Early Psychological Trauma and Its Relationship with Criminal Behavior in Youth: The Mediating Roles of Empathy and Impulsivity

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Abstract: Background: Early psychological trauma has been consistently identified as a significant developmental risk factor associated with a range of adverse psychological and behavioral outcomes, including criminal behavior. However, the psychological mechanisms through which childhood trauma contributes to criminal tendencies remain insufficiently understood. In particular, empathy and impulsivity have been proposed as important factors that may explain this relationship.

Objective: This study examined the relationship between early psychological trauma and criminal behavior among youth and investigated the mediating roles of empathy and impulsivity in this relationship.

Methods: A cross-sectional correlational design was employed. The study included 232 participants (M = 28.0 years, SD = 5.3) who completed standardized measures of early psychological trauma, empathy, impulsivity, and criminal behavior. Data were analyzed using Pearson correlation coefficients, multiple regression analysis, and bootstrap mediation analysis.

Results: Early psychological trauma was positively associated with criminal behavior ($r = .64$, $p < .001$) and impulsivity ($r = .57$, $p < .001$), whereas it was negatively associated with empathy ($r = -.53$, $p < .001$). Regression analyses indicated that empathy negatively predicted criminal behavior ($\beta = -.46$, $p < .001$), while impulsivity positively predicted criminal behavior ($\beta = .53$, $p < .001$). Mediation analysis revealed significant indirect effects of early psychological trauma on criminal behavior through both empathy and impulsivity, supporting a partial mediation model. The indirect pathways accounted for a substantial proportion of the total effect.

Conclusion: The findings suggest that early psychological trauma contributes to criminal behavior both directly and indirectly through reduced empathy and increased impulsivity. These results support developmental models emphasizing the role of socio-emotional and self-regulatory processes in the pathway from childhood trauma to criminal behavior. The findings further highlight the importance of trauma-informed prevention and intervention programs that strengthen empathic functioning and self-regulation among trauma-exposed youth.

Keywords: Early psychological trauma; Criminal behavior; Empathy; Impulsivity; Mediation analysis..

Introduction

Criminal behavior among youth remains one of the most significant concerns in developmental psychology and criminology because of its substantial consequences for individuals, families, and society. Contemporary developmental criminology conceptualizes criminal behavior as the outcome of cumulative developmental processes in which biological, psychological, and environmental factors interact across the lifespan. Rather than emerging suddenly, antisocial and criminal behaviors develop progressively through developmental pathways shaped by early life experiences and psychosocial...

adjustment (Moffitt, 1993; Farrington, 2005; Loeber & Stouthamer-Loeber, 1998). Consequently, identifying the developmental antecedents of criminal behavior has become a major objective of contemporary research

From that developmental angle, early psychological trauma has become one of the most noticeable risk factors associated with later maladaptive outcomes. Childhood trauma really covers a wide array of harmful experiences, like physical abuse, emotional abuse, sexual abuse, neglect, seeing domestic violence, parental separation, and other steady forms of chronic strain. These experiences can impair emotional, cognitive, and social development in ways that raise the odds of psychological and behavioral problems later.

Work based on the Adverse Childhood Experiences (ACE) framework keeps showing, generally repeatedly, that childhood maltreatment links to a higher likelihood of aggression, substance misuse, delinquency, and criminal behavior throughout adulthood and even at earlier life stages (Felitti et al., 1998; Widom, 1989; Li et al., 2023). Long term studies, too, often report that people who were exposed to abuse and neglect during childhood are more likely to appear in criminal activity in adolescence or adulthood compared with those who weren't maltreated (Widom, 1989; Peltonen et al., 2020). In other words, early psychological trauma seems to act as an important developmental precursor, for later criminal and antisocial behavior. The notion that childhood trauma relates to criminal conduct is backed by a few theoretical explanation's lines. Developmental psychopathology models suggest that traumatic experiences that occur during critical developmental windows can disturb emotional regulation, psychosocial functioning, and coping abilities, and so that increases the odds of later maladaptive behavioral tendencies (Cicchetti & Rogosch, 2001).

Then attachment theory adds that children who experience neglect, abuse, or inconsistent caregiving might end up with insecure attachment orientations, which can derail emotional regulation, day to day interpersonal functioning, and later behavioral adjustment (Bowlby, 1969, 1980). Trauma theory also suggests that harsh experiences can reshape emotional, cognitive, and identity processes, increasing a person's vulnerability to aggression and social deviance (Herman, 1992). Also, from a neurobiological point of view, childhood trauma can generally shape the way brain systems take form that are associated with emotional regulation and executive control, mainly in the prefrontal cortex and the limbic system, and this can then show up as impulsivity, aggression, or just weaker decisions (Van der Kolk, 2005; Lippard & Nemeroff, 2020).

Taken together, these frameworks suggest that trauma effects don't stay as short term distress, they can feed into longer term maladjustment, including criminal pathways.

Newer findings also underline how common childhood trauma is among populations that are involved with the justice system. One systematic review with more than 420,000 participants found that exposure to childhood maltreatment noticeably increases the likelihood of later criminal behavior and delinquency (Li et al., 2023). Likewise, many juvenile offenders report exposure to multiple adverse childhood experiences, so it seems like cumulative trauma might be right at the core of how criminal pathways form, and develop over time. Peltonen et al. (2020) reported traumatic experiences were associated with violent offending in adolescence, while Madole et al. (2020) showed that childhood adversity was connected with increased aggression and antisocial behavior through different psychological routes. So current research increasingly frames childhood trauma as a major developmental danger factor associated with criminal behavior. Even with all that evidence linking early trauma and criminal behavior, more research suggests you can't explain the connection with direct effects alone. Instead, childhood trauma appears to shape criminal behavior through several psychological mechanisms, where emotional and behavioral functioning changes across time (Egeland et al., 2002; Cicchetti & Rogosch, 2001). Modern developmental models often emphasize that these adverse experiences affect core psychological processes, which then raise risk for maladaptive outcomes. Because of that, a big aim in recent criminology and developmental work has become figuring out exactly which mediating mechanisms account for these relationships, and how.

Among the psychological variables receiving increasing attention in the literature is empathy. Empathy, primarily, is the ability to understand, share, and respond in a fitting way to other people's

emotional lives (Decety & Jackson, 2004; Davis, 1983). Empathy is widely regarded as a fundamental component of social functioning and moral development. Hoffman (2000) went further, describing empathy as some broadly moral regulator that can curb aggressive impulses and also helps prosocial behavior along. And , fitting with that angle, substantial empirical evidence indicates that when empathy is higher, aggression, violence, delinquency, and criminal conduct tend to be lower, while empathy deficits go together with more antisocial behavior (Carlo et al., 2011; Crick & Dodge, 1994; Ritchie et al., 2022; Gubbels et al., 2024; Fontaine et al., 2022). Notably, empathy has also been described as one of the strongest protective factors when it comes to preventing antisocial development during adolescence (Gubbels et al., 2024).

Also, the connection between childhood trauma and empathy has been drawing more and more empirical attention lately, broadly attracting increasing empirical interest. A pretty common idea is that traumatic experiences can interrupt emotional processing systems and, in turn, generally disturb how empathic abilities start taking shape. When someone experiences abuse, neglect, or violence their ability to notice and respond in a fitting way to other people s emotional states may get smaller, or at least become less reliable. After that, it can lead toward aggression along with other, broader social troubles being more likely to show up (Blair, 2018 Walters, 2024; Zhang et al., 2024). Meta-analytic work tends to line up with this: they repeatedly report that childhood maltreatment is associated with lower empathy, plus weaker socio-emotional functioning (Zhang et al., 2024). So, empathy may end up acting as a key pathway, explaining how early trauma generally funnels into later criminal behavior.

Another psychological characteristic that is strongly associated with criminal outcomes is impulsivity. Impulsivity is usually framed as a tendency to act quickly, without really weighing the consequences, and it's often taken to reflect trouble in self-control, behavioral regulation, and decision-making systems (Barratt, 1994; Evenden, 1999). In criminology work, impulsivity keeps showing up as one of the stronger predictors for both delinquent and criminal conduct. From the General Theory of Crime angle, low self-control is treated as a central driver of crime (Gottfredson & Hirschi, 1990). In a similar direction, Moffitt (1993) treated impulsivity as a hallmark of individuals on life-course-persistent antisocial paths, and Caspi et al. (2002) showed that poor self-control in childhood can forecast later criminal involvement. More recent evidence keeps supporting impulsivity as part of the explanation for aggression, violence, substance use, and criminal behavior (Miller et al., 2019; Schroll et al., 2025).

Research has also, generally pointed to a close connection between childhood trauma and impulsivity. Traumatic experiences can get in the way of emotional regulation and executive functioning, so the person becomes prone to impulsive reactions, and at the same time more likely to make maladaptive decisions. Studies have found that individuals who went through childhood trauma tend to show noticeably higher impulsivity, along with more behavioral dysregulation, compared to those who did not have that history (Teicher & Samson, 2016; Mullet et al., 2022).On the neurobiological side, there's evidence that trauma-related changes in brain circuits involved in emotional regulation and inhibitory control may help explain this relationship, at least partially (Lippard & Nemeroff, 2020). With that in mind, impulsivity can be seen as a major linking mechanism between early adversity, and later criminal behavior.

More recently, researchers have been stressing that integrative explanatory models' matter, like models that can at least look at a few psychological pathways at once. Developmental pathway models tend to argue that the effects of childhood trauma on later behavioral outcomes don't just work via one direct route, but through a generally network of mutually connected psychological processes, not just direct effects alone (Egeland et al., 2002; Cicchetti & Rogosch, 2001). On that same note, several studies have pointed to empathy and impulsivity as mediators, meaning they can pass the influence of adverse childhood experiences onward to delinquent or criminal outcomes (Jackson et al., 2023; Bosetti, 2024; Mullet et al., 2022; Walters, 2024). More lately, updated systematic reviews and meta-analyses generally land on a similar conclusion: childhood trauma contributes to aggression and delinquency through emotional dysregulation, lowered empathy, less effective social functioning, and also higher impulsivity (May et al., 2022; Melamed et al., 2024; Gubbels et al., 2024).

Despite substantial evidence linking childhood trauma to criminal behavior, important gaps remain in the literature. Previous studies have predominantly examined direct associations between childhood trauma and delinquent outcomes or have investigated empathy and impulsivity independently. Although empirical evidence supports the relationships among childhood trauma, empathy, impulsivity, and criminal behavior, limited research has examined the simultaneous mediating roles of empathy and impulsivity within a unified explanatory framework. Consequently, the psychological mechanisms through which childhood trauma contributes to criminal behavior remain insufficiently understood, particularly among youth populations (Bosetti, 2024; Jackson et al., 2023; Walters, 2024; Gubbels et al., 2024).

Accordingly, the present study examines the relationship between early psychological trauma and criminal behavior among youth by testing the mediating roles of empathy and impulsivity. Specifically, the study proposes an integrative developmental model in which childhood trauma influences criminal behavior both directly and indirectly through its effects on empathic functioning and impulsive tendencies. By investigating these pathways simultaneously, the study seeks to contribute to a more comprehensive understanding of the psychological mechanisms underlying youth criminal behavior.

Research Questions:

What is the nature of the statistically significant positive correlation between early psychological trauma and criminal behavior among youth?

What is the nature of the statistically significant positive correlation between early psychological trauma and impulsivity among youth?

What is the nature of the statistically significant negative correlation between?

early psychological trauma and empathy among youth?

What is the nature of the negative effect of empathy and the positive effect of

impulsivity on criminal behavior among youth?

What is the mediating role of empathy and impulsivity in the relationship between early psychological trauma and youth criminal behavior?

Methodology

The present study used a descriptive correlational design, because it helps examine relationships among variables without any experimental manipulation. Mediation analysis using bootstrap procedures was also used to test both direct and indirect connections between early psychological trauma and criminal behavior, while checking the mediating roles of empathy and impulsivity too.

Participants

Participants were recruited from the target population using a stratified random sampling procedure, . The study ended up including 232 participants (M = 28.0 years SD = 5.3) and they represented diverse demographic and educational backgrounds, plus different degrees of exposure to early psychological trauma. Overall, this population seemed suitable for looking into how early psychological trauma, empathy, impulsivity, and criminal behavior fit together.

To boost how representative the sample was, the sampling frame was stratified based on key demographic characteristics, mainly gender and educational level. After that, participants were selected randomly from each stratum, in proportion to how many people were in that group within the target population. This whole procedure was used to decrease sampling bias and to improve external validity, as well as generalizability of the findings.

As for the sample size, it was set following methodological recommendations for mediation and structural equation modeling analyses. Those recommendations stress that you need a large enough sample size for proper statistical power and for stable parameter estimation, , so the model does not unstable parameter estimates. The final sample size was considered appropriate for testing the mediation model that was proposed, and for examining both direct and indirect relationships among early psychological trauma, empathy, impulsivity, and criminal behavior.

Table (1): Demographic Characteristics of the Sample

Variable	Category	Frequency	Percentage
Gender	Male	120	51.7%
	Female	112	48.3%
Age	18–30	98	42.2%
	31–40	89	38.4%
	41–45	45	19.4%

The table (1) shows the sample included 232 participants, and the mean age was 28 years with a standard deviation of 5.3. The split between males and females looks fairly balanced, and most participants fall in the 18–30 group. This seems to point to decent coverage of early adulthood, as a developmental period that is often linked in criminological and psychological work with the appearance of deviant and criminal behaviors. The broader age coverage also adds strength to the findings, since it includes a relatively varied set of ages within youth populations, not only one narrow bracket.

Table (2): Descriptive Statistics of the Study Variables

Variable Range	Mean	Standard Theoretical	Deviation
Psychological Trauma	2.89	0.74	**1–5**
Empathy	3.46	0.68	**1–5**
Impulsivity	3.22	0.71	**1–5**
Criminal Behavior	**2.75**	**0.82**	**1–5**

Table (2) The descriptive results of early psychological trauma was 2.89 (SD= 0.74) which reflects a moderate level of traumatic childhood experiences. The descriptive results of empathy were 3.46 (SD= 0.68). This one is the highest mean among the variables, and it suggests participants generally show higher emotional understanding and responsiveness toward other people. For impulsivity, the mean was 3.22 (SD = 0.71). So, that looks like a moderate-to-high tendency for impulsive behavior. Criminal behavior had a mean score of 2.75 (SD = 0.82), meaning relatively low levels of criminal or deviant conduct in this group, which is consistent with what we might expect in non-clinical or community-based samples. In general, the standard deviation figures indicate reasonable individual differences across the variables, and that supports the idea that the data are suitable for the next steps, like correlational and structural analyses, and also for evaluating the study hypotheses.

Instruments

Childhood Trauma Questionnaire: (CTQ):

Developed by Bernstein & Fink (1998) Abu Ghazal (2011) applied the CTQ in a study meant to examine childhood abuse and neglect experiences among university students, after translating it, culturally fitting it ,and checking the psychometric qualities. In the same spirit, Al-Shammari (2017) used the measure to address the early psychological trauma dimensions (abuse and neglect) and how they relate to psychological disorders in a Saudi sample.

Interpersonal Reactivity: Index (IRI)

Developed by Davis (1983) Morsi (2012) used the IRI in research about empathy and social behavior among youth, after translating and adapting it for the Arab environment. The scale is designed to show how well a person can understand, and also emotionally plus cognitively respond, to other people's feelings through four main dimensions. Similarly, Al-Zoubi (2014) employed the instrument to study empathy and its relationship with social behavior in a Jordanian university sample.

Barratt Impulsiveness Scale: (BIS-11)

Developed by Barratt (1994), Al-Rifai (2016) used the BIS-11 while investigating impulsivity and its association with addictive behavior among youth. Hussein (2018) also applied it in work on impulsivity and aggressive behavior among adolescents, to capture the tendency to act quickly without planning or considering the outcomes.

Criminal Behavior Scale

Self-Reported Delinquency Scale (SRD) Developed by Elliott & Ageton (1980) primarily. Al-Adwani (2013) was the one who used it, to size up deviant behavior with youth, and yes in an Arab setting, after doing some linguistic and cultural fitting. Then Khalil (2015) also took the same generally instrument, in a piece looking at juvenile delinquency and criminal behavior among adolescents, to see how much people end up doing acts that clash with laws and social norms, broadly "behavior violating" everything. For this study, the tools that were used relied on translated versions that were already used before, in Arabic sources, including the CTQ, IRI, BIS-11 and SRD. These measures have been used a lot in Arab research, especially in clinical and social psychology, and the psychometric features were checked again in our sample, in order to confirm that they fit culturally, not just technically.

Reliability and Validity of the Study Instruments

The psychometric appraisal broadly showed that, yes, all the instruments used in the study had satisfactory reliability as well as construct validity. For instance, the Childhood Trauma Questionnaire (CTQ) came out with excellent reliability (α = .91, CR = .93), and its convergent validity seemed adequate (AVE = .58). The Interpersonal Reactivity Index (IRI) also looked strong on reliability (α = .88, CR = .90), and the convergent validity was acceptable (AVE = .54). Likewise, the Barratt Impulsiveness Scale (BIS-11) exhibited high reliability (α = .90, CR = .92) together with adequate convergent validity (AVE = .56). And the Self-Reported Delinquency Scale (SRD) demonstrated satisfactory reliability (α = .87, CR = .89) plus convergent validity (AVE = .52). Overall, every measure stayed above the usual recommended cutoffs for reliability and validity, so that supports that these tools were suitable for the present study.

Table (3): Psychometric Properties of the Instruments (Reliability & Validity)

Average Variance	**Extracted (AVE)**	**Cronbach's Alpha**	**Composite Reliability (CR)**
Childhood Trauma Questionnaire (CTQ)	0.58	0.91	**0.93**
Interpersonal Reactivity Index (IRI)	0.54	0.88	**0.90**
Barratt Impulsiveness Scale (BIS-11)	0.56	0.90	**0.92**
Self-Reported Delinquency Scale (SRD)	**0.52**	**0.87**	**0.89**

Statistical Analysis

Data were analyzed using SPSS version XX. Descriptive statistics (means and standard deviations) were calculated for all study variables. Pearson correlation coefficients were computed to examine bivariate associations among psychological trauma, empathy, impulsivity, and criminal behavior. Multiple regression analyses were conducted to assess the predictive effects of empathy and impulsivity on criminal behavior. Internal consistency and construct validity were evaluated using Cronbach's alpha, Composite Reliability (CR), and Average Variance Extracted (AVE). Mediation effects were examined using bootstrap resampling procedures (5,000 samples), and indirect effects were considered statistically significant when the 95% bias-corrected confidence intervals did not include zero.

Results

3.1. there is a statistically significant positive correlation between early psychological trauma and criminal behavior among youth.

Table (4): Relationship Between Psychological Trauma and Criminal Behavior

Relationship	**Pearson Correlation (r)**	**Significance Level (p)**
Psychological Trauma → Criminal Behavior	0.64**	< 0.001

Table (4) shows that the results back up the first hypothesis. It shows a strong, positive and statistically significant correlation between early psychological trauma and criminal behavior among youth. the data suggests people who faced higher psychological trauma during childhood and adolescence tend to show more involvement in criminal behavior when they are still young. And this can be understood through developmental models in criminal psychology, where it's not like criminal behavior pops out suddenly it sorts of builds gradually, as early adverse experiences stack up and then start reshaping personality, plus emotional regulation.

3.2. ***there is a statistically significant positive correlation between early psychological trauma and impulsivity among youth.***

Table (5): Relationship Between Psychological Trauma and Impulsivity

Relationship	**Pearson Correlation (r)**	**Significance Level (p)**
Psychological Trauma → Impulsivity	0.57**	< 0.001

Table (5) supports the second hypothesis, because there's a statistically significant positive relationship between early psychological trauma and impulsivity. The findings imply that when youth experience early trauma, impulsivity tends to be higher. One way this could be explained is that early trauma, in the literature, is associated with poorer development of executive control capacities in the brain, particularly the zones associated with planning and behavioral regulation.

there is a statistically significant negative correlation between early psychological trauma and empathy among youth.

Table (6): Relationship Between Psychological Trauma and Empathy

Relationship	**Pearson Correlation (r)**	**Significance Level (p)**

Psychological Trauma → Empathy	−0.53**	< 0.001

Table 6 shows a statistically significant negative correlation between early psychological trauma and empathy among participants (r = −0.53, p < .001). These findings indicate that higher levels of early psychological trauma are associated with lower levels of empathy.

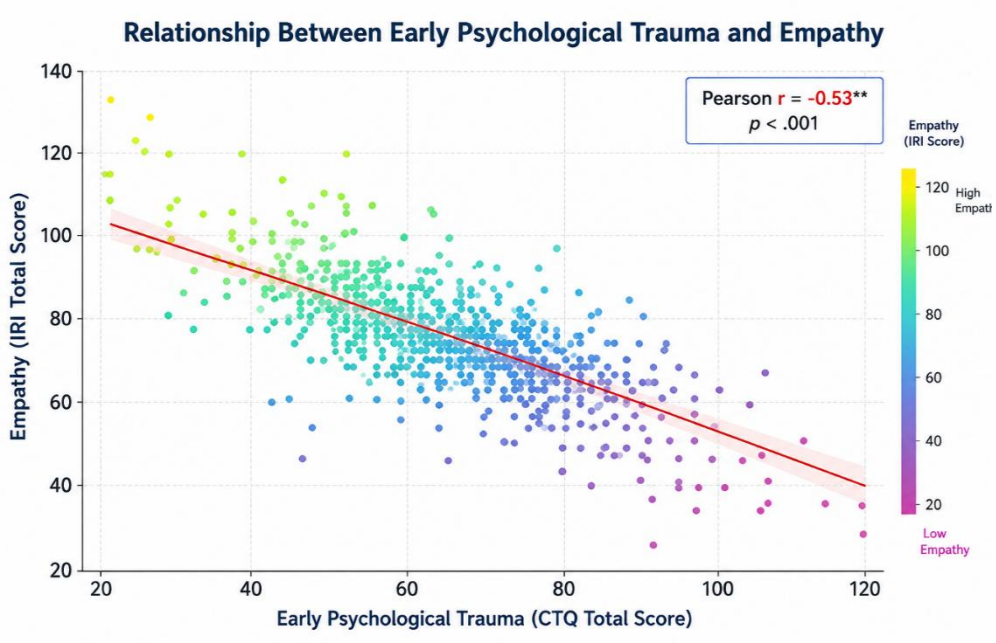

Figure 2. Relationship Between Early Psychological Trauma and Empathy.

The scatterplot illustrates a significant negative association between early psychological trauma and empathy (r = −0.53, p < .001), indicating that higher trauma exposure is associated with lower levels of empathy.

Empathy Negatively Predicts Criminal Behavior, Whereas Impulsivity Positively Predicts Criminal Behavior Among Youth.

Table (7): The Effects of Empathy and Impulsivity on Criminal Behavior

Predictor	Standardized Beta (β)	t-value	Significance Level (p)
Empathy	−0.46	−6.83	< 0.001
Impulsivity	0.53	8.21	< 0.001

Table (7) results back up the fourth hypothesis, showing empathy has a significant negative effect on criminal behavior, and impulsivity has a significant positive effect.

Overall, these findings hint that when empathy is higher it acts like a protective factor that reduces the odds of criminal behavior, while greater impulsivity raises the chances pretty substantially.

3-5 Empathy and impulsivity mediate the link between early psychological trauma and criminal behavior among youth.

Table (8): Bootstrap Mediation Analysis of the Direct and Indirect Effects of Psychological Trauma on Criminal Behavior at a 95% Confidence Level

Path	Standardized Effect	Significance Level
Psychological Trauma → Criminal Behavior (Direct Effect)	0.30	< 0.001
Psychological Trauma → Empathy → Criminal Behavior (Indirect Effect)	0.24	< 0.001
Psychological Trauma → Impulsivity → Criminal Behavior (Indirect Effect)	0.22	< 0.001
Total Effect	0.76	< 0.001

The indirect effects accounted for approximately 60.5% of the total effect.

The results support the fifth hypothesis, meaning there are statistically significant indirect effects of psychological trauma on criminal behavior through empathy and impulsivity, so you do have partial mediation going on.

The findings also show there are both direct and indirect effects of psychological trauma on criminal behavior, and that the indirect parts through empathy and impulsivity make up a large portion of the total effect. Put differently, around 60.5% of the total impact of trauma on criminal behavior is explained via these mediators, which points to strong partial mediation inside the structural model.

Discussion

The present study revealed a statistically significant negative association between early psychological trauma and empathy, indicating that individuals who reported higher levels of childhood traumatic experiences tended to exhibit lower levels of empathic functioning. This finding suggests that adverse developmental experiences may interfere with the acquisition of socio-emotional competencies necessary for understanding and responding appropriately to the emotional states of others., a negative linkage between early psychological trauma and empathy, people who told about more traumatic experiences in childhood also tended to show reduced empathy. This result hints that adverse formative experiences can impairs the building of socio emotional skills that are needed for making sense of, interpreting, and responding appropriately to other people's emotional states. Since empathy sits right in the middle of day-to-day relationships, and moral behavior too, even a drop in empathic capacity might carry real weight for social adaptation and further behavioral development.

Seen from a developmental psychopathology angle, the present findings line up, at least in theory, with the idea that childhood trauma disrupts expected developmental pathways across affective, cognitive, and social areas (Cicchetti & Rogosch, 2001; Cicchetti & Toth, 2005). Kids who grow up in contexts where there is abuse, neglect, rejection, or repeated exposure to prolonged stress usually encounter barriers in forming stable emotional ties and in putting together adaptive strategies for emotional regulation. As a consequence, emotional resources may get funneled more toward self-protection, and survival, rather than toward grasping and reacting to what others feel. Over time, these developmental shifts can dull empathic reactivity and lower attention to interpersonal signals, . These findings can also be read through attachment theory. Bowlby (1969, 1980) argued that secure attachment connections offer a base for emotional safety, interpersonal trust, and healthier socio emotional development. Through many repeated moments with caregivers who respond well, children start to notice emotions, manage distress, and show consideration for other people's needs. Still, when caregiving settings include abuse, neglect, inconsistency, or emotional unavailability, children might form insecure attachment patterns that interfere with emotional insight and with how they function in relationships. So, empathy may not grow as it should, because psychological resources become increasingly directed toward managing threat and uncertainty, not into keeping social connectedness, , .

The findings also broadly support developmental criminology perspectives, especially Moffitt's (2018) developmental model, which says criminal behavior comes about through cumulative

developmental pathways involving several psychological risk factors. In this view, childhood trauma is not treated as a direct cause of criminal behavior, but more like an early developmental risk factor, that then adds to a chain of emotional, cognitive, and behavioral changes , progressively , over time. Reduced empathy may show up as a mechanism too, through which traumatic experiences raise vulnerability to maladaptive and antisocial outcomes. Since empathy works as a strong protective factor that encourages prosocial behavior and blocks aggression (Hoffman, 2000), any disruption in empathic development could make behavioral problems and social misfit more likely.

Also, the current findings line up with earlier empirical evidence, in a pretty direct way. Walters (2024) reported that people with childhood trauma histories had lower empathy levels and were more involved in antisocial behavior. Likewise, Zhang et al. (2024) found childhood maltreatment was negatively linked to empathic functioning, and positively linked to aggressive behavior. In addition to that, meta-analytic evidence suggests empathy is among the most potent protective factors against aggression, delinquency, and criminal behavior, while empathy deficits are repeatedly connected with externalizing problems and antisocial conduct (Ritchie et al., 2022; Gubbels et al., 2024). The fact that the present results match earlier work strengthens the idea that empathy really does act as an important developmental route tying childhood trauma to later behavioral outcomes. A key contribution of this study is that it points to empathy as a possible explanatory mechanism inside the link between early psychological trauma and criminal behavior. Previously, much work has focused on the direct effects of trauma on delinquency and antisocial behavior, but here the findings instead back more modern developmental models, meaning traumatic experiences may influence outcomes by disrupting core socio-emotional processes (Egeland et al., 2002; Jackson et al., 2023; Bosetti, 2024). This outlook gives a broader explanation of how adverse childhood experiences end up feeding into behavioral maladjustment. From a practical view, the findings generally underline how much trauma-informed interventions matter, not just for lessening trauma-related symptoms but also for building empathic functioning, and socio emotional competencies a bit more directly. So, programs that aim to boost emotional awareness, perspective taking, interpersonal understanding, and emotional regulation may help dampen the tough developmental fallout linked to childhood trauma and also lower the chance of later behavioral issues (Davis, 1983; Joyner & Beaver, 2023).

Taken together, the results primarily suggest that early psychological trauma can erode empathic development through emotional, cognitive, and neurodevelopmental routes, like across multiple “lanes” at once. Diminished empathy seems to work as a key psychological mechanism, through which adverse childhood experiences affect later behavioral adjustment. Overall, these findings support current developmental and trauma-informed models of criminal behavior, and they put emphasis on the need to actually address socio-emotional functioning within prevention and treatment efforts for youth who have been exposed to trauma.

Conclusion:

The present study aimed to investigate direct and indirect effects of early psychological trauma on criminal behavior in youth, with a particular focus on the mediating role of empathy and impulsivity. The findings indicated that early traumatic experiences form a meaningful developmental risk factor that is associated with greater criminal tendencies. At the same time, empathy and impulsivity appeared as key psychological mechanisms through which trauma influences later behavior. The findings also confirmed that exposure to early trauma is associated with reduced empathy and increased impulsivity, both of which are significantly related to is associated with reduced empathy and elevated impulsivity, and both are linked in a significant way with criminal behavior. Empathy, in particular, worked as a protective factor that lowers the likelihood of delinquent and aggressive conduct, while impulsivity worked as a risk factor, raising the chance that youth become involved in criminal activity. In addition, the mediation analysis suggested that a substantial part of the trauma–criminal behavior relationship happens indirectly through these psychological variables, which supports contemporary developmental plus integrative models of criminal behavior. Overall, these findings add to a growing body of work that argues criminal behavior shouldn’t be seen only as a legal issue or a narrow behavioral matter. Rather, it should be seen as a result of complex

developmental, emotional and psychosocial processes induced by early adverse experiences. The study highlights the need for multidimensional preventive and therapeutic approaches that address both emotional deficits and self-regulation problems in traumatized youth. In conclusion, the present study provides empirical support for an integrative explanatory framework connecting early psychological trauma, empathy, impulsivity, and criminal behavior. This framework may inform future psychological interventions, prevention programs, and evidence-based policies to decrease youth criminality and to promote healthier psychosocial development.

Recommendations

Based on the findings, early identification of youth exposed to psychological trauma is strongly recommended. Prevention and intervention programs should incorporate trauma-informed approaches that strengthen empathic functioning and self-regulation skills. Educational institutions and mental health services should integrate systematic screening and support programs for trauma-exposed youth. Future research is encouraged to employ longitudinal designs and examine additional mediating variables, such as emotional regulation, resilience, and social support, to provide a more comprehensive understanding of the developmental pathways leading to criminal behavior.

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