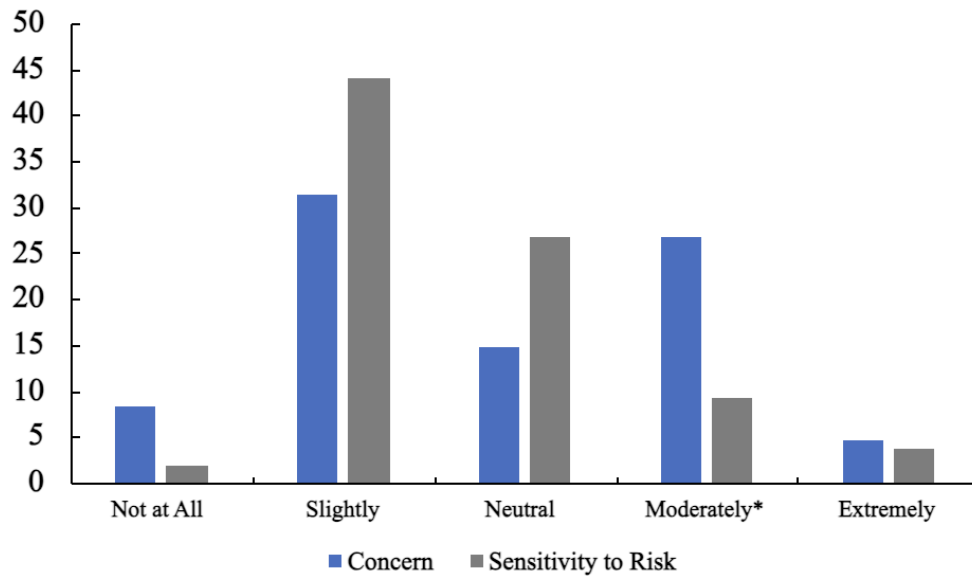
The results from the survey were analyzed using the statistical software SPSS. The first descriptive statistics were analyzed by calculating the mean and frequency of each variable. Due to limitations of variation and sample size of certain variables, the analytic method was conducted using two methods. The first analytic method was Spearman's Rho Correlation for the variables *class standing*, *age*, and *political orientation*. For the variables *Religion* and *Type of University*, each were computed into new variables to analyze using a Two Sample T-Test. This analytic method was used to test the correlational significance of the relationship between the variables of interest. The limitations of computing new variables and utilizing different statistical methods will be further discussed in the limitations section. The rest of the variables will not be included in the results due to lack of variability and/or the nature of the responses being inadequate for analyzation.

Chapter 5: Results

DESCRIPTIVE ANALYSIS

The first aspect of the research question of this study questioned if college students are concerned about mass shootings occurring on their college campuses. This was measured by two survey questions regarding their level of concern and their sensitivity to risk. The variable “Concern” yielded 93 valid responses, with 46.3% not concerned at all or slightly concerned of a mass shooting happening on their college campuses. However, 36.6% of the sample reported to be concerned or extremely concerned of a mass shooting occurring. The rest of the sample reported to be neutral. The mean response was 1.86, with the scale from 0 = *not concerned at all* to 4 = *extremely concerned*. Moreover, the general majority of the sample can be concluded as not reporting to be concerned. The variable “Sensitivity to Risk” 53.6% thought it was not probable at all or slightly probable. 15.1% reported to think a mass shooting was probable and extremely probable at their college campus. The mean response was 1.63, with the scale from 0 = *not probable at all* to 4 = *extremely probable*. This leads to the conclusion that the majority of the sample did not believe it was probable that a mass shooting could occur on their campus, corresponding with the “Concern” variable. For both variables, Concern and Sensitivity to Risk, the distribution of each response category were similar, as “Slightly Concerned” and “Slightly Probable” showed the majority of responses for both variables. The distribution of responses for both variables can be exhibited in the figure below. The tables for the descriptive statistics can be found in Appendix A and B.

Figure 1. Frequency Distribution of Concern and Sensitivity to Risk



NOTES: *Moderately denotes the response category “Concerned” percentage values in blue on the left and “Probable” in gray on the right.

TWO SAMPLE T-TEST ANALYSIS

Religion. The variable *religion* was recoded into two categories of “Christian” and “Non-Christian” due to the lack of variability in the data. An independent sample two tailed t-test was run to analyze *religion* and *concern*, as well as *religion* and *sensitivity to risk*. There was no statistically significant demonstrating differences of religion on concern, $t(85) = -.12, p = .91$. Similarly, there was no statistically significant effect of religion on sensitivity to risk, $t(85) = -.12, p = .22$. This indicates there is no statistically significant difference between the mean in the Christian and Non-Christian group for concern and sensitivity to risk.

Type of University. The variable *Type of University* was recoded into two categories as well. The categories were “Private” and “Public”, establishing that the majority of Liberal Arts schools are private. The independent sample t-test results revealed a significant difference between the means of the “Private” and “Public” categories for concern, $t(80) = -2.3, p = .024$. However, the results for sensitivity to risk were not statistically significant, $t(81) = -1.264, p = .21$. These results exhibit that the “Public” category had more concern than the “Private” category for their concern of mass shooting victimization on their campuses.

Table 1. Two Sample T-Test of Independent and Dependent Variables

Variable	Concern	Sensitivity to Risk
<i>Religion</i>	0.91	0.22
<i>Type of University</i>	.02*	0.21

* $p < .05$

SPEARMAN’S RANK CORRELATION COEFFICIENT ANALYSIS

Political Spectrum. There was nearly no correlation between the participant's political orientation and their concern for mass shooting victimization on their college campuses ($r = -.03, p = .81$). The negative nature of the correlation coefficient denotes that as one of the variables increases, the other decreases, yet not strong enough to be statistically significant. The results from the correlation analysis of political spectrum and sensitivity to risk indicate again a statistically

insignificant, positive correlation ($r = .14$, $p = .22$). This suggests that the nature of the relationship differs from concern, as this correlation is positive.

Class Standing. There was a statistically insignificant negative correlation between the participant's class standing and their concern for mass shooting victimization on their college campuses ($r = -.04$, $p = .7$). With the correlation coefficient being nearly zero, this means there was barely any correlation between these variables. The results from the correlation analysis of class standing and sensitivity to risk indicate a statistically insignificant, positive correlation ($r = .17$, $p = .1$).

Age. There was a statistically insignificant positive correlation between the participant's age and their concern for mass shooting victimization on their college campuses ($r = .03$ $p = .79$).

Similarly, there was also a statistically insignificant positive correlation between the participant's age and their sensitivity to risk for mass shooting victimization on their college campuses ($r = .14$.03 $p = .2$).

Table 2. Spearman's Rank Correlation Coefficient of Independent and Dependent Variables

Variable	Concern	Sensitivity to Risk
<i>Political Spectrum</i>	0.81	0.22
<i>Class Standing</i>	0.7	0.1
<i>Age</i>	0.79	0.2

* $p < .05$

Chapter 6: Discussion

DISCUSSION

The research presented ventured to understand the role identity may have in the concern college students' have for mass shootings. Based on the descriptive statistics, over a quarter of participants stated that they had concern for mass shooting victimization. This finding is important to highlight as it shows that there is concern for mass shooting victimization within the sample of college students. However, the results for sensitivity to risk exemplified that over half of the participants did not think a mass shooting was probable to happen on their campus. Furthermore, these results can shed light to show that concern may not indicate that the students' genuinely think a mass shooting could happen on their campus, differentiating these variables.

The survey results from the bivariate analysis indicate that there is little to no association between the identity characteristics of class standing, age, political orientation, and religion. These results were fairly predicted to not have a strong association due to the nature of the variables and lack of differences in individuals. This will be further discussed in the limitations section. This research attempted to see if there was any association between political orientation and concern, and in this case, it did not.

The results for *Type of University* revealed to be statistically significant. The results indicated that participants who attend public schools reported more concern than those who attend private schools. This difference could be impacted by the differences of public and private colleges in terms of student population, location of the school, size of the campus, overall safety of the schools, and all sorts of other factors. In the case of public schools, the student class sizes are typically significantly higher than private schools, along with larger campuses as well (Epps

2023). With a larger population and larger campus, there could be more access into the campus and possible threats to safety, which could be more contained at a smaller, private school with a more closed-off campus. However, the analysis showed that sensitivity to risk was insignificant and there were no differences in their subjective probability to a mass shooting occurring on their campus. This indicates that the type of university may impact the students' concern, yet not their sensitivity to risk, which is typically not the case based on previous research (Warr 1987). However, due to the small sample size, this significance should be further investigated.

This indicates that certain identity characteristics of college students may not impact their overall concern or sensitivity to risk for mass shooting victimization of their college campus. It is important to note that there has been very limited research on the variables that this study was able to analyze. Therefore, these results are difficult to compare to previous results, which will be discussed in the implications section.

LIMITATIONS

Sample Size and Variability

A significant limitation to this study was the sample size and lack of variability within the participants. The anticipated sample size of this study was 250 participants, yet due to difficulty recruiting and eliminating certain participants, the study only yielded 109 total participants eligible for data analysis. Within these 109 responses, some of the variables were analyzed with fewer participants as well. The lack of the sample size impacted the ability to be considered generalizable to the general college student population. Additionally, this led to issues with variability within the data. The data lacked diversity, specifically with gender, race, and sexual orientation. Approximately 80% of the participants were female, 89% of participants were white,

and 85% were straight. Moreover, this overwhelming lack of variability within these variables made it so there could not be any statistical analysis conducted, as it would not produce meaningful results for the study. This was a limitation as gender, sexuality, and race were three variables of high interest based on the amount of previous research that had demonstrated associations with concern of mass shootings.

Grouping Variables

A second limitation to the study was the grouping of variables to become dichotomous for a Two-Sample T-Test. Two variables, religion and university type, had to be recoded and grouped together in order to run statistical analyses. Over 51% of the participant's identified as Christian, leaving nearly the other half of participants to have other religious affiliations. In order to create more variability to run the analysis, the rest of the participants who were not identified as Christian were grouped together into a "Non-Christian" group in order to run a two tailed t-test. Additionally, the type of university was also recoded and placed into two groups, public and private. This is due to the fact that the majority of Liberal Arts colleges, the other category of the type of university variable, are also private (Nimesheim 2022). The recoding and grouping of these variables was not anticipated to be done, but was decided to be more beneficial than removing the variable all together. This was a limitation as recoding these variables to become dichotomous created assumptions based on how they were grouped together. For Religion, assuming the "Non-Christian" group as one took away the individuality of each religion. This is a limitation as the purpose of the study was to focus on individual differences in identity, and by grouping variables as such, it was not possible to look at each religion or type of school as individually as possible.

Despite these important limitations, this research helps to fill an important gap in the literature by garnering insight into college students' concern for mass shooting victimizations on their campus. This is particularly notable for the current generation of college students who have grown up with routine mass shootings in educational institutions. Future research should continue to understand how this exposure impacts youth perceptions and concerns to gain more knowledge and data for college students' concern for mass shooting victimizations on their campus. There is still limited data on this population of college students who have grown up with routine mass shootings in educational institutions. This population should be further researched to understand how this exposure could have affected them. Additionally, more research should be conducted in order to understand the role of identity and concern for mass shooting victimizations. Identity and concern for crime in general is fairly researched, yet the specifics of mass shootings is an area of interest that should be researched further. Individuals who have multiple minority statuses incorporated into their identity may have more fear of victimization due to inequalities they have experienced in regards to their minority status (Balfour 2013; S.J. Creek and Jennifer L. Dunn 2014). Moreover, it is imperative that identity is studied to determine if the impact of intersectionality stays consistent with fear of victimizations of mass shootings for this generation of college students. How an individual perceives violence and their concern for their own safety can be impacted by their identities and the intersectionality of these identities. More studies should be continued in this topic, especially due to the increasing amount of mass shootings each year (ElSherief et al. 2021).

Chapter 7: Implications and Future Directions

IMPLICATIONS

Implications of this research could help universities and schools develop better systems with preparing students for lockdowns, knowledge of mass shootings, and overall how to help students who may be more susceptible to greater concern. This study indicated there is a sizable amount of students who have concern for mass shooting victimization on their campus. As discussed in the literature review, having concern for gun violence can have negative impacts on mental health, feelings of safety, sleep, and learning (Aparna Soni and Erdal Tekin 2023; ElSherief et al. 2021). Concern for mass shooting victimization could have potentially similar consequences as it is a form of gun violence as well. Universities should acknowledge their students' concerns and address how they can alleviate it, or support them through it. This could be through specific security measures on campus, educational and sensitive training to avoid triggering negative emotions, and following the research to understand how preventative measures can be beneficial, rather than harmful. More informed ways of teaching what to do during a mass shooting could be a step forward with better strategies to support students. Additionally, gaining more information about identity differences, if there are any, and setting up policies with an informed way of thinking in terms of the sensitivity some students may have. Teaching students about mass shootings should be researched-based, which is currently not the case with a vast majority of schools (Schildkraut 2022). The implications of this research topic could be the start of understanding this generations' concerns and how they can be addressed in an appropriate manner.

FUTURE DIRECTIONS

In terms of future research, next than others, and that should be taken is conducting a similar study that can alleviate the limitations of this current study. The first being the necessity to have a larger sample size. In a larger sample size, the participants could have more diversity than this study. This would be specifically crucial for race, gender, and sexual orientation, as those were key variables of interest that were unable to be tested in this study due to lack of data. Additionally, gaining more participants from a more varied demographic in terms of location of the university. This could be important to analyze to see if the location of the university associates with concern, as gun laws and policies are different based state by state. From an analytic perspective, a larger sample size would also be beneficial for statistical analysis. The larger the sample size, the accuracy of the statistical analysis could be increased. Moreover, a larger and more diverse sample would be imperative to future research in this topic.

Another area of this topic in future research is understanding how exposure to gun violence may impact a student's concern. In this research, participants were asked if they had ever been exposed to gun violence. However, this question was not analyzed in this research as the interpretation of the question could be different based on the participants' definition of 'exposure'. For example, some participants could believe that they were exposed to gun violence because they received a University Alert Text about a crime with a gun or gun shots fired. On the other hand, another student could say they have not been exposed, yet received similar texts. This topic could be an interesting future direction to research as previous exposure or victimization may impact the amount of concern for a mass shooting. Having a better measure of 'exposure' could be one of the next steps for this topic in research to better understand what may impact a students' concern for mass shooting victimization.

Chapter 8: Conclusion

The purpose of this study was to analyze college students' concern for mass shooting victimizations on their college campus, and if aspects of their identity impacted their concern. Based on the results of this study, the results indicated that there are college students who are concerned about mass shooting victimizations on their campus, as well as a smaller percentage that believe it is probable a mass shooting could happen. The data did not yield statistically significant results regarding the identity variables, but this data should be replicated with a larger sample size for further analysis. Mass shootings have devastating effects on society, especially when taking place at an educational institution. It is important to consider these impacts and how students can be supported through research-based safety procedures and sensitivity training. Future research should focus on how identity can impact an individuals' concern and sensitivity to risk, as well as how previous exposure to gun violence could affect their mental well-being.

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Appendices

APPENDIX A.

	Frequency	Percent (%)
<i>Age</i>		
18	2	1.8
19	12	11
20	24	22
21	44	40.4
22	24	22
23	2	1.8
Other	1	0.9
<i>Gender</i>		
Male	17	15.9
Female	88	82.2
Transgender Male	1	0.9
Non-Binary or Third Gender	1	0.9
<i>Race</i>		
White	97	89
Black or African American	1	0.9
American Indian or Alaskan Native	2	1.8
Asian	7	6.4
Other	2	1.8
<i>Political Spectrum</i>		
Liberal (1)	20	20.6
Moderately Liberal (2)	42	43.3
Moderate (3)	26	26.8
Moderately Conservative (4)	6	6.2
Conservative (5)	3	3.1
<i>Religion</i>		
Christianity	56	51.4

Judaism	10	9.2
Muslim	2	1.8
Hindu	2	1.8
Atheist	13	11.9
Agnostic	20	18.3
Other	6	5.5
<i>University Region</i>		
North East	37	33.9
Mid-Atlantic	60	55
South East	7	6.4
MidWest	4	3.7
South West	1	0.9
<i>Class Standing</i>		
Freshman	5	4.6
Sophomore	13	11.9
Junior	36	33
Senior	48	44
Other	7	6.4
<i>University Type</i>		
Public	50	54.3
Private	23	25
Liberal Arts	18	19.6
Other	1	1.1
<i>Sexual Orientation</i>		
Straight	91	85.8
Gay/Lesbian	4	3.8
Bisexual	7	6.6
Asexual	2	1.9
Pansexual	1	0.9
Prefer not to say	1	0.9

APPENDIX B.

	Frequency	Percent (%)
<i>Concern</i>		
Not Concerned at All	9	8.3
Slightly Concerned	34	31.2
Neutral	16	14.7
Concerned	29	26.6
Extremely Concerned	5	4.6
<i>Sensitivity to Risk</i>		
Not Probable at All	2	1.8
Slightly Probable	48	44
Neutral	29	26.6
Probable	10	9.2
Extremely Probable	4	3.7

APPENDIX C. SURVEY

We are interested in understanding if college students are concerned of mass shootings occurring on their college campuses and if their identity impacts their concern. This survey will take no more than 5 minutes to complete. You may exit the survey at any time. By clicking the arrow you will proceed to the consent to participate page. [Consent page followed by participant consenting to survey]

Identity Demographic Questions:

Age

What is your age?

- 18

- 19
- 20
- 21
- 22
- 23

Race

What race do you most identify with?

- White
- Black or African American
- American Indian or Alaska Native
- Asian
- Native Hawaiian or Pacific Islander
- Other

Gender

What gender do you most identify with?

- Male
- Female
- Transgender Male
- Transgender Female
- Non-binary or Third Gender
- Prefer not to say

Political Orientation

Where do you place yourself on the political spectrum

Scale: liberal, moderately liberal, moderate, moderately conservative, conservative

Religion

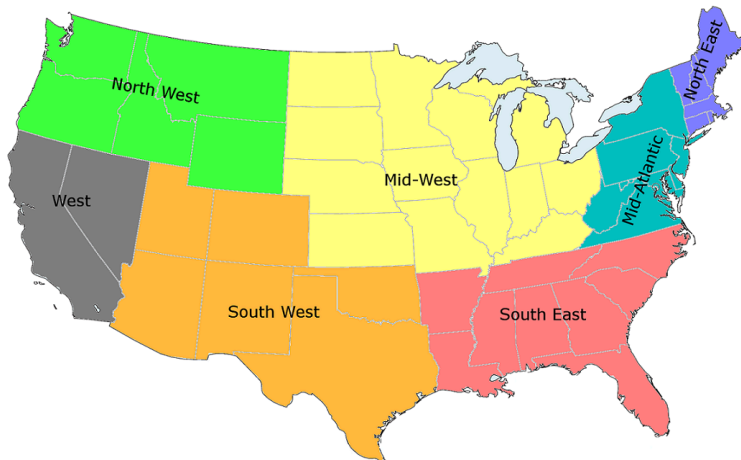
Which religion do you identify with?

- Christianity
- Judaism
- Muslim

- Hindu
- Atheist
- Agnostic
- Other

Region of University

What region is your university in?



- North East
- Mid-Atlantic
- South East
- MidWest
- South West
- North West
- West

Class Standing

What is your class standing? Please select 'other' if you identify as a 5+ year student

- Freshman
- Sophomore
- Junior

- Senior
- Other

Major

What is your major? If you do not have a declared major, please state "Undecided".

Textbox

Type of University

What best describes the type of university you attend?

- Private
- Public
- Liberal Arts
- Other

Sexuality

What is your sexual orientation?

- Straight
- Gay/Lesbian
- Bisexual
- Asexual
- Pansexual
- Other
- Prefer not to say

Concern of Mass Shooting Victimization Questions:

Rate the following statement provided in the survey on a five-point scale (0 = Not concerned at all and 4 = Extremely concerned): *I am concerned I will be a victim of a mass shooting on my college campus.*

Sensitivity to Risk

Rate the following statement provided in the survey on a five-point scale (0= Not probable at all and 4 = Extremely Probable): *A mass shooting will occur on my college campus.*

Control Questions:**Prior Gun Violence Victimization**

Have you ever been a victim of gun violence?

- Yes
- No

Exposure to Gun Violence

Have you ever been exposed to gun violence?

- Yes
- No

