

How Do Environmental Factors and Parent-Child Relationships Contribute to The Likelihood of Criminal Behavior in Adulthood?

Jakhona Begim Juraeva

Received November 03, 2024

Accepted February 25, 2025

Electronic access March 15, 2025

Criminal behavior can develop from a range of influences, such as parent-child relationships and environmental factors, including educational settings, media, peer, and community influences. Therefore, it is relevant to investigate human nature and factors influencing criminal behavior. Although people commit crimes because of subjective and objective circumstances, the proper intervention therapies involving behavioral modification (Cognitive Behavioral Therapy, Schema Therapy, Dialectical Behavior Therapy, and Restorative Justice) for children at risk of deviant behavior are crucial to preventing criminal behavior in adulthood. This literature review aims to disclose the nuances in the origination of criminal behavior with particular attention to the parent-child relationships' role in childhood and the environmental factors in which children gradually develop as independent members of the community. This review critically analyzes existing literature to elucidate the role parent-child relationships and environmental factors play in projecting criminal behavior in adulthood, contributing to existing knowledge with a comprehensive framework that emphasizes underexplored interactions and potential pathways for intervention processes.

Keywords: criminal behavior, parent-child relationships, environmental factors, intervention therapies

Introduction

According to the United Nations Office on Drugs and Crime¹, there are over 11.7 million imprisoned people worldwide, the number of which is comparable to the entire populations of Bolivia, Belgium, Tunisia, or Burundi. While the incarcerated people are generally males (93% of global prisoners), the trends for female incarceration have seen an increase of 33% in later years. Men are most likely to be incarcerated for violent crimes (e.g., rape, murder, assault), whereas women are sentenced for committing non-violent offenses, such as property crimes or drug-related offenses². As the World Prison Brief³ reports, the area with the highest crime rates happens to be North America, with only the USA accounting for about 2.2 million people in prison. These overwhelming numbers drive us to understand the reasons behind their imprisonment: most of those people have been found guilty of committing certain types of crimes, hence manifesting criminal behavior. But what does the term "criminal behavior" stand for?

Criminal behavior is a type of conduct that leads one person to commit an unlawful act of different types, from minor offenses to severe crimes with dangerous implications for others (murders, violence, robberies, abductions, etc.)⁴. Criminal behavior is a term used in various fields of science – law, criminology, psychiatry, sociology, and psychology, yet remains poorly explored, demanding further search for answers⁵. Questions about the motives behind criminal behavior and the factors influenc-

ing it continue to challenge researchers, indicating the need for ongoing study in this field to deepen our understanding. The complexity of human nature makes it challenging to examine all its dimensions, which implies that a wide range of behaviors, including those with negative intentions or harmful consequences, may be possible.

Moreover, historical records indicate that human behavior has often been characterized by greed, ruthlessness, and a lack of ethical restraint, particularly when individual desires, objectives, or vested interests are involved⁵. Over the last century, the explanations of criminal behavior have been argued widely. Some allude to genetic predisposition while others suggest that the answer lies in how a criminal's environment has been forming and influencing the formation of personality. However, criminal behavior is a cumulative process of all of the above-stated components. It is more complex in explaining its roots and causes, therefore lacking an infallible explanation⁶. Crime encompasses the long stages of development through the life course, particularly in childhood and formative years. Criminal behavior forms under the influence of risk factors that comply with conflicting parent-child relationships, adverse social environment, and individual psychological and moral characteristics and traits adopted in childhood. As Zúñiga⁶ states, all of these have a significant influence on the cognitive development of a person. Those risk factors predispose individuals exposed to adverse environments to manifest illicit actions while determining the positive life scenarios of others with favorable environments. What is evident

from the previous research conceptions is the crucial role of childhood conditions in all life stories of a range of perpetrators. Since children are known to be most perceptive to changes and flexible in adaptation, it is important to consider their developmental contexts as most prerequisites for criminality shape at an early stage⁶.

Criminal behavior is such a complex phenomenon that the specific features matching every other perpetrator's profile have not been firmly defined for centuries. Therefore, a lot of factors need to be considered. They should include not only the investigation of a perpetrator's background (early living conditions, family relationships, psychological health, etc.) but even widening the scope of exploration from analyzing the crime trends and areas where it thrives (e.g., studying neighborhoods with high crime rates) to understanding society's stance on crime. No matter the seriousness and severity of the crime, it has been scientifically acknowledged that each criminal has motives, whether based on objective or subjective judgment. Variables contributing to criminal behavior must be considered in every investigation, psychological assessment, or legal proceedings. According to The Universal Declaration of Human Rights article 7⁷, "all are equal before the law and are entitled without any discrimination to equal protection of the law," implying the fundamental human right for legal protection even for convicted criminals. On this basis, society needs to mitigate its biased standpoint toward addressing the causes of criminal behavior, which are typically rooted in childhood. Through the provision of the necessary treatment programs not only will criminals potentially be allowed to become rightful members of society again but mainly society will benefit from functioning correctly in the crime-free environment without perils for public mental health. Primarily addressing the childhood risk factors (e.g., through consolidation of parent-child connection, parental support, and community-based initiatives) and prioritizing interventive treatments (e.g., behavioral modification) can reduce criminality by fostering emotional stability, prosocial behavior, and resilience.

The goal of this literature review is to synthesize existing knowledge about the interplay between parent-child relationships and environmental factors in shaping the propensity for criminal behavior in adulthood, outlining some of the most significant reasons that lead to criminal pathways. While there is a gap in the literature on longitudinal studies that explore reciprocal effects of variables (e.g., attachment styles and socioeconomic status), counterpoints, and protective factors mitigating risk, this review covers the multifaceted paths through which environmental and relational factors foster criminal behavior, ultimately mentioning targeted intervention strategies.

Methodology

This review paper employed a systematic approach to examine the role of parent-child relationships and environmental factors

in contributing to the likelihood of criminal behavior in adulthood. A comprehensive search strategy was developed, utilizing the databases, such as Google Scholar, keywords, and boolean operators as follows: "parent-child relationships" OR "parent child relationships" AND "criminal behavior" OR "deviant behavior"; "environmental factors" AND "criminal behavior" OR "delinquency"; "criminal behavior" AND "intervention therapies" OR "intervention methods"; "childhood" AND "criminal behavior" AND "adulthood". Peer-reviewed articles published between 2020 and 2024 were utilized. Inclusion criteria focused on systematic reviews, empirical studies, and meta-analysis research that explicitly explored the interplay between parent-child dynamics and environmental (social, cultural, socioeconomic) factors as the predisposition to criminality in adulthood while excluding non-English publications and studies primarily focusing on criminal outcomes without considering the childhood background. The synthesis process involved thematic analysis to identify the relevant pieces of information matching the review question, excluding the pieces about specific mental and psychic disorders and special genetic features. Quality assessment involved ensuring the reliability and relevance of the information grounded in empirical results or transparent references to previous studies with valid citations.

Literature Review

As Zeigler-Hill and Shackelford⁸ define, parenting is the comprehensive process relating to the upbringing of offspring. Parent-child relationships refer to the unique interactions between the parents and their children and the quality of their cooperation. In the meantime, parenting styles that promote children's healthy perception of the world are especially critical for the mental development of children and subsequently determine significant factors in how they will behave in society⁹. The fostering of high-quality parenting, full of love, support, consistency, and discipline, is required for one to acquire healthy physical and mental development.

Research has shown how parent-child relationships, in all their meanings, impact the cognitive development of children, thus potentially exposing them to risk factors, such as parental misbehavior and child maltreatment or domestic violence, which originate criminal behavior⁵. Children and adolescents who are particularly vulnerable and less resilient to developing delinquent behavior are those with extreme exposure to risk factors associated with parent-child interactions. Since family and especially parents create the conditions for a stable upbringing, they are in charge of promoting healthy and functional aspects of family life that prevent antisocial behavior as children brought up by good parenting involving responsiveness, sensitivity, and positive encouragement can internalize moral values through close-knit relationships and qualitative bonding. The absence of adequate parental care (e.g., meeting a child's needs and creat-

ing a mentally safe environment) is one of the main factors that compose criminal inclination in adulthood.

Parenting styles and their influence on parent-child relationships

“Parenting styles” are usually closely associated with “parenting practices,” as both refer to parent-child relationships. However, there is a slight difference in their terminology. As Baumrind¹⁰ describes it, parenting styles correlate with the attitudes of parents towards their children. They are characterized by the quality of emotional climate in the parent-child relationships and interactions, which subsequently affect children’s well-being. There are commonly accepted to be 4 types of parenting styles, with each of them having specific effects on parent-child relationships¹¹:

- *Authoritative parenting* is described as warm and firm as it provides children with the necessary guidance and a moderate level of control and boundaries. This style is the most favorable for parent-child relationships where support, openness, and impartiality are present due to promoting children’s healthy physical and mental development, addressing all their needs.
- *Authoritarian/controlling parenting* values strict disciplinary actions and favors punitive punishments to ensure obedience and absolute dominance with high levels of monitoring. This style nurtures aggressiveness, rebelliousness, and dependence in children, aggravating the quality of parent-child relationships.
- *Permissive/indulging parenting* is warm and undemanding with freedom of expression. Parental involvement in nurturing is minimal, with the absence of any regulations or rules. Children of this parenting style are ignorant of orders and disregard listening to others. Thus, there is virtually no assessment of parent-child relationships here, as parents do not actively participate in children’s lives.
- *Neglectful/uninvolved parenting* is characterized by being completely cold and unbothered. Parents “do not see” their children; they are self-centered and highly engaged in their personal lives, leaving children to fate. Children of such parents may exhibit impulsive and disobedient behaviors.

Parenting style is determined by the parents’ behavior, with internalizing problems (e.g., sleep and mood) and externalizing problems (e.g., social stress and job difficulty). Out of these parenting styles, the authoritative style is claimed to be the most unproblematic and effective, contributing to the healthy development of children. In contrast, authoritarian parenting has a stronger association with producing children with delinquent behavior in adolescence and adulthood, committing persistent

and severe crimes⁴. Parenting styles and the level of parental sensitivity influence the attachment patterns of children. When parents do not adequately respond to children’s attachment signals, it can shape faulty attachment patterns, which, as a result, leads to the occurrence of problems in attachment relationships in adulthood and potential crime, especially sexual crimes: research demonstrate the prevalence of insecure attachment patterns in sex offenders than non-offenders⁴.

Studies show the effectiveness of discipline in the healthy upbringing of a child if it is applied consistently and depends on the child’s behavior¹². Nonetheless, there are various styles of delivering discipline and different associations with the development of criminal behavior as a consequence of the former. Generally, there are three types of disciplinary practices:

- *Power assertion* includes physical punishments, bitter criticism of the child, and threats. This type of discipline is strongly associated with child abuse, which has harsh repercussions for children’s healthy development and future: victims of severe physical abuse are three times more likely to use drugs and alcohol, get in fights, damage property, and be arrested¹². This technique was most used by the parents of delinquents.
- *Love withdrawal* involves expressing disapproval verbally and refraining from physical affection (e.g., hugs, kisses, cuddles). This technique doesn’t physically harm children but may evoke feelings of isolation and unimportance, which might break the parent-child bond.
- *Induction* refers to reasoning with the child and talking over the consequences of misbehavior in a calm and adequate manner. This way, children learn to reflect on their deeds and grasp the concepts of self-regulation and empathy. According to Marsh¹², induction is associated with healthier developmental outcomes.

Psychosocial aspect of parenting

Bjelajac⁵ not once stated the significant influence of psychosocial aspects of parenting, namely parental psychopathology, which is theorized to be an essential risk factor for children’s functioning as children tend to mimic, learn, and absorb disturbed behaviors of parents due to the patterns of parental modeling. Parents’ disturbed behaviors, when internalized by children, can manifest as emotional dysregulation, low self-esteem, and social withdrawal, increasing their vulnerability to maladjustment. For instance, alcoholism thriving in families increases the risks of child abuse, which may contribute to antisocial behavior and maladjustment of children⁵. Parents with psychopathologies often exhibit withdrawn, inconsistent, or emotionally unavailable parenting styles, which can lead to insecure attachment in children and impair their ability to regulate emotions or form

healthy relationships. This may result in depression and anxiety in children, bringing negative implications for their development. Children may model hypervigilance or excessive worry, limiting their capacity to cope with stress. Over time, these early deficits may escalate into more severe outcomes, such as antisocial behavior, delinquency, or criminality in adulthood, as children who grow up in such environments often lack the emotional and social skills necessary to navigate challenges constructively⁵. Addressing parental psychopathologies through early intervention and support is therefore critical to breaking the cycle of intergenerational dysfunction and promoting healthier developmental trajectories.

Cognitive development

Healthy cognitive development is the ability to think, perceive, and reason; it engages high levels of self-regulation, i.e. a concept that encompasses abilities to manage emotions, thoughts, and behaviors in line with long-term goals and social expectations, and emotional control¹¹. Cognitive development is crucial for one to become a self-sufficient and adequate member of a functioning society. Parenting practices and their implementation have a direct impact on the cognitive development of children. Negative parenting styles, such as authoritarian with power assertion, risk disrupting normal cognitive development through the adverse implementation of parental responsibilities, especially regarding the provision of a mentally balanced environment with the presence of support, approval, appreciation, cooperation, and protection¹¹. Parenting is a multidimensional term that covers some aspects of a child's development, such as quality of instructions, animation, cognitive stimulation, physical care, sensitivity, and positive responsiveness. Research by Lanjekar et al¹¹. indicate that a facilitative environment involving positive parenting with warmth, emotional safety, and kindness is required for a child to mature fully physically and mentally. Positive parenting with responsiveness, warmth, support, consistency, caregiving, encouragement, approval, and thanking stimulates early brain maturation, enhancing children's cognitive abilities and enabling them to freely and effortlessly regulate their emotions.

In contrast, children raised in dysfunctional families under harsh and inadequate parenting with rejection and inconsistency show difficulties in educational and social settings, experiencing hardships with self-regulation and being less resilient to depressive episodes and teenage angst¹¹. Positive parenting hones the maintenance of high effortful control referring to a child's ability to regulate their impulses, emotions, and behaviors voluntarily, often requiring conscious effort (e.g., delaying gratification, inhibitory control, focusing attention, and attention-shifting), which predisposes children to cultivate early learning skills and less problematic behavior. Negative parenting, conversely, brings low effortful control with implications

to academic (inattentiveness and struggles to keep up with the curriculum) and social (failure to build strong connections with friends and undergoing peer pressure) environments. Therefore, poor parenting fostering low effortful control and lack of self-regulatory abilities in children may lay the foundation for criminal behavior as it affects children's cognitive development and abilities to face stress-inducing situations and challenges¹¹.

Apart from the above-mentioned parenting influence on cognition, there is the real "like father, like son" component in criminal behavior that cannot be overlooked¹². Parental incarceration is believed to be one of the most significant risk factors shaping criminal individuals¹³. It has been found that children with incarcerated parents go through adverse challenges more often as opposed to their peers, namely extreme poverty, parents' abuse/dissolution of marriage, homelessness, etc.¹⁴ Moreover, there are different implications for children's cognitive development based on whether their mother or father is in prison/ jail. It has been shown that maternal imprisonment has a more harmful influence on children as they experience more mental health issues and substance abuse; children with mothers in prison are exposed to more risks in comparison to paternal incarceration as mothers are typically the primary caregivers, which, in turn, may reflect on their criminal activity¹⁴. Incarcerated mothers were more likely to have their children put in prison as well, along with their regularity of using drugs, which increased the probability of children ending up in prison like their mothers.

Poehlmann-Tynan and Turney¹⁴ suggest that paternal incarceration, affecting more boys than girls, primarily results in emotional difficulties, behavioral problems, mental health problems, and delinquency. Father imprisonment also has some detrimental effects in academic contexts for boys, leading to underperformance during educational processes (majorly contributing to involvement in antisocial/criminal behavior)⁵, loss of involvement, and low chances of graduating from college. Overall, children with one or both of their parents being imprisoned accounted for higher chances of criminal outcomes in adulthood: parental incarceration forecasted being accused of a felony, experiencing early parenthood, and alienation from society in adulthood¹⁴.

Real-life Examples

As noted by Likitha and Mishra¹⁵, poor parent-child relationships and children's maltreatment have proved to disrupt the normal mental and physical development of children. Most incarcerated perpetrators have gone through adverse childhood experiences, including negative parenting from their parents. As it has been discovered, aggressive discipline delivered by parents, or *power assertion*, often includes physical abuse, which inevitably leaves a mark on children's development. One of the victims of child abuse with aggressive discipline is a notorious murderer and addict, Richard Barry Randolph¹⁵. He was raised

by an unhinged mother and cruel father with preferences for the application of punitive and aggressive disciplinary methods. His father violently abused him both physically and mentally, which caused him deep psychological trauma, contributing to low effortful control and aggression problems. Richard was discharged from the army for his drug mania and later became a murderer and ended up being sentenced to death. Conclusions by Likitha and Mishra¹⁵ demonstrate that the physical abuse caused childhood trauma, which resulted in triggering indulgence in drugs and criminal offenses.

One of the most well-known cases of a perpetrator being acquitted because of *Dissociative Identity Disorder* (DID), which develops based on a child's maltreatment by parents (sexual and harsh physical abuse, emotional trauma) and adverse parent-child relationships, is Billy Milligan with his 24 distinct personalities, confirmed by the psychological expertise¹⁶. He was arrested for three rapes in Ohio in the 1970s. Milligan experienced a traumatic childhood: he went through numerous cases of harassment and severe physical and sexual abuse from his stepfather, who was supposed to be his father figure and a caregiver. Milligan's mother was a neglectful parent who didn't provide him with support and protection to counteract the abuse and stop the terrible violence. Hence, enduring an authoritarian regime with constant violence, an uninvolved attitude from his mother, emotional deprivation, and fearful life conditions, Milligan unconsciously developed a 'self-protection mechanism' in the form of disintegration into multiple personalities (DID), which eventually resulted in several serious crimes supposedly committed by other personalities¹⁶.

Surprisingly, sometimes, no presence of physical or sexual abuse is needed for the person to have criminal behavior. It remains true for Jeffrey Dahmer, also known as Milwaukee Monster¹⁷. Although, on the surface, he had a very loving father and an adequate mother, some critical variables determined his life course. Dahmer was born to a depressed antidepressant-addict mother and a father who was always busy with his chemistry research. His parents had very troubled relationships and constant fights, which affected Dahmer's perception of a functional family environment¹⁷. When his little brother was born, as Jeffrey reported himself, he didn't feel enough attention he needed, even from his father, who was seemingly the closest person to him. Dahmer's mother is the best example of a neglectful type of parent as Dahmer revealed how his mother always prioritized her career over him, leaving Dahmer without love and care. In the meantime, his father was so distracted by the challenge of his relationship with his wife that neither of them attended to Dahmer. Dahmer's childhood environment involved neglect and lack of emotional support, which has been linked to later social and behavioral difficulties. As a result of such a family climate and neglectful parenting style, witnessing a lot of verbal aggression, and feeling lonely, Dahmer became isolated and started drinking, which weakened his inhibitions and led to committing

his first of many murders¹⁷.

Environmental Factors

As evidenced by real-life criminal examples, parent-child relationships are most frequently associated with the prime causes of criminal inclinations. Nonetheless, environmental factors, such as community and neighborhood influence, peer influence, school environment and academic performance, and social status, still play a significant role in the composition of a criminal mind⁴. The environment in which children develop is the external stimuli that interact with their personality, exposing them to favorable and unfavorable conditions that eventually shape their worldviews and perceptions. Humans thrive and live in social groups in various communities, so the influence of their interactions on each other is imminent, changing morals, values, thoughts, behaviors, and even personalities. Even though, stereotypically, one of the significant environmental factors contributing to the occurrence of criminal behavior is believed to be poverty, it does not automatically predispose one to follow a criminal pathway in life⁵. Additionally, there are more essential and influential factors from different aspects of life that may produce antisocial people with criminal behavior.

School and Educational Performance

One of the environmental factors that has been showing a consistent correlation with delinquency is academic abilities and school climate¹². Nevertheless, academic performance is a much more critical measurement in predicting delinquent propensities regardless of how academically capable children are. Early educational setbacks and academic failures, along with school non-attendance, are strongly associated with criminal behavior, and those who frequently fail at educational institutions are at greater risk of developing an antisocial nature and delinquency⁵. Conversely, staying in school reduces the opportunities for criminal acts and ensures protection from adverse exposures. A study conducted by Zúñiga et al⁶. indicates that "low academic performance is related to future antisocial behavior". It is also highlighted that low performance and disrupted schooling trajectories are linked to chronic delinquency, which is characterized by shorter criminal activity with a more significant number of convictions and crimes. The statistics showed that young people who were prone to repeat grades or drop out of school were twice as likely to commit violent crimes⁶. However, when schooling and educational processes are appropriately completed, the chances of engaging in criminal activities drop dramatically, predominantly in males, as it serves as a protective mechanism that prevents the development of violent and non-violent criminal careers.

Educational performances in school are not the only determinative factors. The quality of after-school care should also

be factored in, especially for little children who are too young to stay alone⁵. A lot of unsupervised time after school without any guardian risks leading to making connections with antisocial peers and falling under their influence both in the virtual and real world, creating convenient conditions to be involved in delinquent acts in early adolescence.

Peer Influences

Children's relationships with peers are unique and crucial for their social and emotional development and normal integration into society, so peers have an imminent impact on each other's worldview and personality⁵. When reaching adolescence, the peer's approval becomes more valuable than parental approval, so an acute sensitivity to peer influences may be a risk factor if one falls under the negative impact, willing to engage in anything to gain appreciation and endorsement. In the case of peer rejection, some detrimental effects are brought on children's and adolescents' socio-cognitive development, making them more susceptible to anxiety, loneliness, depression, unsubstantiated aggression, academic failure, or even suicidal thoughts and attempts.

Sometimes, peer influences lead to offending, which does not last throughout the life course, commencing in adolescence and ceasing in adulthood¹². This is called 'adolescent limited offending,' which implies the resistance to commit crimes once becoming an adult, thus 'growing out' of this delinquent behavior. It is argued that this phenomenon happens because of the 'maturity gap'- adolescents are no longer children but not mature enough to be by themselves¹². As a result, they seek ways to break off from their parents' supervision and try themselves in everything their friends become involved in. While adolescent-limited offending is true for a large number of people, especially males, there is another group of people who fall under the 'life-course-persistent offending' category, proceeding to commit more illegal acts in adulthood. Whereas adolescent limited offenders eventually adapt to altering contingencies, thus changing their course of actions when it becomes beneficial to them (e.g., when they realize the advantage of education or getting a job), life-course-persistent offenders do not know the measure. They realize that some people lead a 'free lifestyle' with alcohol, drugs, criminality, and early parenting. Once they start their criminal career, they become incapable of adapting to beneficial changes and desisting from committing illegitimate acts¹².

Community

The place where a person fully develops both physically and mentally plays a considerable role in shaping normal individual behavior, which aligns with social norms and serves as an essential indicator in studying the antecedent mechanisms of

crime⁴. Various studies reported the structural problems of the community and how these disadvantages were associated with adolescents' offending due to the awareness and susceptibility to social disorder, which led to youth reporting high crime rates⁴. This signifies the indirect correlation between the level of social organization in neighborhoods and criminal behavior in adolescents.

There are several risk factors, characterized as social exclusion processes, relating to community, such as unemployment of parents/exclusion from the labor market, being a part of marginalized neighborhoods/ethnic, racial, gender-based minorities, and low economic income⁶. All these factors may facilitate the origination of criminal behavior as they set a perfect example of economic and racial/gender discrimination, which, if experienced at a young age, may be opposed to healthy world perception and turn into unrestrainable aggression in the future.

Furthermore, the presence of crime in neighborhoods and communities is a detriment to mental health as it contributes to the development of mental disorders¹⁸. It is found that disadvantaged and low-income neighborhoods and communities with social disorganization and low collective efficacy are at the greatest risk of getting increased crime rates with negative implications for the mental health of residents¹⁸. Close exposure to crime, whether it is direct or indirect (i.e., becoming a victim/witnessing crime), induces high rates of depression, psychological distress/internalizing symptoms, anxiety, and even psychosis, which can have a cumulative effect and subsequently lead to antisocialism and delinquency.

Media

In today's technologically advanced world, modern children are tech-savvy from their youngest years and are particularly perceptive to violent content flooding media, which may originate criminal inclinations⁴. To prove this, there have been conducted some studies which revealed the imitation of aggressive behavior in children after witnessing some violent actions⁴. They received the aggressive stimuli and acquired the same aggressive pattern they witnessed. Moreover, it has been shown that watching aggressive movies or cartoons evoked aggressive responses in children and potentially laid the foundation for future violent crimes⁴. Research by Wang⁴ proposes that children witnessing media violence will encode this aggressive behavior into their 'script'- behavioral patterns learned through observation of others' behavior. If, supposedly, an individual was raised with positive reinforcement for aggressive tactics obtained while witnessing media aggression and violence, it may predispose them to persistent aggressive behavior over time, which may lead to crimes⁴.

Intervention Therapies for Criminal Behavior

Methods of prevention and correction of criminal behavior are the tools that should be prioritized before it becomes deeply ingrained in an individual's personality¹⁹. It is believed that one of the effective ways to stem the phenomenon of criminal inclinations is through primary prevention projects that help families provide education for their children, detecting the areas where the occurrence of criminality is most frequent and carrying out interventions in the entire territory (schools, families and meeting points).

When the minor exhibits first signs of deviant behavior, which may evolve into criminal behavior later, urgent actions should be undertaken to prevent its development¹⁹. In this regard, the most widespread intervention methods are individual and group psychotherapies, support within educational institutions, clinical settings and families, and specific behavioral analysis therapies.

Behavioral analysis therapies may be used as a psychological intervention treatment to alter the criminal elements in the behavior of offenders²⁰. It is crucial to choose an appropriate intervention therapy that would define the needs of offenders and assess the risk factors. A study by Çankaya²⁰ found that almost all intervention therapies are based on a model called RNR, which stands for Risk, Need, and Responsivity, and adhere to the main idea of the model- a thorough evaluation of the target group must be carried out to create an effective intervention program. The risk concept implies the importance of identifying high-risk offenders through an accurate assessment of criminal activity. The need principle is all about determining criminogenic needs and planning for the distribution of therapy. Lastly, the responsivity concept examines how offenders are treated during the intervention programs, prioritizing their talents, strengths, learning preferences, and motivation to comply with the program. This concept is divided into two groups: 1) general—modifying behavior via cognitive social learning strategies; 2) specific— to successfully deliver the treatment program, personality, bio-social traits, and physical and mental capabilities of the offender should be taken into account²⁰.

There are several intervention therapies based on the RNR model:

Cognitive Behavioral Therapy (CBT) concentrates on altering the individual's thinking patterns and is exceptionally beneficial in identifying irrational thinking and building rational thinking⁴. This therapeutic method is widely used and proved to be successful as it interferes with the misconceptions about criminal and violent behavior and corrects them, therefore addressing the roots of criminal behavior. Furthermore, the application of CBT on children proved the reduction of their violent traits and anti-social behavior⁴. CBT addresses the underlying cognitive and behavioral factors that contribute to criminal behavior through cognitive restructuring, skill building, behavioral activation, and relapse prevention.

Following the application of CBT, *Schema Therapy (ST)* is a more integrative treatment strategy to address criminal propensities beyond the conventional cognitive-behavioral treatments²¹. It combines elements from different therapies, such as CBT, Gestalt, object relations, constructivism, and attachment. It is applied to patients considered particularly difficult to treat (i.e., patients with serious mental health problems). This therapeutic approach is especially applicable to patients who fail to adapt to CBT due to difficulties accessing their emotions and cognitions. By challenging and reframing maladaptive beliefs, healing past trauma with imagery rescripting, and encouraging healthier coping strategies, Schema Therapy reduces criminal behavior and fosters prosocial functioning²¹.

While CBT and ST are generic in their application, *Dialectical Behavior Therapy (DBT)* was initially designed specifically for females with borderline disorder who frequently exhibited suicidal tendencies²⁰. This therapy has been shown to be effective in treating symptoms of self-harm behavior, anger management, emotional lability, and constant feelings of emptiness. With its focus on emotional regulation, mindfulness, distress tolerance, and interpersonal relationship enhancement, DBT contributes to criminal prevention and can be used in forensic settings for several reasons. Firstly, it primarily works for offenders with a prevalence of personality disorder; secondly- it is a more comprehensive and holistic form of CBT, being even more resultant in treating distorted cognition.

Moving beyond the scope of previous therapies, *Restorative Justice* is another type of intervention therapy that states that meeting victims and offenders may be efficient for criminals to realize the terrible consequences of their actions²⁰. It should supposedly activate the feeling of empathy and trigger a sense of shame and remorse, which would stop criminal actions from happening again. However, this method has its limitations. Firstly, it is not suitable for all offenders, especially its ineffectiveness is evident for psychopathic individuals who are unable to understand others. Secondly, its application may have detrimental impacts on victims, aggravating the traumatic effects caused by the offender. Therefore, it should be considered that this method has a narrowed focus on less serious offenders.

Along with these commonly recognized types of intervention treatments, there are also some other less known, such as family-type communities for minors, which are also found to be effective as a form of intervention¹⁹. This intervention implies the increased chances of recovery once a minor is removed from negative contexts and put into a family mimic environment that fosters emotional support, positive role models, skill development, therapeutic interventions, and effective supervision. In addition to family-type communities, the 'street education' type of intervention, practiced primarily in the urban fringes, is focused on the interception of all deviant minors in a certain area to "allow them to learn about the services that can support them towards the path of legality"¹⁹.

Overall, early interventions in all their forms and behavioral analysis therapies promise to improve deviant behaviors with future prospects for criminality, especially in minors, thus addressing the root causes of criminal behavior. By focusing on individualized treatment plans aligning with the unique needs of each person, these interventive approaches help mitigate risk factors during formative years and foster positive behavioral development with ultimate contributions to long-term public well-being and safety.

Conclusions

The term "criminal behavior" is used in various disciplines, including law, criminology, psychiatry, sociology, and psychology, and refers to a specific type of conduct leading to illegal acts that infringe law and may vary based on a scale of severity and seriousness with some adverse implications for others. Crime is an intricate phenomenon, the root causes of which are associated with childhood and adolescence. Parent-child relationships are the interactions between the offspring and parents, which critically influence cognitive development by providing positive and negative types of parenting. Moreover, as this review reveals, parenting styles play a significant role in defining the parent-child relationships and child's characteristics, with authoritarian parenting identified as the most adverse, producing children with delinquent behavior. In contrast, authoritative parenting is admitted to be the healthiest and most unproblematic. This review notes that the delivery of discipline, which has three types of practices (power assertion, low withdrawal, and induction), also matters when it comes to the healthy upbringing of a child. There are some real-life examples of criminals who have suffered from poor parenting, experienced maltreatment in childhood, and had weak parent-child relationships, such as Richard Barry Randolph, Billy Milligan, and Jeffrey Dahmer. Results evidence that environmental factors of community, neighborhood influence, peer influence, educational settings, academic performance, and exposure to violent media have a massive role in the origination of criminal behavior. School and academic performance impact the occurrence of criminal inclinations in children, as constant low performance in school is strongly associated with future antisocial behavior. Peers have an immense influence on children; thus, connections with delinquent peers lead to delinquent behavior. However, the offending under peer influence may be limited to adolescents—adolescents limited offending, while the long-lasting criminal career is referred to as 'life-course-persistent offending.' As this review highlights, communities and neighborhoods with structural problems usually report higher rates of crime, having a link between the social organization in neighborhoods/communities and criminal behavior in adolescents. Violent media exposure leads to the acquisition of aggressive patterns, which may be encoded into 'script' and, if positively reinforced, lead to crime. Notably,

there are numerous intervention therapies and correctional tools carried out to provide treatment for offenders, interfere with deviant behavior in the early stages in children, and address the root causes. Among these, behavioral analysis therapies are applied as psychological intervention treatments and include Cognitive Behavioral Therapy (CBT), Schema Therapy (ST), Dialectical Behavior Therapy (DBT), and Restorative Justice. The effective application of these therapeutic methods is ensured by addressing the specific root causes, such as dysfunctional family dynamics or childhood trauma, with individualized approaches, considering the needs and nuances of each patient. Further research should explore the longitudinal studies that assess the long-term efficiency of these therapies when combined with social, cultural, and environmental factors in shaping their outcomes. When properly implemented, intervention therapies identify and tackle the underlying relational and psychological issues behind criminal tendencies. By improving emotional well-being and prosocial behavior, these intervention strategies promote rehabilitation and reduce crime rates and recidivism, eventually fostering safer and healthier communities.

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