School shootings: A Review of the Characteristics and the Psychopathology of the Perpetrators

Daskalopoulou Eleni1, Igoumenou Artemis2 and Alevizopoulos Giorgos1*

1Psychiatric Clinic, Agioi Anargyroi Hospital, National and Kapodistrian University of Athens, Greece
2Barnet Enfield and Haringey Mental Health NHS Trust, Greece

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*Corresponding author: Alevizopoulos Giorgos, Psychiatric Clinic, Agioi Anargyroi Hospital, National and Kapodistrian University of Athens, Greece, Tel: ; Email: giorgosalevzopoulos@gmail.com

Introduction

In 1997 shootings in schools were recognized as a social problem, especially after the Columbine shootings in 1999 [1]. From 2001 to 2006 their publicity has been reduced, something that it is hypothesized to have changed after the Virginia Tech shootings in 2007 [2]. These attacks have been described as an “epidemic”, since six incidents happened in a small period of time, in the years 1997 to 1998 [3]. Criminologists considered these shootings as the new type of youth violence [4]. Statistically offenders younger than 18 years old commit 10.9% of the total homicides and 9.5% of the multiple homicides [5]. Despite these small percentages the mean offender age has dropped. As the FBI points out, since mass murder is a rare phenomenon even few incidents can influence the average age [6]. Schools are the forth most likely location for a mass murder to happen (9.7%) [6]. School-associated homicides represent less than 1% of the total homicides [7-9] despite the fact that the homicides with multiple victims have risen from 0% in 1992 to 42% in 1999 [7].

Types of school shootings

Muschert [2] concludes that there are five types of school shootings. Government shootings are attacks committed by military or police in order to suppress student protests. School-related mass murders are usually perpetrated by adults that are non-members of the school. In terrorists attacks the perpetrators have political or ideological motives. In the last two categories they choose schools as their symbolic significance. Fox et al described school shooters as “homegrown terrorists” [4]. Their attacks have some of the characteristics of terrorism, such as premeditation and fear. Some examples of this are the perpetrators of the Columbine shootings, Eric Harris and Dylan Klebold, whose journals contain plans of a hijacked plane crashing in the New York City. Motive in targeted shootings is the revenge of a specific person for a specific injustice, real or not [2]. The type that draws most of the attention is rampage shootings. Newman defines them as attacks perpetrated by members or former members of schools, in front of an audience. They have multiple victims, chosen either randomly or for symbolic reasons. In this type of attack what seems to be important for the shooter is the revenge of the school as an organization and not just specific members of it [3].

A type of offender that is proposed in rampage shootings is the “classroom avenger” [2]. In this case, the motive is the revenge of peers or parents that humiliated the offender [10]. The FBI classified school shootings according to their motives:

i. shootings in order to settle personal disputes or to get revenge,
ii. gang-related shootings,
iii. shootings at schools with no clear motive and
iv. shootings with random victims in order to express strong feelings and send a message to society.

Necessary criteria in the last category were the multiple shots fired, resulting in death or injury, the association of
victims and suspects with the school and the random selection of some of the victims [6]. With regard to the motives, the Secret Services in their research in 37 incidents support that 61% of the shooters were searching for revenge, 34% were trying to solve a problem, 27% wanted to commit suicide and 24% were looking for recognition [11].

**Characteristics**

School shooters seem to share some common features [12]. The majority were Caucasian, adolescent boys. They came from middle-class families with no apparent financial difficulties. Most of these shootings were perpetrated in rural or suburban communities. This was surprising since these areas were supposed to have escaped from the “epidemic” of violence in inner cities. The National Research Council studied “incidents of lethal school violence in urban, suburban and rural schools” and found that in the cases of suburban or rural shootings, neither causes nor targets were specific and the “targets” did not know they had a dispute with the perpetrator [13]. Shooters were considered outcasts and “weird” but not all of them were “loners” [12]. Their peer groups shared analogous interests in violence, making even harder the “reality check” on behalf of the perpetrator [14]. They showed interest in violent themes through movies (27%), books (24%) or video games (12%) [11]. They idealized these fiction and non-fiction characters and they were using similar nicknames [15].

The most significant element is “leakage”. School shooters usually reveal their homicidal or suicidal ideations [16]. They can take the form of a threat (e.g. “tomorrow you find out if you live or die”), a prediction (e.g. “something big is going to happen tomorrow”) or poems and stories usually given to their teachers [14]. In 81% of the attacks, at least one person knew about the shooters’ plans. In 59% of the attacks more than one person knew. In 93% of the incidents that person was a peer or a classmate [11] but they did not believe that shooters were talking seriously and paid no attention. Precipitating events such as suspension from school or rejection from a female or a peer were used in order to describe the causes of shootings [3]. They took place hours or days before the incidents and percentages range from 59% [15] to 100% in “classroom avengers” [10]. On the other hand research indicates that 95% of the shooters wanted to do harm whereas 93% had planned the attack in advance [11]. Their actions had started months before the actual shootings. Combining the premeditation of the attack with low activity of the autonomic nervous system, it seems that the school shooters use predatory violence [10,15]. As a consequence, precipitating events trigger the attack, characterizing “when” is going to happen and not “why” [3].

**Psychopathology**

According to Meloy et al., 23% of the juvenile mass murderers had psychiatric history but only 6% of them had possible psychotic symptomatology at the time of the mass murder [15]. These low percentages and other elements such as two perpetrators [15], specific targets [17] and phrases of the shooters after the attack [15], distant the possibility that the cause of the shootings is a psychosis. In the profile of “classroom avengers” hallucinations, delusions or thought disorders are absent [10]. But even in this case, the person seems to have the capability to organize and premeditate an attack [18]. More often school shooters had depressive symptoms [3,10,11,14,19-21] whilst at the time of the murders 63% of them showed analogous symptoms [15]. These symptoms could be manifested through outbursts of anger and hate, vandalism and risk taking [10,14]. Although suicidal ideation is predominant in shooters’ histories [3,10,11,13,19-21], Meloy et al. [18] support that 9% of the juvenile mass murderers actually commit suicide after the attack.

Suicide is more often in incidents in Europe while 60% of the offenders in the USA were arrested by the police [22]. Additionally elements of the Menninger Triad (suicide, homicide, suicide by law enforcement) are present in the “profile” of the “classroom avengers” [10]. School shooters have been described as psychopaths since they use predatory violence [18], they displayed absence of empathy and remorse [19] and they could deceive and manipulate others [23]. However, according to Beck’s classification of juvenile offenders [24] they fit better in the category of “reactive or sociopath” offender [16]. These offenders believe that their rights are not recognized and they respond with anger. Since they have poor coping skills, they commit the crime and afterwards feel guilty [24] and in the case of school shooters this guilt was specifically towards their parents [25-27]. It appears that in shooters’ history there have been described disorders that are associated with impulsivity, such as bipolar disorder, pervasive developmental disorders, obsessive compulsive disorder or attention deficit hyperactivity disorder. “Classroom avengers” do not seem to suffer from this kind of disorders [10]. Moreover shooters do not seem to have learning disabilities [10,11]. 41% of them were excellent students and only 5% failed [11]. Organic factors e.g. tumors or “holes” in the brain have also been hypothesized as causes [27,28]. But an organic or genetic factor cannot explain the premeditation of an attack, only the use of violence as a solution to one’s problems [4].

Despite the fact that “classroom avengers” have a first-degree relative that abuses substances, they do not seem to have a similar history [10]. The Secret Services found that 24% of shooters had a history of substance or alcohol abuse [11] while higher is that percentage in the sample of Meloy et al. [15] (62%). They were not however able to determine whether juveniles were under the influence of a substance at the time of the mass murders [15]. Common prescribed drugs among these shooters were antidepressants or psychotropic drugs although 10% of shooters were not compliant with the prescribed medication [11]. There is a growing research on the effects of antidepressants on juveniles. FDA has announced a warning regarding increase of suicidal ideation after the use of...
SSRIs antidepressants (except fluoxetine) for patients under 24 years old [29-33]. Similar recent announcements concern the use of antiepileptics and the double risk of suicidal behavior or ideation when taking this medication [34,35]. Even if these drugs increase suicidal ideation in juveniles, they once more cannot explain the premeditation or the inspiration. Fox et al support that their role may lie in treating, for example depression and giving the energy needed in order to perpetrate the attack [4].

**Personality dynamics**

In trying to explain why juvenile mass murderers do not actually commit suicide, despite the high percentages of suicidal ideation, researchers support that their moral development is retained in early and more self-centered stages [36]. They appear to have a weak conscience, strong mechanisms of defense and as a consequence they project their hostility [36]. These offenders are also considered to have no empathy [10,14], increasing the possibilities of acting aggressively [37-39]. They are either unable to understand others’ feelings or they do not have the ability to empathise [14]. School shooters are described as narcissistic individuals [14,16,19]. They have high self-esteem and think that they deserve to have special treatment from others [16]. When they do not get that treatment they react negatively [14]. They are either sensitive to criticism or criticism is inconsequential to them [10,14]. Data shows that the aggressiveness of a narcissistic person is a specific reaction to a specific person which threatened the person’s self-esteem [40]. Some school shooters had specific targets such as girls that rejected them, popular athletes or bullies. Furthermore the fact that 25% of the attacks were perpetrated by two students may show their need to be accepted by a peer [15].

In order to repair narcissistic traumas, mass murderers used fantasy through which they turned shame into anger [10,15]. These students consumed a lot of time fantasizing through their grandiosity or the destruction of their “enemies” [10,15]. The most important part is that these fantasies force the person to fulfill his goal in order to return to the “previous, calm psychic equilibrium” [41]. Another characteristic of these fantasies is that they allowed shooters to identify with the aggressor [15].

This defense mechanism is common in cases of abuse. But in most incidents of school shootings there was no apparent abuse from parents; however there were problematic relationships and neglect [13,19,20]. One characteristic that is more common and has the same defense mechanism (withdraw in fantasy and identification with the aggressor) is bullying [15,18]. With frequent bullying ranging internationally from 1% to 19% [42], 9 out of 10 school shooters felt rejected by their peers [20]. 71% of shooters in the research by the Secret Services [11] and all “classroom avengers” were victims of bullying [10]. Meloy et al. found that 17% of juvenile mass murderers had a history of bullying and 43% were victims [15]. Even though some shooters were both bullies and victims, bullying cannot be rejected since this group (bully-victims) seems to be the most problematic with serious behavior and self-control problems [43-45].

According to the FBI, the behavior of the school shooter changes dramatically before the shootings [14] but the Secret Services found that most of the shooters had not changed in terms of school performance or in relationships [11] making the prevention even harder. Percentages of violent histories present with a variety too. Meloy et al. [15] support that 42% of juveniles had a history of violence against others or against animals and 46% had a history of arrest. In the research conducted by Vossekul et al. [11], 31% of the shooters were violent toward others before the attack, 12% had abused an animal and 27% had been arrested some time before the shooting. Verlinden et al. [20] searching the risk factors in school shootings found that 5 out of 11 shooters were cruel to animals. Only 11% of the “classroom avengers” had a history of violence against other people [10]. It seems that more common than extreme violence are lying, deceiving, secretiveness, vandalism as well as the elements of the MacDonald triad [3,10]. Finally, school shootings are considered to be a problem of masculinity since the majority of shooters were boys. Males are more impulsive [46,47] and have more negative emotions such as anger and frustration [47].

3 out of 5 shooters were victims of bullying due to characteristics that did not fit with the codes of masculinity [3]. They were good students or members of a school band, they were not athletes and in some of these incidents, girls had rejected them. Kimmel and Mahler [48] support that homophobia and the wish to show that they are “real men” through violence, has a central role in school shootings.

**Discussion**

Despite the fact that school-related homicides consist only a small percentage of the total number of homicides and the fact that other forms of violence happen at schools every day, the attention of people and mass media is drawn by school shootings. Efforts on preventing these shootings are intensified and focused on identifying the “profile” of school shooters. Studies point out that there is not actually such a “profile” and that its creation could lead to harmful consequences for the potential shooter. Newman [3] supports that a “rampage” attack derives from the alienation of the person. Shooters either were victims of bullying, highly sensitive to it, or never been victimized but seem to have social problems. They believe that the world they live in, is a hostile place and that all people are against them. As a consequence they are becoming malicious and consume a lot of time organizing their revenge. Many researchers support that a central cause of school shootings is bullying [21,48-53]. Whether bullying and social rejection underlie these attacks, or a mental disorder preexists and the rejection is triggering events, neither has been clarified sufficiently within current research. Another factor that is common in school shooters is their uncontrolled rage and its simultaneous repression. Shooters cannot describe in words their anger and think that a climactic reaction is the only solution [16]. This reaction seems to justify the opinion of people that school shooters “just snap”.

School shootings initiated discussions concerning the safety of schools. As a response they used surveillance cameras and metal detectors or strategies such as dress codes, locker searches and security guards. Their effectiveness is not systematically evaluated; instead it seems that metal detectors intensify fear and suspicion. These safety measures raise questions on whether the solution to the problem of school violence is zero-tolerance policies or policies similar to those of a penal system. Another debate about school shootings concerns the problem of gun possession by civilians. USA comes first with 90 guns per 100 residents and it is estimated that they own 270 million of the 650 million firearms worldwide. Yemen follows with 60 guns per 100 residents and Finland with 55 guns per 100 residents. 68% of the school shooters and 94% of the “classroom avengers” acquired their weapons from their homes or relatives.

Attackers knew how to use these weapons since 59% of them had a known history of using guns before the attack. Indicative is the fact that the United Kingdom had prohibited handgun ownership after the attack at Dunblane Primary School. Whether gun possession is the cause of violence has not been proven. For Harding et al an important factor is the easy access in guns and this factor is present in the communities that school shootings took place. What seems to be different about guns in the USA is its culture since American citizens believe that gun ownership and self-protection is their right. It is significant to note that for the prevention of school shootings we need to consider the “leakage”. Both the Secret Services and the FBI have proposed threat assessment models that should be used after some kind of threat is made by a student. But most important is the improvement of interpersonal relationships between adults (specifically teachers) and students, in order to help them solve their problems but also to break the “code of silence”. Health professionals should be trained to identify the risk factors as well as liaise and cooperate with the school personnel.

**Limitations**

Not all the incidents studied fulfill the criteria of a mass murder (three or more victims). Only Meloy et al study the characteristics of school shooters at the time of mass murder. The rest of the studies are a description of characteristics that should be considered after some kind of threat is made by a student. These characteristics are not a checklist and they should not be used in order to predict a mass murder or a violent behavior in the future. Since school shooting incidents are a rare phenomenon, the majority of juveniles that fit the “profile” would not commit an attack. Reddy et al.

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