

Association between callous-unemotional traits, aggression and impulsivity among male children in conflict-with-law (Juveniles): An empirical investigation

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ABSTRACT

Children-in-conflict-with-law (juveniles) are often at risk for re-offence and in recent times efforts are being put forth to identify potential risk factors for recidivism. One risk factor that has gained significant interest is the presence of callous-unemotional traits (CU) among juveniles. Current study examined the associations between callous-unemotional traits, peer aggression and impulsivity in a sample of 120 adolescent boys, aged between 14 and 18 years, from two observation homes at Kerala. The results confirmed the association between callousness and antisocial behaviour, while unemotional traits were found to be associated with impulsivity. We found a strong association between callous-unemotional traits with aggression, as well as between callousness and impulsivity traits. Our investigation of callous-unemotional traits confirms evidence from other studies showing the relevance of the traits for antisocial behaviour, risk for recidivism and psychopathology.

Keywords: Aggressive and antisocial behavior, callous-unemotional traits, impulsivity, recidivism.

INTRODUCTION

Adolescence is marked by an increased susceptibility to engaging in risky behavior, attributed to a disparity between the inclination for novelty and sensation-seeking, which typically intensifies during puberty. This heightened proclivity persists until early adulthood, where the development of self-regulatory competence gradually matures. Moreover, adolescents often exhibit a propensity to challenge social and moral norms, occasionally breaching them and becoming involved in criminal activities. The pinnacle of antisocial behavior rates is observed during adolescence (Billen et al., 2022; Hirschi & Gottfredson, 1983; Piquero, 2008; Piquero et al., 2003). One plausible explanation for this association between adolescence and transgressive behavior lies in their perception of Conduct that is antisocial as legitimate and acceptable (Gómez & Durán, 2021a, 2021b). India, with the highest number of children globally, comprises approximately 40 percent of its population (Nandhitha et al., 2018). The ratio of children to adults (0-6 years) decreased from 927 girls per thousand men in 2001 to 919 females per thousand males in 2011, which is a worrying fall, according to the 2011 Census of India. However, the state of Kerala exhibits an improvement in child sex ratio from 960 in 2001 to 964 in 2011. Malnutrition stands as a significant challenge for Indian children, as indicated by UNICEF statistics, where 20 percent of children under the age of five suffer from wasting due to acute under-nutrition. Disturbingly, forty-eight percent of Indian children under five suffer from stunted development as a result of chronic under nutrition, and forty-three percent are underweight, these figures translate to 61 million children. Notably, India contributes to over 30 percent of

the world's stunted children (UNICEF India, 2018). Several legislative measures in India are specifically crafted to safeguard the welfare of children. Among these are the Child and Adolescent Labour (Prohibition and Regulation) Act of 1986, the Juvenile Justice (Care and Protection of Children) Act of 2000, the Prohibition of Child Marriage Act of 2006, the Right of Children to Free and Compulsory Education Act of 2009, and the Protection of Children from Sexual Offences Act of 2012. These laws collectively aim to ensure the well-being, rights, and protection of children across various aspects of their lives, encompassing issues such as child labor, juvenile justice, child marriage, access to education, and protection against sexual offenses. Through these legal frameworks, India seeks to create a comprehensive and protective environment for its children, acknowledging their vulnerabilities and providing mechanisms for their care and development. Among these legislations, the Juvenile Justice (JJ) Act emphasizes the protection and care of adolescents in need of care and protection or who are in legal trouble (Tiwari, 2021). According to the National Crime Records Bureau (NCRB) report for 2022, there were 30,555 cases registered against juveniles, indicating a 2.0% decrease from 2021 (31,170 cases). The overall crime rate also declined from 7.0 in 2021 to 6.9 in 2022. Notably, 78.6% (29,690 out of 37,780) of the juvenile offenders in confrontation with the law in 2022 were between the ages of 16 and 18. These juveniles were apprehended based on charges specified in the Indian Penal Code (IPC) and Special and Local Laws (SLL). Due to its detrimental and expensive impact on individuals, families, communities, and society at large, the involvement of adolescents in criminal activity is a serious problem (Lynch et al., 2022). Despite a general decline in the overall rate of adolescents participating in criminal behavior over the last two decades, there is a need for a more profound understanding of this subgroup, considering the fact that individuals who commit crimes again frequently have enduring deficits in their social, professional, mental, and educational spheres. The recognized negative outcomes linked to criminal behavior during adolescence underscore its centrality as an area of concentration for researchers and mental health specialists (David-Ferdon et al., 2015).

Efforts to categorize youths involved in criminal reoffending into meaningful subgroups have taken various approaches, with the most widely acknowledged differentiation being based on the developmental onset pattern proposed by Moffitt (1993). This distinction, which classifies individuals into those with an early onset versus a late onset, has gained significant research support and integrated across the most contemporary iteration of Diagnostic and Statistical Manual of Mental Disorders (DSM-V). More specifically, it contrasts youths who initiate criminal behavior during adolescence (adolescent-onset), typically ceasing such behavior upon reaching adulthood, with those who's antisocial behavior initiated in childhood (childhood-onset) and tends to persist during adulthood. Moffitt's (1993) the term "adolescent-onset subtype" refers to young people whose criminal conduct coincides with puberty and is associated with a marked rise in a number of maladaptive outcomes, including risk-taking in sexual activities, drug and alcohol abuse, and delinquency (Caspi & Moffitt, 1995). Moffitt and Caspi's theoretical framework (2001) adds a hypothesis that suggests children who fall under the childhood-onset category engage in criminal activity through a transactional process that involves their individual vulnerabilities specifically, neurophysiological impairments as well as the difficulties they face as parents in a family setting (Moffitt et al., 1996). This transactional model of development holds that a child's behavior and different parenting

aspects have an ongoing reciprocal impact on the child's growth. As a result, it is hypothesized that these children's neurophysiological abnormalities predict the quality of parenting they get, but that parenting quality also exacerbates pre-existing behavioral vulnerabilities in the kid. Through repetition, vulnerabilities are reinforced and made worse, which has an adverse effect on a person's ability to adjust to life and possibilities (such as involvement in prosocial extracurricular activities, schooling, etc.) as they get older (Moffitt et al., 1996). Researchers have continuously focused in comprehending this phenomenon because of the high frequency of antisocial conduct and criminal reoffending among this group. Experimental research has revealed that young person's displaying callous-unemotional (CU) qualities are a unique cohort from other young people involved in criminal activities (Frick et al., 2014b). They are proposed to be a distinct subgroup within the early-onset category (Frick et al., 2006). Community samples, juvenile justice settings, and clinically referred children have all shown this differentiation (Squillaci & Benoit, 2021). Individuals that possess CU qualities tend to have significantly negative consequences, participating in different types of criminal activities and having a higher chance of committing crimes again (Frick, 2012; Moffitt et al., 1996; Squillaci & Beniot, 2021). Furthermore, researchers have identified variations in individual characteristics (including genetic, temperamental, emotional, and cognitive factors) and associated risk factors (such as parental and peer influences) that distinguish youths with Callous-Unemotional (CU) traits from those without these traits. As a result, researchers continue to investigate this particular group, with the goal of devising interventions that can successfully alleviate their increased risk of encountering problematic life trajectories.

Callous-unemotional (CU) traits are associated with aggressive behaviour's, defined by a general lack of feeling, a disdain for social conventions, as well as an absence of remorse (Frick et al., 2018). Adolescents with CU features are more aggressive than their peers (Lozier et al., 2014; Urben et al., 2018) and believe that using aggressiveness to settle disputes is a constructive and appropriate way to deal with conflict (Hitti et al., 2019; Marsee & Frick, 2007). Furthermore, individuals with CU traits do not experience guilt for their aggressive actions and exhibit unaware of the potential consequences of their actions for punishment (Frick et al., 2014).

This study sought to investigate the connections among callous-unemotional traits, aggression, impulsivity, and socio-demographic factors within a sample of 120 individuals classified as Conduct Disorder with Callous-Unemotional Traits (CCLs). Examining the connections between callous-unemotional traits, aggression, and impulsivity concerning the types of crimes committed and the frequency of offenses among adolescent offenders is thought to deepen our understanding of criminal behaviour. This analysis aims to shed light on how these factors interplay and contribute to the overall understanding of why adolescents engage in criminal activities. By exploring these relationships in the context of criminal typologies and offense frequency, researchers anticipate gaining valuable insights into the underlying dynamics and motivations that drive criminal behaviour in this demographic. Current research aims to furnish evidence supporting the development of intervention and treatment strategies, potentially facilitating the social reintegration of adolescents entangled with the legal system.

METHODOLOGY

Participants

The criteria for inclusion comprised male adolescents exhibiting both Conduct Disorder and Callous-Unemotional Traits (CCLs) who were housed in juvenile detention center's. As a result, 120 adolescent males from four detention facilities (Observation Homes) in Kerala agreed to participate in our study. The age range of the participants was from 14 to 18 years, with 33.6% falling into the initial age group (14 to 16 years), while the larger portion (66.4% of the total) belonged to the subsequent age group (17 to 18 years).

Measures

- **Inventory of Callous-Unemotional Traits (ICU, Frick, 2004):** The evaluation of Callous-Unemotional (CU) traits utilized the 24-item Inventory of Callous-Unemotional Traits (ICU, Frick, 2004), a tool designed for a comprehensive assessment of CU traits. This instrument was created based on the CU subscale of the Antisocial Process Screening Device (APSD, Frick & Hare, 2001), which, despite a limited number of items, demonstrated reasonable internal consistency across various studies. The ICU comprises half positively and half negatively worded items, presented on a 4-point Likert scale ranging from 0 – "not at all true" to 3 – "definitely true." To calculate the total score, the positively worded items are reverse-scored, and the sum of all items is computed. Factor analysis of the scale revealed a tree-factor bifactor model, with items loading on three subfactors: *Callousness* (eg., "I do not feel remorse when I do something wrong", "I seem very cold and uncaring to others", "The feelings of others are unimportant to me"), *Unemotional* (eg., "I do not show my emotions to others", "I hide my feelings from others") and *Uncaring* (eg., "I care about how well I do at school or work", reverse coded, "I feel bad or guilty when I do something wrong", reverse coded), all loading on a more general callous-unemotional factor. In this present investigation, the ICU demonstrated its validity as a measure for callous-unemotional traits, displaying a commendable internal consistency of .89 for the overall score (Essau, Sasagawa & Frick, 2006). Moreover, it exhibited noteworthy correlations with assessments of conduct problems, aggression, delinquency, and emotional reactivity (Kimonis, Frick, Skeem, Marsee, Cruise, Munoz et al., 2008).
- **Aggression Questionnaire (AQ, Buss & Perry, 1992):** The 29 items of the AQ are offered in a five-point Likert scale, with one representing "extremely uncharacteristic of me" and five representing "extremely characteristic of me." The questionnaire, which is based on component analyses, outlines four widely used subscales: verbal aggression (VA) (five items), physical aggression (PA) (nine items), anger (AN) (seven items), and hostility (HS) (eight items). Greater levels of aggression are indicated by higher scores on the tool. In the sample that was gathered for the current investigation, the alpha coefficient demonstrated high reliability at 0.82.
- **Barratt Impulsiveness Scale, 15-Item Version (BIS):** Impulsivity among children in conflict with law (CCL's) was measured using Barratt impulsiveness scale, 15-item version (BIS). The BIS is a common 15-item self-report measure that examines impulsivity among clinical and non-clinical populations. It is the most often used tool for evaluating impulsiveness and is a questionnaire intended to evaluate the personality/behavioral construct of impulsiveness. Items are rated on a 4-point Likert-type scale (1 =

rarely/never, 2= occasionally, 3= often, 4 = almost always). The 15-item BIS comprises a 3-factor structure (non-planning, motor impulsivity, and attention impulsivity). A total score is calculated by summing all of the items, with 6 of the 15 items inverted because they relate to lower impulsivity (eg, “I plan for the future”). The BIS maintained very good reliability and validity, as well as internal consistency (Marcello, 2007). In the current study, alpha co-efficient showed a good reliability at 0.87 in the collected sample.

Procedure and Statistical Analysis

The data for this study was gathered through face-to-face interviews conducted in-person at the institution (observation homes) providing the service. Each participant's application process took approximately 45 to 50 minutes. Subsequently, the evaluation outcomes were entered digitally in an Excel data matrix. The initial information scrutiny ensured the absence of missing data or incongruent responses with the instrument items. Statistical analysis employed the SPSS version 21 statistical package (IBM Corporation, 2017). An alpha coefficient analysis was employed to examine the internal consistency of scales and subscales (McDonald, 1999). The normality of the data was assessed using the Kolmogorov-Smirnov test. Furthermore, for the factors of impulsivity, callous-unemotional characteristics, and aggressiveness, a descriptive univariate analysis was done. Following this, a descriptive analysis categorized psychological variables based on gender, categories, and criminal typologies. Finally, a correlation analysis was executed using the Pearson 'r' coefficient, and linear regression analysis was applied to predict associations and causality.

RESULTS

Table 1: Descriptive Data Analysis

<i>Demographic Characteristics of the Participants(n=120)</i>				
Sample Characteristics	<i>n</i>	<i>%</i>	<i>M</i>	<i>SD</i>
Age			17.49	0.648
Education				
Below 10 th or 10 th failed	28	23.3		
10 th Pass	50	41.7		
10+2 Incomplete	9	7.5		
10+2 Completed	33	27.5		
Family Status				
Nuclear Family	55	45.8		
Broken Family	26	21.7		
Single Parent				
(Either Parent Lost or separated)	37	30.8		
Orphans	2	1.7		
Number of Crimes Committed				
One time	60	50	1.89	1.249
Two times	35	29.2		
Three times	15	12.5		
Four times	3	2.5		
Five times	3	2.5		
Six times	3	2.5		
Seven times	1	0.8		

Nature of Offense Committed		
Theft, POCSO , NDPS	3	2.5
Murder, Attempt to Murder	3	2.5
Railway Act, NDPS	1	0.8
Theft, POCSO	4	3.3
Theft	38	31.7
Theft, NDPS	6	5
POCSO	13	10.8
NDPS, Hurt	2	1.7
MACT, Attempt to Murder	1	0.8
NDPS	24	20
Hurt	16	13.3
POCSO, Attempt to Suicide	2	1.7
Murder, POCSO	1	0.8
MACT	3	2.5
PDPP	3	2.5
Social Background		
Socially stable	66	55
Socially unstable	54	45
Economic Background		
Financially stable	27	22.5
Financially unstable	93	77.5
Note: <i>n</i> - Frequency, %- Percentage, <i>M</i> -Mean, <i>SD</i> -Standard Deviation		

Table 1 describes the age, education, family status, number of crimes committed, nature of offense committed by the juvenile, and the social and economic background of the juvenile. All the 120 participants were male participants. All the participants were between the age group 15 to 18 ($M=17.49$ & $SD=0.648$), and in their adolescent period. With regard to education of the participants below 10th or 10th failed is $n=28$ with a percentage=23.3, number of participants with 10th pass is $n=50$ with a percentage=41.7, number of participants who have not completed plus two is $n=9$ with a percentage=7.5, number of participants who have completed plus two is $n=33$ with a percentage=27.5. With regard to the family status of the participants, participants belonging to the nuclear family is $n=55$ with a percentage=45.8, participants belonging to broken family is $n=26$ with a percentage=21.7, participants belonging to single parent, with either of the parents lost is $n=37$ and the percentage=30.8 and the number of orphans among the participants is $n=2$ with a percentage=1.7. As far as the number of crimes committed by the children, it was found that, the frequency of one-time offenders is $n=60$ with a percentage=50 ($M=1.89$ and $SD=1.249$). For the 2 time offenders $n=35$ with a percentage=29.2, for three time offenders $n=15$ with a percentage=12.5, for four time crime committed offenders $n=3$ with a percentage=2.5, for the participants who have committed crime for 5 times, $n=3$ with a percentage=2.5, for the participants who have committed crime for 6 times $n=3$ with a percentage=2.5, and for the number of participants committed crime for 7 times $n=1$ with a percentage of 0.8. With regard to the type of crime committed by the 120 participants, 2.5% have committed various crimes coming under theft, Pocsos and NDPS Acts ($n=3$), 2.5% have committed crimes under murder and attempt to murder ($n=3$), 0.8% have committed crimes under railway act and NDPS ($n=1$), 31.7% of participants have committed theft ($n=38$), 5% have committed under theft and NDPS ($n=6$), 10.8 have committed crime

under POCSO Act ($n=13$), 1.7% have been involved in NDPS and Hurt ($n=2$), 0.8% participants have committed crimes under MACT and attempt to murder ($n=1$), 20% of participants have committed crime coming under NDPS Act ($n=24$), 13.3% have committed under coming under Hurt ($n=16$), 1.7 participants have been involved in crime registered under POCSO and attempt to suicide ($n=2$), 0.8 participants have committed crimes under Murder and POCSO ($n=1$), 2.5% have committed crime under MACT ($n=3$) and 2.5 % of participants have committed crime under PDPP Act ($n=3$). Regarding the social background of the participants 55% ($n=66$) are socially stable whereas 45% ($n=54$) of the participants are socially unstable. Data shows that 22.5% ($n=27$) of the participants are financially stable whereas 77.5% ($n=93$) are financially unstable.

Table 2: Correlation between demographic and significant variables of the study

Variables	Age	Education	Family Status	No of Crimes Committed	Nature of Offense Committed	Social Status	Economic Status	Total Score of CUT	Total Score of Aggression Scale	Total Score of BIS-21
Age	1									
Education	.206*	1								
Family Status	-.116	-.037	1							
No. of Crimes Committed	.004	-.299**	.033	1						
Nature of Offense Committed	-.006	.162	-.102	-.409**	1					
Social Status	-.04	-.241**	.209*	.146	-.205*	1				
Economic Status	-.146	-.186*	.438**	.017	-.045	.487**	1			
Total Score of CUT	.019	-.355**	.001	.771**	-.261**	.097	.025	1		
Total Score of Aggression Scale	-.10	-.167	.118	.596**	-.238**	.180*	.028	.646**	1	
Total Score of BIS-21	-.122	-.338**	-.005	.791**	-.287**	.146	.027	.828**	.691**	1

Note: *Correlation is significant at the 0.05 level (2-tailed)

**Correlation is significant at the 0.01 level (2-tailed)

The findings presented in Table 2 reveal a notable proportion of variance among the variables under examination. A statistically significant positive correlation $r=.206$ ($p<0.05$) emerges between the age and education of juveniles. Additionally, a significant negative correlation is observed between education and the number of crimes committed by juveniles $r= -.299$ ($p<0.001$), suggesting that lower levels of education are associated with an increased likelihood of involvement in criminal activities. Furthermore, a significant negative correlation is evident between the nature of the offense and the number of offenses committed by juvenile offenders $r= -.409$ ($p<0.001$). The social status of participants displays a significant negative correlation with educational status $r= -.241$ ($p<0.001$), a positive correlation $r= .209$ ($p<0.005$) with the family status, and a significant negative correlation $r= -.205$ ($p<0.05$), indicating that a juvenile's social status is linked to criminal behaviour. Examining the economic status of the participants had a significant negative correlation $r= -.186$ ($p<0.05$) with the education of the participants and a significant positive correlation $r= .438$ ($p<0.001$) with the family status of the participant. Notably, participants from broken or

single-parent families tend to have lower education levels. The economic status and social status of the participants exhibit a significant positive correlation $r = .487$ ($p < 0.001$) with the social status of the participants. A significant negative score $r = -.355$ ($p < 0.001$) is observed between the total score and the education of the participants, a significant positive correlation $r = .771$ ($p < 0.001$) is observed between the total score and the number of crimes committed by the participants and a significant negative correlation $r = -.261$ ($p < 0.001$) between the total score and the nature of offense committed by the participants of this study. Moreover, the total scores in the aggression scale demonstrate a significant positive correlation with the number of crimes committed $r = .596$ ($p < 0.001$) and a significant negative correlation $r = -.238$ ($p < 0.001$) between the total score obtained in the aggression scale and the nature of the offense committed by the participants. Further analysis indicates the positive correlation $r = .180$ ($p < 0.05$) between the total score of the aggression scale and the social status of the participants who participated in this study. There is a significant positive correlation $r = .646$ ($p < 0.001$) between the total score of the aggression scale and the total score obtained by the participants. As per the above table-2 the total score obtained by the participants while measuring the level of Impulsivity by using BIS-21, it is seen that there is a negative correlation $r = -.338$ ($p < 0.001$) with the education of the participants. There is a significant positive correlation $r = .791$ ($p < 0.001$) between the total score obtained in BIS-21 and the number of crimes committed by the participants. There is a significant negative correlation $r = -.287$ ($p < 0.001$) between the total score obtained for BIS-21 and the nature of the offense committed by the participants, a significant positive correlation $r = .828$ ($p < 0.001$) between the total score of BIS-21 and the total score and a significant positive correlation $r = .691$ ($p < 0.001$) between the total score of BIS-21 and the total score obtained in the aggression scale.

Regression Analysis

Simple linear regression analysis was conducted to evaluate the extent to which demographic variables (age, education, family, social and economic status) as controlled variables, while aggression and impulsivity could predict CUT among sampled CCL's participated in the current study. A significant regression was found ($F = 46.89$ ($df = 6, df(113)$), $p < 0.001$). The R^2 was found to be 0.713, indicating that aggression and impulsivity explained approximately 71.30% of the variance in CUT scores.

Table 3: Standardized beta coefficients for predictors of writing anxiety, among a sample of graduate students at a research-intensive university, according to different regression models

	Model 1		Model 2		Model 3	
	β	p	β	p	β	p
	Adj. $R^2 = .062$		Adj. $R^2 = .551$		Adj. $R^2 = .552$	
Predictors						
Gender	.162	.037*	.158	.004**	.157	.004*
Degree Level	-.153	.040*	-.049	.348	-.055	.290
Language	.297	.031*	.007	.939	-.002	.981
International Status	.093	.504	.025	.793	.017	.864
Prior Exposure	-.013	.864	.107	.041*	.104	.047**
Writing self-efficacy			-.747	.0001***	-.722	.0001***
Emotional Intelligence					-.065	

* $p < .05$; ** $p < .01$; *** $p < .001$

DISCUSSION

Conduct problems among children and adolescents comprise of both external and internal behavioural challenges which pose a threat to the societal norms. Externalizing behaviour's are associated with elevated incidences of both criminal activity and substance abuse as issues that carry into adulthood, resulting in low outcomes in terms of schooling and the economy, diminished interpersonal functioning, and degraded mental and physical health (Todorov et al., 2023; Erskine et al., 2014; Rivenbark et al., 2018). The purpose of the present investigation was to take a glimpse at the link between impulsivity, aggressiveness, and callous-unemotional qualities in CCLs that were divided based on the kind of criminal offense and typology. The socio-demographic results clearly depicted that male respondent's education was a matter of concern with merely 28% boys completed senior secondary schooling. Also, more than 50% of the CCL boys hailed from nuclear family and were being stationed in observation homes due to crimes ranging from theft, NDPS, hurt and POCSO charges. Low economic background is also being reported in the current sample. Social determinants proved to be significant precursor to the crimes which male CCL's might have committed. Additionally, there was a substantial correlation between the amount of crimes committed by CCLs and callous-unemotional qualities. Aggression tendencies and impulsiveness were also reported to be significantly correlated with callous-unemotional traits. Among the characteristics linked to juvenile offenders include a considerable presence of callous-unemotional characteristics, limited ability for perspective-taking, a lack of empathic concern, and an increased reliance on ethical disengagement mechanisms are observed. The results of this study corroborate the research conducted by Cabrol and Székely (2012), Pardini (2011), Paciello et al. (2020), and Domez and Guran (2023), and others that highlight the fact that youths with a history of violence justify using aggression and violence as a justifiable means of resolving conflicts and achieving goals. Further the regression results revealed that aggression and impulsivity explained approximately 71.30% of the variance in CUT scores, thereby implicating a close link between aggressive tendencies and impulsive nature of CCL's, which needs immediate attention (Saha & Gopalakrishnan, 2016).

A few limitations must be taken into account while interpreting the results. First off, it was not possible to properly evaluate the predictive value of these indicators because the conclusions were based on a small sample of observation home data. This is a significant restriction because CU characteristics could be a crucial factor in assessing risk. However, the current study still shows that CU traits are useful in determining risk among a particularly pertinent population of young people who are jailed. Secondly, there are a number of other extrinsic factors that were omitted but might potentially be relevant in assessing the reliability of these assessments (such as anxiety, emotional control, and institutional malfeasance). Future study should incorporate measures of additional variables in order to evaluate these measures using a wider sample, even if we did analyze a number of outcomes.

Finally, the present research provides a substantial input into the understanding of the common connections between impulsivity and aggression and callous-unemotional traits, as well as the variations in these connections depending on the nature and types of offenses. Such an approach helps to distinguish between the variables that should be targeted for intervention when treating juvenile offenders.

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