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# An Examination of the Individual and Contextual Characteristics Associated with Active Shooter Events

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## Abstract

In recent years, the US has experienced a substantial number of mass shooting incidents. This type of shooting incident has been termed “active shooter event” and encompasses shootings that occur in school settings as well as public settings and workplace venues. Much of the recent published literature addressing active shooter events appears to focus on tactical issues, such as training for and responding to this type of incident. Very little research, however, has examined the individual and contextual characteristics associated with active shooter events. In the current study we examine a number of factors related to 88 active shooting events involving 92 perpetrators. Our findings indicate a history of psychological and behavioral issues reported in more than 50% of the active shooters studied. In addition, 60% of shooters had evidence of additional stressors beyond those associated with psychological and behavioral issues. These findings highlight the need to continue to explore potential risk factors associated with this form of violence.

*Keywords:* active shooter event, risk factors, mass violence

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## Overview

An active shooter event (ASE) is a mass shooting in which a person or persons, armed with firearms uses “deadly physical force on other persons and continues to do so while having unrestricted access to additional victims” (Curry & Hastings, 2001, p. 15). One of the earliest events that could qualify as an ASE was the Cologne School massacre, which occurred in Germany in 1964. In this incident, 42-year-old Walter Seifert attacked a Catholic school with a homemade flamethrower and killed 10 individuals (NYT, 1964). The University of Texas clock tower shooting in 1966 and the 1984 San Ysidro McDonald’s shooting would also qualify as early active shooting incidents (Barr, 2004; Gresko, 2004). More recent incidents include the mass shooting that occurred inside an Aurora, Colorado movie theater in July of 2012, and the Sandy Hook Elementary School shooting, which occurred only five months later in Newtown, Connecticut – 11 days before Christmas. In these two cases alone, the shooters took the lives of 38 individuals, including 21 children.

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This type of mass shooting event has necessitated a shift in how law-enforcement professionals conceptualize and implement training procedures and tactics. The rationale offered for this shift is a function of both the apparent random nature in which victims are chosen as well as the general unpredictability of the situation (<http://www.dhs.gov/active-shooter-preparedness>). In addition, this type of event has forced mental-health as well as law-enforcement professionals to begin thinking about the link between the individual characteristics of the assassins and their subsequent violent behavior.

In 1998 the United States Secret Service published a study that examined the behavior of those individuals that directed physical violence towards political figures (Fein & Vossekuil, 1998). In this study, the authors stated that one of the myths associated with conceptualizing an assassin is the notion that there is an assassin “profile.” To counter this myth, they emphasize the importance of examining both the individual and contextual characteristics associated with each incident. In fact the authors report, “American assassins and attackers have been both men and women of various ages, educational backgrounds, employment histories, and other demographic and background characteristics” (p. 12). With respect to the similarities among the assassins studied, the authors note that many had histories of depression, attempts at suicide, harassment, and weapon use (although no formal weapon training). In addition, the authors found that, while many assassins had sought mental health counseling prior to their attacks, mental illness was not a key factor in the assassination attempts. The authors’ findings are critical in terms of understanding the factors associated with assassins’ behavior and helped formulate the framework for the current study.

### **Prediction and Prevention**

The Columbine High School massacre in 1999 is recorded as the deadliest mass murder on a high school campus in the US. The level of violence and the overwhelming media coverage associated with this case led to a marked increase in the study of school shootings, with particular attention to the prediction and prevention of this type of mass violence. In 2000, the FBI released a study that examined characteristics of school shooters and subsequent recommendations for risk assessment (O’Toole, 2000). In this study, the author reported personality traits, family dynamics, school relationships, and social interaction as domains in which risk behaviors could be identified. In addition, the author identified over 40 risk factors that had the potential to be associated with school shooting. The personality traits found to be common among school shooters were depression, poor coping skills, psychopathic traits, and connection to violence entertainment. Within the family arena, poor parental management, lack of closeness, and lack of discipline were also associated with increased risk. School and social relationships of noted concern and connected to increased risk included: detachment from school and social life, attachment to like-minded peer groups (those that had a fascination with violence), and lack of healthy interests. While the report detailed the personality, social, family and school dynamics important in assessing risk, the author urged caution in interpreting these findings – emphasizing that the list should not be

used to predict the future violence of a student who has “not acted violently or threatened violence,” but rather as an assessment tool after a threat has occurred (p. 15).

Following O’Toole’s (2000) study, the Secret Service collaborated with the Department of Education to produce a report that examined 37 incidents of school-based attacks and 41 school shooters (Vossekuil, Fein, Reddy, Borum, & Modzeleski, 2002). The findings indicated, “There is no accurate or useful profile of students who engaged in targeted school violence”; in fact, “most attackers engaged in some behavior prior to the incident that caused others’ concern or indicated a need for help” (p. 31). Importantly, the notion that a school shooter was a “dangerous loner” was dispelled with the findings that their peers or teachers did not consider two-thirds of the shooters “loners.” Additionally, only one-third of the attackers was ever reported to be in trouble in school and while most had no history of violence, half reported an interest in violent media. In addition, over two-thirds of the shooters reported feeling as though he had been bullied in school. Finally, almost all the shooters had experienced a recent significant loss or failure prior to their attacks, with many also contemplating suicide.

Since the FBI and US Secret Service studies, there has been an increase in research on the topic of school shootings, most of which has highlighted prediction and prevention (Brown, Osterman & Barnes, 2009; Hong, Cho, & Lee, 2010; Kalish & Kimmel, 2010). These studies have focused on such issues as the presence of mental illness in the shooters, the influence of violent media on the shooters, and rural American cultural impact, to name a few. The most agreed-upon conclusion drawn by the researchers is the inability to identify predictive factors associated with this type of violence (see also Langman, 2009; O’Toole, 2000; Vossekuil, et al., 2002; Weisbrot, 2008). There is however, one characteristic that is consistent among school shooters – the majority are male (Leary, Kowalski, Smith, & Phillips, 2003). As a result of this observation, researchers have sought to link gender to the construct of school shooting, noting that men are more likely to act violently compared to women (see Burgess, Garbarino & Carlson, 2006; Coie & Dodge, 1998; Hong, et al., 2010; Kalish & Kimmel, 2010). In addition, bullying is often a cited characteristic present in school shooters. Burgess, et al., (2006) suggest that, because men are more likely to be subject to physical bullying compared to women, they are more likely to respond with violence. Thus, bullying has the potential to lead some victims to contemplate violent shootings as a response.

Unlike the bullying research, research addressing the relation between exposure to violent video games, as well as other violent media and school shootings, is less supportive (Ferguson, 2008; 2007). In fact, Ferguson noted that most violent video game literature has focused on youth from the general population, thus limiting the ability to generalize to those that commit school shootings. His rationale of course, is that school shooters represent a very specific population that may be particularly susceptible to violent media. In fact, O’Toole (2000) reported that having a fascination with violent media was one of the predictive factors of school shooting violence. Similarly, Huesmann, Moise-Titus, Podolski, and Eron (2003) found that youth that identified with aggressive characters in media were more likely to be aggressive over time. The

Secret Service study (2002) reported that only two-thirds of school shooters displayed interest in violent media (Vossekuil, et al., 2002). This appears to contrast the media perspective that violent video games were the dominant characteristic in a vast majority of school shooters (McGraw, 2007; Thompson, 2007). Finally, Sumiala and Tikka's (2011) qualitative analysis of the Internet posting habits of school shooters found that these habits ranged from a mild interest to a routine practice of creating violent media and posting to the Internet. Based on the discrepancies in the findings, research addressing the link between violent media and school shootings should continue in order to obtain a better understanding of the role of violent media and future violent behavior.

In response to the issue of gun violence, the APA (2013) released a report that focused on the multifarious nature of gun violence, noting the rare but frightening nature of mass-murder shooting events. Important facts from the Centers for Disease Control (CDC, 2013), highlighted in this report, included the prevalence of firearms in homicides (almost two-thirds of homicides were gun related) and in suicide (over half of all completed suicides were gun related). The report summarized gender and culture differences with firearm-related issues, as well: men are more likely to be the perpetrators of homicide and completed suicide (Bureau of Justice Statistics, 2008; CDC, 2013). Additionally, men are at least four times as likely to use a firearm in completing suicide (CDC, 2013). The report also noted characteristics of individuals who engaged in serious acts of aggression with firearms included the following: early-childhood aggression and defiance (Loeber, 1982); acceptance of criminal attitudes and behaviors by the subject's caregivers (Dodge, Greenberg, & Malone, 2008); exposure to trauma in family and community life, social isolation or disconnection, association with deviant peers, and exposure to influences suggesting that violence is an acceptable means of achieving recognition (Huesmann & Guerra, 1997). Although the report focused on the broad topic of gun violence, many of the findings and preventative suggestions could readily be applied to school shooters and active shooter events in general.

### **Tactical Assessment**

In the tactical arena, active shooting research is growing. Interestingly, one of the earliest references to the term "active shooter" appeared in the May 2001 issue of *Sheriff Magazine* (Curry & Hastings, 2001). Following this publication, one of the first tactical manuals to use the term active shooter was the 2006 report distributed by the Regional Organized Crime Information Center. In this report the authors linked school shootings (e.g., Columbine) to workplace mass shooting, sniper attacks, and other mass-homicides utilizing firearms (Johnson, 2006). Other organizations followed with assessments and recommendations for law-enforcement personnel. Often, these reports were strategic in nature and advised law-enforcement first responders in such areas as risk assessment of potential assailants, how to approach the scene, protection of potential victims, and elimination of the shooters (see Barchers, 2010; Blair & Martaindale, 2013; Federal Bureau of Investigation, 2009; U.S. Department of Homeland Security, 2013; 2008). One of the largest studies examining ASEs was conducted

by the New York City Police Department (NYPD, 2011). In this study, the authors examined over 300 active shooting incidents worldwide occurring over the last 50 years. Although the study shared the tactical nature of its predecessors, it also included important demographic information on the shooters and targets. Specifically, the authors found that almost 30% of active shooter events took place in schools, 26% took place in workplace settings, and 23% took place in open public places. Ninety-six percent of the shooters were male, with the largest age distribution recorded for the age groups 14-15 years old and 35-44 years old. Additionally, 40% of the active shooters attempted or completed suicide ending the event; an additional 46% were stopped with use of force against the shooter.

### **Current Study**

The purpose of the current study is to add to the literature that has begun to explore the individual and contextual characteristics associated with active shooters. By including those cases not previously assessed in traditional school shooting literature, we hope to identify traits that have yet to be explored. In addition, we examine whether and to what extent specific characteristics classified as either psychological, behavioral, or personal-social, are useful in identifying risk factors as well as predicting the magnitude of the event (as measured by the number of individuals wounded and killed).

## **Method**

### **Identifying Cases**

In selecting our pool of active shooter cases, we followed the NYPD (2011) and Department of Homeland Security (2008) criteria, choosing only those events that involved one or more perpetrators that were actively engaged in seeking out and killing victims in a public and/or a confined location (see Appendix). In our search, we utilized numerous sources of information including published materials (including scholarly research), news media and Internet search engines. Our initial pool of cases totaled  $N = 325$ , which included events from 1966 to 2013. The initial pool of cases was international in scope and included multiple events from different countries. In order to focus solely on criminal activity, we excluded any mass shooting event that primarily involved hostage taking, terrorist actions, and other warfare-type activities. In order to differentiate between active shooter events and gang-violence we excluded any event that was primarily or initially gang-related (shootings). To distinguish between active shooter events and other “crime-sprees,” we excluded cases in which other crimes were the initial focus (such as robberies). Additionally, we allowed a “cool-down” period between a *precursor* event (crime committed prior to the ASE but related to the ASE) and the main shooting event, however there could be no additional crimes following the main shooting rampage.

In order to fit the multiple victim nature of mass-murder crimes, we included only events in which there were three or more victims (killed or injured) in addition to the shooter. The cases we examined met the following resolution requirements: the shooter was

identified to the public (there were several events that were committed by unknown assailants); and the shooter ultimately died, was convicted, admitted guilt, or was found not guilty by reason of insanity. To exclude specific-target mass murder (mass-killings of family members, targeted assassination of multiple individuals) there needed to be an indiscriminate selection of at least one of the victims and the event needed to take place outside of a domestic residence. If a case reviewed did not have sufficient information to conduct a meaningful analysis, it was not included in any part of our study. In the end, of the 325 cases selected, 88 were found to meet the criteria for inclusion in our study<sup>1</sup>.

## Results

### Crime Details

***The magnitude of the event.*** The 88 active shooter cases we examined revealed several important findings regarding level of violence and resolution. To start, 17% involved a precursor victim or event. In these cases, the shooters killed or wounded individuals prior to the “main event,” often several hours before the main shooting spree. Our assessment of casualties did not include any of the precursor victims. With respect to the outcome variables utilized in regression analyses and operationally defined as “the magnitude of the event,” the average number of individuals wounded was  $N = 9$  ( $M = 9.67$ ,  $SD = 10.48$ ,  $Range = 0-70$ ) and the average number of individuals killed was  $N = 8$  ( $M = 8.75$ ,  $SD = 9.06$ ,  $Range = 0-69$ ). See Tables 1 and 2 for display of data for number killed and wounded.

Table 1

Distribution of Number Killed,  $N = 92$ .

Number Killed	Frequency	Percent
0 – 5	33	35.5
6 – 10	38	40.9
12 - 18	15	16.1
21 – 35	5	5.4
69	1	1.1

<sup>1</sup> Inter-rater agreement (95%) was reached on 88 of 93 cases chosen.

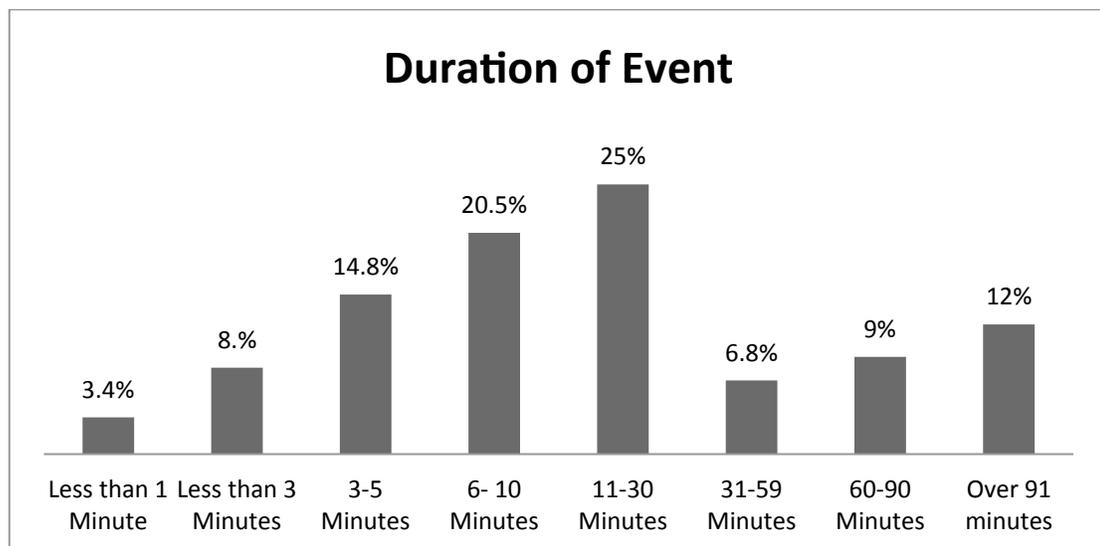
Table 2

Distribution of Number Wounded,  $N = 91$ .

Number Wounded	Frequency	Percent
0 – 5	45	49.5
6 – 10	15	16.1
11 – 15	12	12.9
18 – 24	13	14
25 – 33	5	5.4
70	1	1.1

**Duration of Event.** We assessed the duration of the shooting events based on reported start and end times. If conflicting reports of time were offered, we averaged the duration of the shooting event. If information allowed, we utilized an approximate timeframe in cases in which no specific record of time existed. If not, the time for that event was not included. The duration of the shooting events (in minutes) was recorded as follows: ( $M = 55.53$ ,  $SD = 118.65$ ,  $Range = 1-780$ ). The median duration was 12.50 minutes. Ten events were recorded to last between 120-780 minutes. See Figure 1 for depiction of duration of event in minutes.

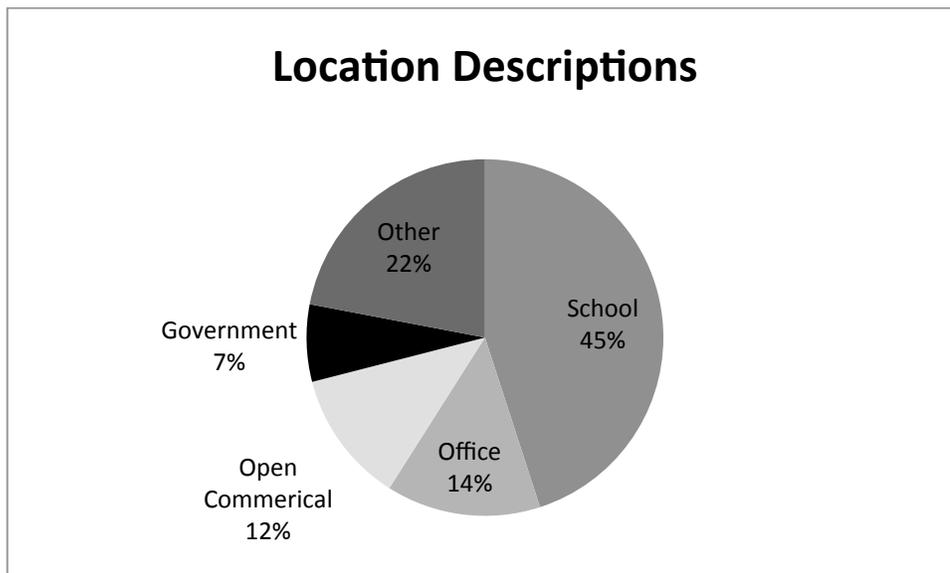
Figure 1

Duration of Event in Minutes,  $N = 88$ .

**Setting of Event.** In accordance with the New York City Police Department's (2011) study, we examined location of the event as a factor. For the purposes of the investigation, we recorded any shooting that took place on school property and was committed by students/community members as "school." Events that took place at a school location happened 45% of the time. We defined "office" as a shooting taking place in an office building generally closed to the public. Office locations accounted for 14% of the shooting events. We coded one shooting event that took place on a college campus as office. Our rationale was based on the evidence that indicated that a college employee upset about her recent denial of tenure committed the shooting. "Open Commercial" was defined as a location that was open to the public for business purposes, such as a mall or restaurant. These locations accounted for 12% of the shooting events. Government property, defined to include military installations, state offices, and post offices, accounted for 7% of the shooting events. The final category was defined as "other" and included open public property (parks, streets), religious organizations, and private property (outdoor campgrounds). These locations accounted for 22% of the shooting cases. Figure 2 denotes location descriptions for all recorded events.

*Figure 2*

Location Descriptions for all recorded events.

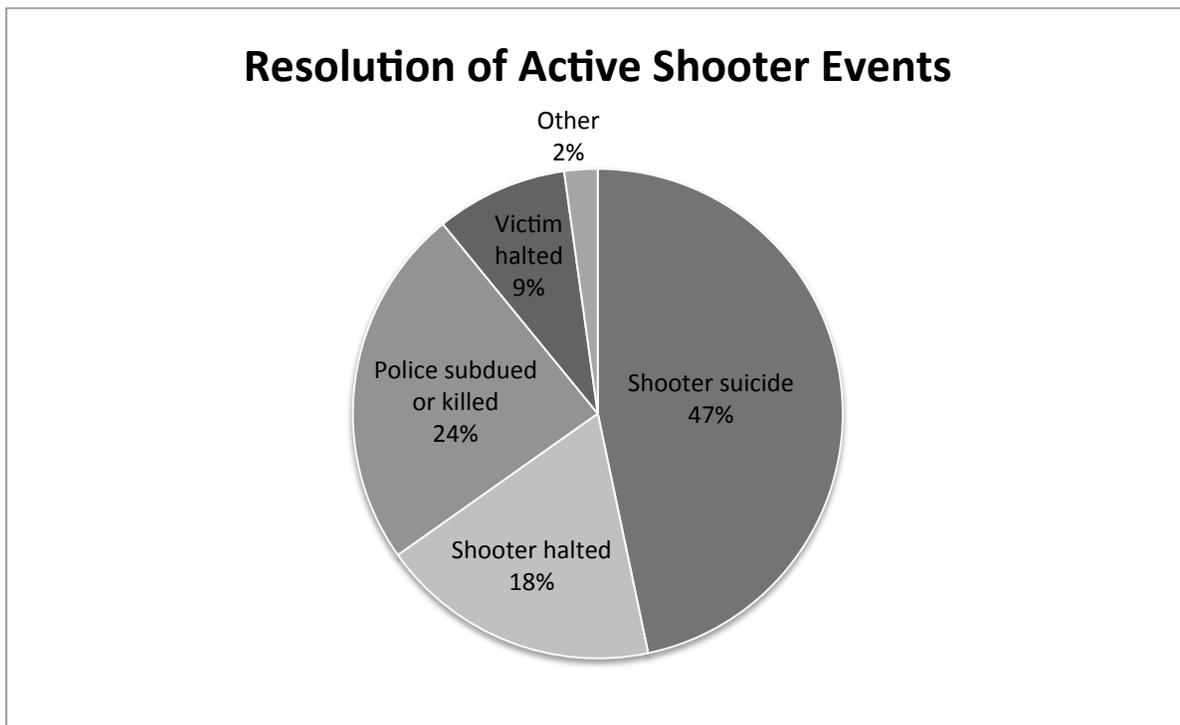


**Resolution of Event.** Figure 3 displays the resolution of the ASEs examined. To summarize, the shooters ended the events 65% of the time: completing suicide in 47% of the events and ceasing their rampage in the remaining eighteen percent. In 24% of the ASEs, police officials killed or subdued the shooters, ending the event. The victims were responsible for ending 9% of the shooting events, either by confronting or subduing the shooter (one case involved a victim killing the shooter). The use of weaponry in ASEs is also noteworthy. We coded only weapons used in the event, with the stipulation that the weapon was fired/used or attempted to be fired/used. Almost three-

quarters of the shooting events were committed with handguns ( $N = 68$ ; 74%). The use of bolt-action and semiautomatic rifles was the second most common weapon utilized (32%) and shotguns were third (24%). We defined assault rifles as rifles designed to be capable of fully automatic fire, regardless of modifications for civilian sale, which included civilian versions of military weapons and hunting rifles modified for urban combat. This type of weapon was utilized in less than 20% of shooting events. Submachine guns (including machine pistols and non-rifle automatic weapons) were used in only one case. Other forms of weaponry were utilized in 7% of cases. It is important to note that almost half (48%) of the shooters utilized multiple types of weapons. Over half of the shooters (58%) brought more ammunition than they utilized (in some cases hundreds of additional rounds) and/or additional weapons that were not utilized in the event.

Figure 3

Chart of Resolution of ASEs,  $N = 88$ .



### Shooter Details

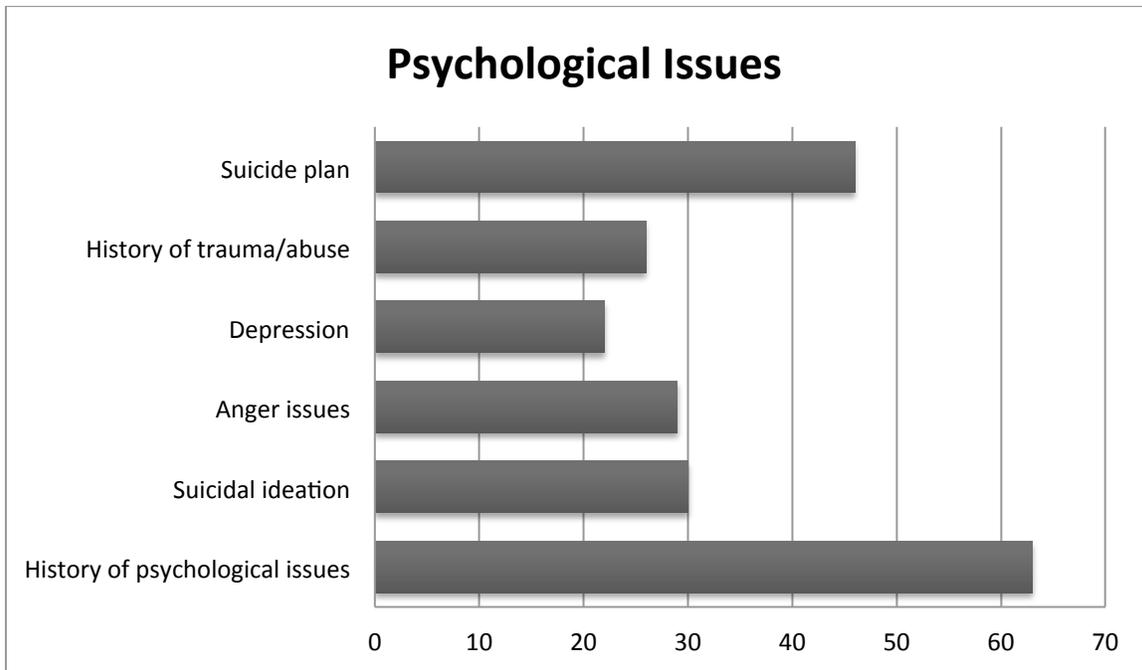
**Demographic information.** Eighty-eight active shooting incidents involving 92 shooters were examined. Of this number, 74% of shooters were Caucasian. No other ethnicity represented more than 8% of our pool (African-American 7%, Asian 7%, and Hispanic 6%). All but three were male ( $N = 89$ ), 80% single. With respect to age distribution: 22% were between 40-49 years of age, 17% between 19-24, 26% were between 12-18. In 96% of the cases, only one shooter participated in the shooting

event. Thirty-three percent reported some high school education, 23% high school diploma, and 19% some college. Seventy percent were not employed at the time of the event.

***Psychological Issues.*** Figure 4 reports the percentages associated with the psychological issues coded. Issues were recorded as those in which the shooter had a formal diagnosis prior to the events; i.e., diagnosed after the events (in the case of the shooter's survival); or after the shooter's death (using historical data). To summarize, a majority (63%) of the shooters had a history of psychological issues. Past suicidal ideation (30%), depression (22%), and anger (29%) were the most common issues in shooters' reported psychological histories. Trauma and abuse were present in 26% of the shooters' histories, with 18% having a history of multiple traumatic and/or abusive events. Substance-abuse issues were present in the reviewed cases, with 21% of shooters having some form of substance-abuse history. Of those with substance-abuse histories, 60% experienced issues with alcohol. Almost half (46%) were openly suicidal at the time of the event. It is important to note that not every shooter who completed suicide prior to the event completed suicide, nor was every shooter who completed suicide openly suicidal prior to the event. Seventy-seven percent of the shooters who completed suicide at the event had a suicide plan or had made suicidal statements prior to the event. The majority of shooters who ceased their rampages voluntarily or were stopped by police/victims did not have a suicide plan nor make suicidal statements.

*Figure 4*

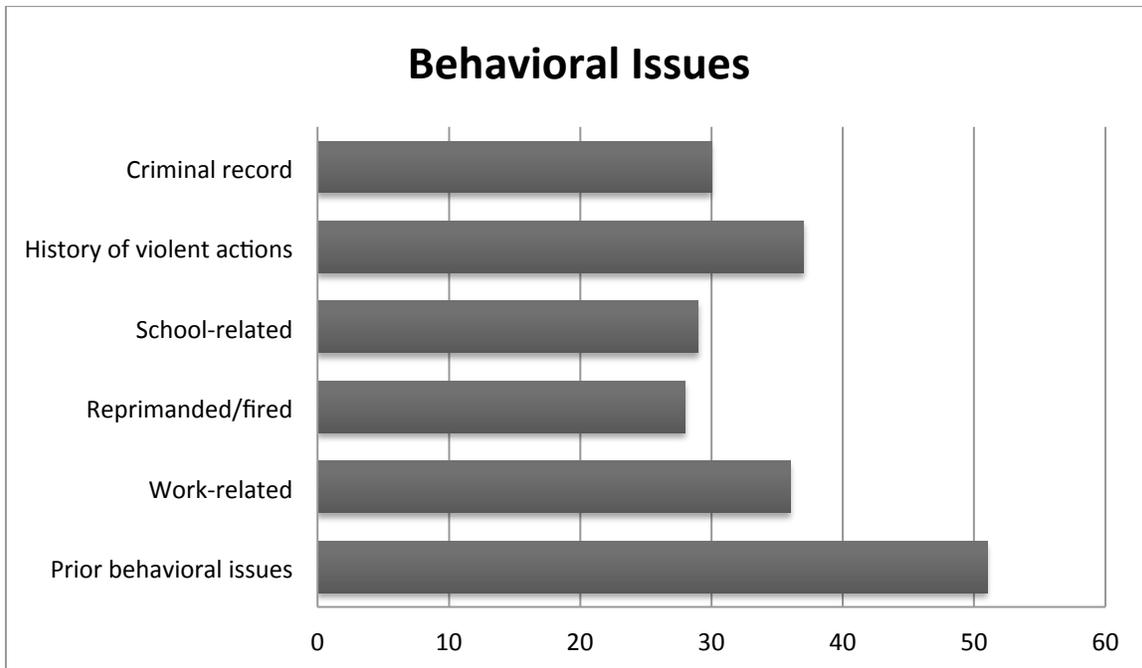
Percentage of psychological issues present in ASEs.



**Behavioral Issues.** As Figure 5 shows, behavioral issues were present in 51% of the shooters. In addition, 36% had a history of behavioral issues at work, 28% had been formally reprimanded or fired from a job. Twenty percent had been recently fired from a job prior to the shooting event. It is important to note that, of that group, 77% percent of the shooters who had been recently fired or disciplined at their workplace committed their shooting sprees at their former workplace. Twenty-nine percent of shooters had a history of disciplinary actions throughout their education, including shooters who were students at the time of the shooting events, as well as adult shooters outside of the school setting. A general history of past violent actions was present in 37% of the shooters in our population. Twenty-seven percent engaged in antisocial behaviors, and 30% had a criminal record. That being said, less than a quarter of the shooters had criminal convictions; in most cases, this meant that they were not brought to trial for criminal activity but instead had a history of altercations with the police.

*Figure 5*

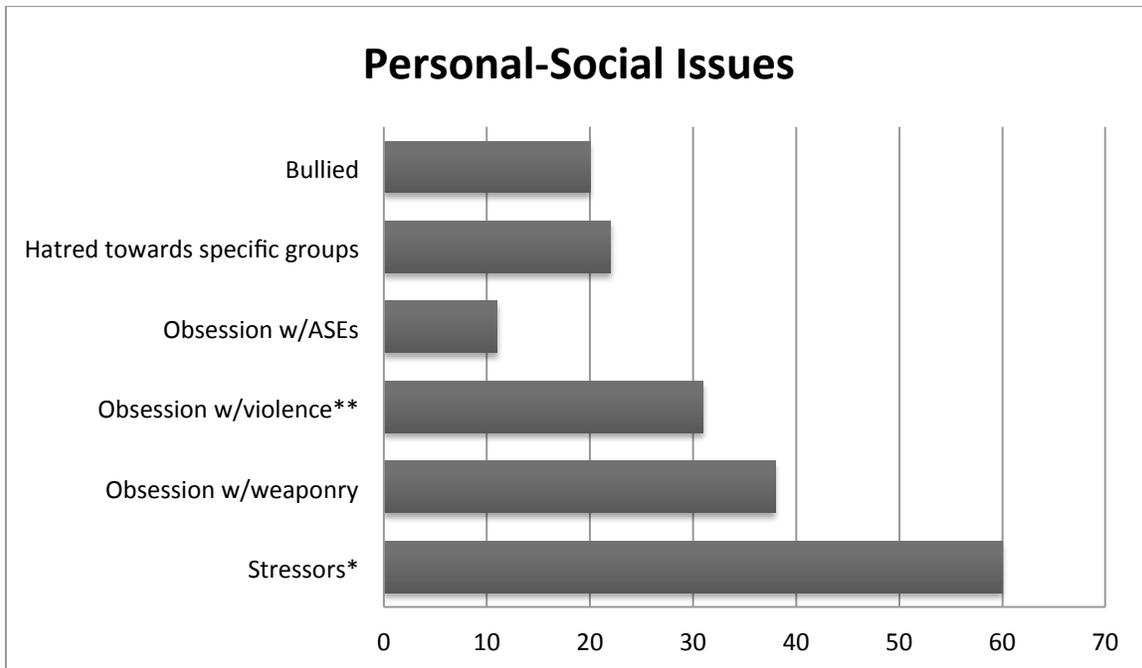
Percentage of behavioral issues present in ASEs.



**Personal-Social Issues.** The final group of factors reviewed included issues related to social environment and personal adaptation. Figure 6 displays the distribution of percentages across a number of personal-social issues assessed. Over half (60%) of the shooters had evidence of additional stressors beyond psychological or behavioral. This included an obsession with weaponry and shooting (38%), violence and violent media (31%), and with other active shooter events (11%). Twenty-two percent demonstrated maladaptive attitudes and embraced hatred towards a specific or general group, including identification with Nazism, racist ideology, or misogyny. Twenty percent reported bullying or were described as being bullied during their classroom or occupational experiences. Almost 15% reported or displayed evidence of social isolation, with 10% reporting that they were romantically rejected by women.

Figure 6

Percentage of personal-social issues present in ASEs.



Note: \*this value includes stressors in addition to psychological and behavioral.

Note: \*\*this value includes obsession with violent media as well as violence.

**Other.** In 38% of the cases, the shooter specifically warned or threatened other individuals about the pending event. Additionally, 9% of the shooters made casual reference of the use of firearms against people or specifically mentioned a famous active shooter event prior to their own crimes. A significant majority (84%) had easy access to firearms, which we coded as legal ownership of firearms or open access to the firearms of another person. In 38% percent of the cases, the shooters left suicide notes, written manifestos, or recorded media explaining their crimes and/or detailing their preparation.

### Regression Analyses

In order to examine whether and to what extent behavioral, psychological, and personal-social issues predicted the magnitude of the event, we conducted linear regression analyses. The factors chosen for our regression analyses are displayed in Figures 2-4. Results revealed no significant effects of behavioral, psychological, or personal-social issues on our outcome measures of the number of individuals wounded and killed ( $p$  values ranged from .24 - .97. The amount of variability explained by our outcome variables was weak as  $R^2$  ranged from .02 - .11). A multiple regression analysis was also conducted with selected demographic variables (ethnicity, age, and education) on

the same outcome variables. No significant effects were observed. Gender was not included due to the skewed nature of this factor (97% male).

## Discussion

In the current study, we explored the individual and contextual characteristics associated with active shooters. By including cases not assessed in traditional school shooting literature, we hoped to identify traits present in individuals responsible for shootings that not only occur in school settings, but also public settings and workplace venues. In addition to expanding the field of inquiry, the current study also sought to identify specific characteristics that might be identified as risk factors in predicting the magnitude of the event (as measured by the number of individuals wounded and killed).

Our results support the findings of the reports prepared by the US Secret Service and the FBI (Fein & Vossekuil, 1998; O'Toole, 2000; Vossekuil, et al., 2002). Though not a predictive factor, psychological distress was present in almost two-thirds of our population, with depression, anger issues, and past suicidal ideation present in 20-30% of the shooters. Additionally, over one-third of the active shooters assessed in our study were obsessed with violence and violent media, supporting the notion that although violent media does not cause shooting events, a fascination with violence may be a risk factor. Our findings highlight O'Toole's (2000) analysis that identifies school and social risk factors found among school shooters, particularly attachment to like-minded peer groups. In our sample, 22% demonstrated maladaptive attitudes, including identification with Nazism and racist ideologies. Also, it is important to note that the inclusion of non-school shooters in the current study may provide an explanation as to why our data did not mirror the *Safe School Initiative's* finding that over two-thirds of their school sample were victims of bullying.

In her initial study with the FBI, O'Toole (2000) established that *leakage* is an important factor in risk analysis, defining leakage as the "intentional or unintentional reveal[ing of] clues to feelings, thoughts fantasies, attitudes or intentions that may signal an impending violent act" (p. 16). Meloy and O'Toole (2011) highlighted leakage as a significant factor in school shooting events and called for more research to be conducted in this area. Our results supplement the authors' argument; specifically, 38% of the active shooters in our study demonstrated clear leakage by warning people of impending violence. The current results suggest that warning behaviors may be present in active shooters prior to attempting a shooting rampage and that this knowledge could aid in prevention of violence prior to loss of life. This finding also underscores the importance of monitoring potential risk factors on the part of mental-health, administrative, and security staff. In addition, it stresses the importance of professional training in the most appropriate intervention measures in order to prevent an escalation to violence.

Although the authors are not tactical response experts, we believe that our results support the growing tactical literature regarding active shooters. These events involve perpetrators that are committed to inflicting injury and death to unarmed people. In addi-

tion, the majority of active shooter events are of short duration (under 10 minutes), thus it is first responders, not advanced tactical response teams, who will be engaging the assailants. The current study supports the continued need for emergency response and/or evacuation plans in schools, hospitals, ash office buildings, as well as other open access/public venues.

### **Limitations and Future Research**

Although we are confident that we exercised diligence and care when identifying our pool of shooters, it is important to note the limitations associated with the use of archival data in general, and specifically in the current study. For example, although efforts were made to include scholarly articles and verified information as evidence, one limitation exists as function of the use of second-hand sources (e.g., Internet) as primary evidence. Additionally, there is a discrepancy in the amount of information available between cases occurring prior to and after Internet reporting and accessibility, with earlier events having less information compared to more recent events. As a result, this led to more early events removed from the study due to lack of information. There was also a discrepancy in information between events taking place in English-speaking countries and non-English speaking countries. Also, risk factors for offending are difficult to assess in general, due to the single-event nature of the shootings, as there is no re-offense. Additionally, the categorization we utilized for weaponry could be challenged as it is based mostly on media reports, which may not be completely accurate or may reflect factors such as after-market modification of firearms. It is also important to note that, in our data gathering, there were a number of cases of events that were foiled before any casualties occurred. There were also a number of cases in which two individuals were injured or killed. These cases were not included in our study. An argument could be made that had it not been for intervention these cases would have resulted in more severe consequences. Investigation into the traits of shooters may be an important topic of future research. Future research should also focus on solidifying the construct of the ASE as well as the categories used for identifying personal, behavioral, and social-contextual issues present in the active shooter.

### **Conclusion**

ASEs are by nature violent and destructive. In the cases explored in this study alone, dozens of people were killed and even more injured. Such brutality is particularly concerning when the frequency of these events is increasing dramatically. In a recently published tactical guide, the FBI (2014) demonstrated that the frequency of these events has doubled in the past six years, with an ASE occurring once a month in America. With a vicious level of violence, increasing frequency, and the legislative effects of these events, ASEs should be awarded substantial notice in social science research. Overall, our findings support the published reports that indicate that, although there is no accurate profile for the perpetrators of these events, there may be factors that, when clustered together, can increase the risk of violent shooting events. The FBI and Secret Service studies discourage automatic assumption of risk at the presence of a particular

group of factors, but rather encourage careful assessment and monitoring to lead to safe interventions prior to violent outburst. Our findings echo O'Toole's (2000) statement that "violence—whether in a school, home, workplace, or on the street is a complex issue with complex causes and consequences" (p. 33). We hope that our study raises awareness of active shooter events and increases interest for further study of this topic. Separating out those ASEs that occur in a school setting from other active shooting events explores only a fraction of the actual issue of mass-shooting violence. Finally, we believe that the characteristics portrayed in our pool of active shooters extend beyond those previously restricted to school shooting events. As a result, we would encourage future researchers to favor this type of examination over previously considered separate typologies.

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## References

- American Psychological Association. (2013). *Gun violence: Prediction, prevention, and policy*. Retrieved from <http://www.apa.org/pubs/info/reports/gun-violence-prevention.aspx>.
- Barr, A. (2004). Whitman, Charles Joseph. *Handbook of Texas Online*. Texas State Historical Association Retrieved from <http://www.tshaonline.org/handbook/online/articles/fwh42>
- Blair, J. P. & Martaindale, M. H. (2013). United states active shooter events from 2000 to 2010: Training and equipment implications. San Marcos TX: Texas State University.
- Barchers, W. (2010 April 19). Active shooter research [Web log post]. Retrieved from: <http://www.hardtactics.com/Blog/?p=17>
- Brown, R. P., Osterman, L. L., & Barnes, C. B. (2009). School violence and the culture of honor. *Psychological Science, 20*, 1400-1405.
- Bureau of Justice Statistics. (2008). *National Crime Victimization Survey: Criminal victimization in the United States, 2006 statistical tables*. (NCJ, 223436). Retrieved from <http://www.bjs.gov/content/pub/pdf/cvus06.pdf>
- Burgess, A. W., Carbarino, C., & Carlson, M. I. (2006). Pathological teasing and bullying turned deadly: Shooters and suicide. *Victims and Offenders, 1*, 1-14.
- Center for Disease Control and Prevention. (2013). Injury prevention & control: Data & Statistics (WISQARS). Retrieved from <http://www.cdc.gov/injury/wisqars/index.html>.
- Coie, J. D., & Dodge, K. A. (1998). Aggression and antisocial behavior. In W. Damon (Series Ed.) & N. Eisenberg (Vol. Ed.), *Handbook of child psychology: Vol. 3. Social emotional and personality development*, 5<sup>th</sup> ed., (pp. 779-862). New York: Wiley.
- Curry, T. & Hastings, J. (2001, May-June). Active shooter: The El Paso model. *Sheriff Magazine*, 1-3.
- Dodge, K. A., Greenberg, M. T., Malone, P. S., & Conduct Problems Prevention Research Group. (2008). Testing an idealized dynamic cascade model of the development of serious violence. *Child Development, 79*, 1907-1927.
- Federal Bureau of Investigation. (2009). *Active shooter: Manual of guidance*. Washington, D.C

- Federal Bureau of Investigation. (2014, January). *Active shooter events from 2000 to 2012*. FBI Law Enforcement Bulletin.
- Fein, R., Vossekuil, F. (1998). *Protective intelligence and threat assessment investigations: A guide for state and local law enforcement officials*. U.S. Secret Services. Washington, D.C.
- Ferguson, C. J. (2008). The school shooting/violent video game link: Causal relationship or moral panic? *Journal of Investigative Psychology and Offender Profiling*, 5, 25-37.
- Ferguson, C. J., (2007). Evidence for publication bias in video game effects literature: A meta-analytic review. *Aggression and Violent Behavior*, 12, 470-482.
- Gresko, J. (2004 July 18). 20 years later: San Ysidro massacre remembered. *North County Times*. Retrieved from [http://web.archive.org/web/20090831002428/http://www.nctimes.com/news/local/article\\_2ba4343e-7009-54ce-98df-79a23ff8d0d7.html](http://web.archive.org/web/20090831002428/http://www.nctimes.com/news/local/article_2ba4343e-7009-54ce-98df-79a23ff8d0d7.html)
- Hong, J. S., Cho, H., & Lee, A. S. (2010). Revisiting the Virginia Tech shootings: An ecological system analysis. *Journal of Loss and Trauma*, 15, 561-575.
- Huesmann, L. R., Moise-Titus, J., Podolski, C-L., & Eron, L. D. (2003). Longitudinal relations between children's exposure to TV violence and their aggressive and violent behavior in young adulthood: 1977-1992. *Developmental Psychology*, 39, 201-221.
- Huesmann, L. R., & Guerra, N. G. (1997). Children's normative beliefs about aggression and aggressive behavior. *Journal of Personality and Social Psychology*, 72, 408-419.
- Johnson, B. (2006). *Active shooter: Protecting the lives of innocents in shooting situations*. Regional Organized Crime Information Center (ROCIC). Retrieved from: <http://www.orgsites.com/va/asis151/ROCICSpecialResearchReportActiveShooter.pdf>
- Kalish, R., & Kimmel, M. (2010). Suicide by mass murder: Masculinity, aggrieved entitlement, and rampage school shootings. *Health Sociology Review*, 19, 451-464.
- Langman, P. (2009). *Why kids kill. Inside the minds of school shooters*. St. Martin's Press: New York, New York.

- Leary, M. R., Kowalski, R. M., Smith, L., & Phillips, S. (2003). Teasing, rejection, and violence: Case studies of school shootings. *Aggressive Behavior, 29*, 202-214.
- Loeber, R., (1982). The stability of antisocial and delinquent child behavior: A review. *Child Development, 53*, 1431-1446.
- Meloy, J. R. & O'Toole, M. E. (2011). The concept of leakage in threat assessment. *Behavioral Science and the Law, 29*, 513-527.
- McGraw, P. (2007). Virginia Tech massacre: Interview with Larry King Live. Retrieved from <http://transcripts.cnn.com/TRANSCRIPTS/0704/16/lkl.01.html>.
- New York City Police Department (2011). Active shooter: Recommendations and analysis for risk mitigation. New York: New York Police Department.
- New York Times (1964, June 11). *Maniac sprays fire on Cologne pupils*. Retrieved from [http://www.nytimes.com/1964/06/12/maniac-sprays-fire-on-cologne-pupils.html?\\_r=0](http://www.nytimes.com/1964/06/12/maniac-sprays-fire-on-cologne-pupils.html?_r=0)
- O'Toole, M. E. (2000). *The school shooter: A threat assessment perspective*. Quantico, VA: National Center for the Analysis of Violent Crime, Federal Bureau of Investigation.
- Sumiala, J. & Tikka, M. (2011). Imagining globalized fears: school shooting videos and circulation of violence on YouTube. *Social Anthropology, 19*, 254-267.
- Thompson, J. (2007). *Massacre at Virginia Tech: Interview with MSNBC*. Retrieved from <http://www.msnbc.msn.com/id/18220228/>
- U.S. Department of Homeland Security. (2013). Active shooter: What can you do? Retrieved from <http://training.fema.gov/EMIWeb/IS/courseOverview.aspx?code=is-907>.
- U.S. Department of Homeland Security. (2008). Active shooter: How to respond. Retrieved from [http://www.dhs.gov/xlibrary/assets/active\\_shooter\\_booklet.pdf](http://www.dhs.gov/xlibrary/assets/active_shooter_booklet.pdf)
- Vossekuil, B., Fein, R. A., Reddy, M., Borum, R., & Modzeleski, W. (2002). *The final report and findings of the Safe School Initiative: Implications for the prevention of school attacks in the United States*. Washington, DC: U.S. Secret Service and U.S. Department of Education.
- Weisbrot, D. M. (2008). Prelude to a school shooting? Assessing threatening behaviors in childhood and adolescence. *Journal of the American Academy of Child and Adolescent Psychiatry, 47*, 847-852.

## Appendix

Inclusion criteria for cases used in current study:

- ☐ 1965 or later
- ☐ 3 or more victims killed or wounded
- ☐ At least 1 indiscriminate victim
- ☐ Event took place outside of domestic residence
- ☐ Perpetrator captured or killed.
- ☐ If perpetrator captured, court case has been resolved
- ☐ No other crimes committed following the active shooting event
- ☐ Not military-based
- ☐ Not primary hostage taking
- ☐ Not organized terrorist activity
- ☐ Not gang-related