

# Contributors to Antisocial Behavior in Adolescence from the Perspective of Developmental Psychology: A Case Study on a School Mass Shooting

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**Abstract.** As the number of school shooting cases has witnessed a rapid growth in the past several years, there is an increasing concern about the massively growing juvenile crime rate. Some researchers have found that juvenile offenders have misfits, problems in dealing with interpersonal relationships, and resentment toward society and others, and an increasing number of adolescents have engaged in juvenile crimes such as mass school shooting, jeopardizing the social stability and leaving severe trauma on those who are involved in such incidents. The current study conducted a case study on a school shooting in a U.S high school with an aim to determine the causes of such incidents that happen repeatedly in society in recent years. It is found that the adverse family environment, represented by High-Intensity Parental Dispute (HIPD), parent's negligence and insecure child-parent attachment, is the main cause that contributes to juvenile offenders' lack of empathy and concern for others, leading to aggression and antisocial behaviors. Based on the results of the study, suggestions have been proposed to prevent the formation of antisocial behavior from the perspective of developmental psychology and reduce the juvenile delinquency rate from four aspects: parental, clinical, school, and judicial.

**Keywords:** school shooting; juvenile crime; antisocial behavior; adverse family environment.

## 1. Introduction

In recent decades, although the number of juvenile crimes has declined compared with the 1980s, the number of adolescent homicide victims increased by 30% percent from 2019 to 2020, which is the largest one-year increase since 1980. Meanwhile, among the most serious adolescent offenses such as robbery, murder, and aggravated assault, murder is the only type of offenses whose percentage of arrests did not decline between 2019 and 2020. Moreover, a firearm was involved in two-thirds of all adolescent homicides in 2020, such as school shooting incidents – one of the most aggressive antisocial behaviors [1]. According to the K-12 school shooting database, from 2017 to 2022, the number of the school shooting incidents increased by 3.9%, which is the highest growth rate since 1970 [2]. Meanwhile, the proportion of people who lost their lives or were wounded soared from 2020 to 2022. As for the identity of shooters and the level of schools involved in the shooting, 43.1% are students from their target schools and high schools account for 63.6% among all school levels. Therefore, there is an urgent need to conduct a study to investigate the factors behind such phenomena and find solutions accordingly.

In previous research, most emphasis has been put on the motivations and general characteristics of juvenile offenders [3], or how to punish young offenders and prevent recidivism in the juvenile judicial system. Few researchers conducted case studies on a specific shooter or analyze the context (i.e. family environment) that affects his/her mental development and formation of antisocial behaviors from the perspective of developmental psychology, which is important for schools, parents, therapists and juvenile judicial system to propose individualized solutions to address such issues.

In the current study, a case study on a school mass shooting in a U.S high school is conducted, aiming to analyze what impacts an adverse family environment can have on a child's mental

development and how such negative influences contribute to the formation of antisocial behavior in childhood or early adolescence. With in-depth analysis, a few suggestions have been proposed accordingly on how to prevent juvenile delinquency from different aspects.

## 2. Background

On November 30, 2021, 15-year-old Ethan Crumbley shot four students and wounded seven others at Oxford High School in Michigan. On the day when he committed the mass shooting, he found a gun in an unlocked container at home, hid it in his backpack and took it out in a bathroom before shooting his schoolmates. This gun, according to his father James Crumbley, was bought from a local shop four days prior to the shooting, and his mother Jennifer posted about it on social media, referring to it as Ethan's "new Christmas present".

After the mass shooting, a 22-page journal was found in Ethan's backpack. "This morning, I woke up and found that my mom was ceaselessly ranting about how we have no money and cannot pay the bills. This just further triggers my desire to hold a gun and shoot the school. It felt like I am a burden to my parents." On another page of his journal, he wrote days earlier that his grades were falling and his parents hated each other, but he didn't get any help for his mental problems.

In fact, before Ethan decided to shoot the school, he has already shown many signs of his worsening mental problems and predictors of this antisocial behavior. As early as March 2021, he began to text his mother that he was having hallucinations of demons and ghosts inside the house. He also videotaped the process of torturing animals and drew a sketch of himself shooting the school, which he joked about with a friend via text message. Meanwhile, at the end of October 2021, Ethan's best friend moved away and his family dog died, which caused him to become depressed. However, his parents never took him to any therapy after these incidents.

The investigation shows that the Crumbleys did not ignore their "troubled son", but exposed him to years of domestic disputes, including loud fights, heavy drinking, infidelity and rants about money problems, and they often get him involved in their spats. Earlier than he could remember, Ethan had learned his parents' infidelity and lived in the fear of separation from one or the other. Moreover, the Crumbleys were so negligent that they would rather spend \$4,000 each year on buying liquor than pay attention to their son's mental health care.

It can be inferred from the description above that Ethan's family environment plays a crucial role in shaping his personality, which accounts for his antisocial behavior during adolescence. Therefore, it is important to conduct a study on the specific parenting style and behaviors that lead to children's mental problems and antisocial behaviors.

## 3. Analysis

In this part, two of Ethan's antisocial behaviors are selected to make an analysis on its contributing factors from the perspective of his mental development and family environment.

### 3.1. Animal Abuse: Predictor of Antisocial Behavior

Abuse refers to interactions in which one person behaves in a cruel, violent, demeaning, or invasive manner towards another person or an animal. The term most commonly implies physical mistreatment but also includes sexual and psychological mistreatment [4]. In the current study, abuse is restricted to the cruel or violent behaviors that one conducts towards animals only, namely animal abuse. Studies on the clinical perspective have proved that children who torture or do harm to animals in an extremely cruel way are more likely to engage in violent or aggressive behavior towards others [5, 6].

One of the factors that drive children to commit violence against animals is the adverse family environment in which they were born. Literature consistently shows that treating animals with violence in childhood or during adolescence implies that a child has mental problems or a

dysfunctional family featuring aggressive behavior or verbal conflicts against each other, drug or alcohol abuse [7, 8]. Moreover, animal abuse is considered to be a possible signal of child abuse or other forms of violence that occur in the family [9]. From the previous research on animal abuse in childhood or early adolescence, it is obvious that great emphasis has been put on the family environment, including the marital relationship and parenting, as a contributor to the formation of children's antisocial personalities and behaviors.

High Intensity Parental Dispute (HIPD), a typical indicator of adverse family environments, has been increasingly recognized as one of the factors that cause problems on children's mental development. HIPD refers to the continuous intensive dispute between parents. It features extreme mutual distrust, high levels of anger and hostility, verbal and physical violence, etc. [10, 11]. As it is stated by Katz and Glucklich in their article, children's frequent exposure to HIPD has a close link to their behavioral and emotional problems, which may lead to conduct disorder (CD) [12]. In *DSM-IV-TR*, CD refers to a persistent pattern of behavior, including violating the basic rights of others and neglecting normal social standards. There are many specific behaviors related to CD, such as aggression, lying, running away from home, theft, cruelty to animals and fighting [4].

In the high school shooting case in this study, the shooter Ethan started to show signs of conduct disorder months before he committed the school shooting. For example, he tortured animals and videotaped the whole process. According to the prosecutors of this case, Ethan's parents, Jennifer and James Crumbley have put Ethan into years of their disputes and even exposed him to the fear of separation of one from the other since he was in kindergarten. It is revealed that Ethan's mother often took him with her to stay overnight in her lover's house. According to a previous multivariate analysis, it is shown that children between 5 and 6 exposed to a feuding family environment in which parents show negative parental representations are more likely to have conduct problems than children of other ages [13]. Ethan was raised in a family with a context of ongoing parental dispute at kindergarten age, which makes him more vulnerable to the influence brought by his adverse family environment, leading to possible consequences including low self-esteem, aggression and conduct problems and lack of remorse or control. All analyzed above are risk factors that predict his antisocial behavior and personality disorder in adolescence.

Concluded from the analysis above, the adverse family environment causes great damage to a child's mental health, increasing the chances of escalation of behavior from animal torturing to aggression and violence against other human beings. Moreover, fierce disputes between parents function as a strong risk factor for children's development of conduct disorder, which is defined in *DSM-IV-TR* as a persistent pattern of abnormal behaviors.

### **3.2. School Shooting: Act of Aggressiveness**

According to the definition given by Gerard et al., a school shooting, at the most basic level, can be considered as an incident consisting of at least one person using a firearm and shooting one other person at minimum deliberately in school [3]. In a research on the characteristics of offenders and offence of school shooting, it is found that among the 28 cases of the research sample that took place in schools between 1988 and 2009 in a number of countries, 54% of the offenders, or shooters, suffered from abuse (i.e. mental, physical or sexual) or neglect during their childhood [3]. Other literature shows that in offenders' families, a lack of supervision, or negligence, is a common phenomenon [14].

Negligence refers to the failure to fulfill a duty or to provide some response, action, or level of care that is appropriate or reasonable to expect [4]. This term is often used in the study of mental development as one of the key factors leading to the formation of aggressive and antisocial behavior in early childhood or adolescence. It is regarded as an indirect harmful behavior conducted by parents that exposes children to an adverse growing environment [15]. It is also related to concepts concerning parenting. According to the parents' way of interacting with their children, the US developmental psychologist Diana Baumrind classified parenting into four styles: authoritarian parenting, authoritative parenting, permissive parenting and neglectful parenting. Negligence is the dominant

feature of neglectful parenting, in which the parents are unsupportive and fail to monitor behavior or pay much attention to the needs of their children [4]. Children raised in this parenting style tend to lack empathy and concern for others, increasing the risk of conducting aggressive and antisocial behavior in the future [16].

Children's insecure attachment toward their parents also leads to a higher possibility of aggressiveness and antisocial behavior. John Bowlby's writings and research laid a foundation for the development of the attachment theory. Attachment is the emotional bond or tie that formed by an infant with the mother [17]. This bond is so powerful that it is nearly unchangeable in one's whole life. Moreover, Bowlby also proposed the concept of secure base, which refers to a place of safety provided by a parent that an infant use as a base from which to explore a novel environment. Based on Bowlby's attachment theory, Mary Ainsworth did more research on different ways in which children bond with their parents [18]. According to her and Main and Solomon, the parent-child attachment can be divided into two main types: secure attachment and insecure attachment [18, 19]. Insecure attachment can take one of the three following forms: ambivalent, avoidant and disorganized. It is generally considered as a negative parent-child relationship in which the child does not respond to the parent and does not consider the parent as a secure base. Children with the insecure attachment style tend to have a caregiver who is inattentive to their children's needs [4, 20]. Research also shows that this kind of attachment style may lead to a broad range of problem behavior at a later age and predict relative increases in delinquency [17, 21].

Based on the literature that studies the influences of parents' negligence and children's insecure attachment on the formation of personality and mental development, it is suggested that these two factors can lead to aggression, antisocial and problem behaviors and delinquency in adolescence, which can hardly be changed. From the way that Ethan's parents treated him since he was little, it is shown that negligence and lack of supervision prevailed in his family environment. For example, his parents seldom responded to his needs. When he saw hallucinations and asked people around him for help, they ignored him and never cared about his mental health after some incidents that caused his depression and problem behavior. Meanwhile, Ethan's insecure attachment can also be seen from his behaviors. For instance, Ethan has been lived in the fear of separation from one of his parents since only six. He wanted his parents to stop fighting and live together in harmony, which conforms to the characteristic of ambivalent attachment style (one of the forms of insecure attachment): highly distressed by separation. Moreover, as it is written in his journal, he also complained about his parents' not loving him, claiming that he was a burden to them, which shows the mixture of clinging and anger – another feature of ambivalent attachment. In the long run, such persistent negligence from parents and insecure attachment style can result in his grudge against and inability to relate to the outside world, which contributes to his aggressiveness against other people at school.

Therefore, it can be inferred from the current study that the negligence of parents and insecure attachment of children against their caregivers contribute to the lack of empathy and concern for others, a wide range of problem behaviors and the increased possibility of delinquency in the future, all of which result in the formation of aggressiveness and antisocial behaviors.

## **4. Discussion and Suggestions**

In this section, recommendations will be provided to prevent juvenile delinquency and reduce the rate of juvenile crime in the following four aspects.

### **4.1. Parenting aspect**

Children are supposed to form a healthy attachment with their parents during infancy. This is mainly because forming a healthy attachment with parents in early childhood is important for children to develop adequate social skills and the ability of emotional control. A young person with better social skills and emotional control is able to cope with pressure from school better, perceive less peer pressure and relationship problems and is less likely to engage in risky behaviors. Bowlby claims

that an infant needs to form a secure attachment with the primary caregiver, in order to achieve social and emotional growth [17]. Two elements are required to establish a secure base: 1. Caregiver should be responsible for the child's physical, social and emotional needs; 2. There must be enjoyable interactions between the caregiver and the child [17].

This article strongly recommends that parents not involve their children in HIPD. Parents should not let their children get involved in the chaos of their relationships, and they should not let them choose sides, which is likely to make children stuck in separation anxiety. Even if they choose to live separately, let the children know that they will still give them steady love and support after their separation.

#### **4.2. Clinical aspect**

Three physiological indicators can be used to predict adolescents who have more possibilities to engage in antisocial behaviors.

A low resting heart rate is strongly connected to antisocial behavior. From the sensation-seeking theory, a low resting heart rate is one of the markers of low autonomic arousal [22]. This is hypothesized to be an unpleasant physiological state, leading those who have low heart rates to seek stimulating behaviors, including shooting, stealing, etc., to increase their level of autonomic arousal to an optimal level.

Similarly, certain genes like the low-activity allele of the monoamine oxidase-A gene (MAOA-L) is also related to antisocial behavior for both males and females, especially combined with those who was growing up in adverse family environment such as long-term abuse or neglectful caregiving in their early life [23].

Two types of antisocial disorder, oppositional deficit disorder (ODD) and conduct disorder (CD), possess high comorbidity with various other diagnoses [24]. According to a clinician, 'about 70% of individuals with ODD have comorbid ADHD' and the majority of teenagers who have the potential to do something harmful to society have suffered from long-term anxiety and depression. Therefore, it may be an obvious symptom to indicate antisocial behaviors, but it is also significant to avoid excessive diagnosis.

This article recommends that these three factors should be included in annual adolescent health surveillance in order to better screen and focus on adolescents who are prone to extreme behaviors.

In addition, for children who have experienced HIPD, prompt intervention and treatment are essential. According to Hanita Kosher and Carmit Katz, the three-stage process model can be identified as impairments in parent-child relations in the context of HIPD [12]. In stage 1, The child has just been exposed to a dispute and they still expect to maintain a connection with their parents. But confusion has arisen about one of the parents. In stage 2, The child chooses to stand in line, which is considered a way for the child to survive trauma. In stage 3, the child begins to act as a soldier of one partner against the other, which also means that the conflict has spilled over from the coupled system to the parent-child system. In this process, stage 1 is a very important stage where intervention should be taken to stop the later outbreak. Also, it is critical to introduce trauma-related treatment for children who have experienced HIPD [25].

#### **4.3. School aspect**

First, Schools should set up risk assessment programs. Many school shootings occur because schools do not pay attention and divert at-risk students for related treatment. A study shows that 43% of the current teenage shooters have told other people at the school about their plans before committing their crime[3]. In addition, inter-student conflicts, school bullying, family background, and students' psychological status should be included in the risk assessment program. Second, schools should develop a legal curriculum so that youth are aware of the consequences and penalties for their actions. Third, since school shootings have frequently occurred on high school and college campuses in recent years, schools should regularly organize drills and train teachers on skills to reduce casualty when they encounter dangerous situations.

#### 4.4. Judicial aspect:

The juvenile justice system needs to be updated to account for the many elements that contribute to juvenile criminality and, as a result, provide workable and comprehensive solutions. The juvenile justice system specifically should be designed to deal with juvenile crimes from a standpoint of a solution rather than treating them all equally from a linear approach of infractions and penalties [26].

### 5. Conclusion

This paper conducts a case study on a school mass shooting with the purpose to analyze the negative impacts of adverse family environments on a child's mental development and how such impacts lead to problem behaviors of children, causing the formation of antisocial behavior in childhood or early adolescence. Suggestions are also proposed to prevent juvenile delinquency from four different aspects. Through the study, it is found that the adverse family environment, including High-Intensity Parental Dispute (HIPD), parents' negligence, and children's insecure attachment may lead to children's mental problems and personality disorders in their development. If this situation is left untreated, it is likely to result in violence and aggressive behaviors against others. Some researchers believe that some abnormal behaviors in childhood resulting from adverse family environments can escalate into aggression and violence against others, and may evolve into conduct disorder (CD). Moreover, the negligence of parents and children's insecure attachment against their parents are found to be two of the contributing factors to children's lack of empathy and concern for others, leading to problem behaviors and increased possibility of juvenile delinquency, which contributes to the formation of antisocial behaviors. Therefore, suggestions have been proposed respectively to prevent the problems mentioned above from four different aspects – parenting, clinical, school, and judicial. Parents should take the responsibility to raise their children well and provide them with a safe, caring, and stable home environment. At the same time, schools should pay prompt attention to the mental and behavioral status of their students. Students with problems should be dealt with appropriately in order to prevent socially harmful behavior on a large scale. Meanwhile, it is significant that society and the judicial system should pay more attention to the psychological problems of adolescents during their development, and conduct annual health surveillance to detect precursors of antisocial behaviors.

Compared with the past study that focuses more on the motivations and general characteristics of juvenile offenders, and emphasizes the reform of the juvenile judicial system, the current study does a case study on a specific shooter and analyzes how the family environment affects his mental development and contributes to his antisocial behavior. However, this study has several limitations. First, this study only explains the formation of antisocial behavior from the adverse family environment without considering other possible influences in the surroundings such as rejection and bullying from peers. Second, this study does not take the internal contributing factor of the shooter into account, attributing his antisocial behavior solely to the external environment.

In future research, more emphasis should be put on the combined contributions of both the internal and external factors that lead to children's antisocial behaviors. Moreover, as it is mentioned above, some genes can also cause antisocial behaviors if these genetic factors are triggered by negative experiences such as long-term abuse and negligence. Therefore, future research needs to find out how to detect such genes as early as possible and what measures should be taken to prevent children with these genes from the exposure to adverse external environments so as to decrease the chances of juvenile delinquency in a targeted manner.

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