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Article

Contrasting the Effects of the Escalation Model of Recidivism Risk in Juvenile Offenders on Psychopathic Traits and Psychological Adjustment

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ABSTRACT

Background/aim: Escalation models have been applied to juvenile delinquency across judicial, psychological, criminological, developmental, risk assessment and biological fields. A field study was conducted to examine the effects of the escalation model of recidivism risk levels on psychopathic traits (a clinical and forensic construct) and psychopathology (a non-criminogenic need). **Method**: A total of 239 juveniles, aged 14 to 20 years (M = 16.32, SD = 1.07), 74.1% of whom were boys, participated in the study. Of these, 157 were serving a disposition order in a custodial center, and 82 were serving community orders. The juveniles completed a measure of psychopathology (psychological adjustment) controlling the differential diagnosis of malingering. Additionally, three experienced forensic psychologists assessed each juvenile risk of recidivism (using the YLS/CMI) and psychopathic traits based on interviews and judicial files. **Results**: The findings revealed significant associations between court orders to juvenile custodial centers and academic failure; between juvenile offenders and conduct disorder; between parental history of clinical disorders and recidivism risk; and between parental criminal records and recidivism risk. Impression management was identified in the clinical self-reports of juvenile offenders. Furthermore, the results supported an escalation model, demonstrating a relationship between recidivism risk levels, psychological adjustment and psychopathy. **Conclusions**: The implications for forensic settings, intervention targets, and the development of de-escalation interventions are discussed.

Contrastando los Efectos del Modelo de Escalada de Riesgo de Reincidencia en Menores de Reforma Sobre los Rasgos Psicopáticos y el Ajuste Psicológico

Palabras clave:
Necesidades criminogénicas
Necesidades no criminogénicas
Modelos de desescalada
Evaluación forense
Expedientes judiciales

RESUMEN

Antecedentes/objetivo: Los modelos de escalada se aplicaron a la delincuencia juvenil desde los ámbitos judicial, psicológico, criminológico, del desarrollo, del riesgo y biológico. Se diseñó un estudio de campo con el objetivo de contrastar los efectos del modelo de escalada de los niveles de riesgo de reincidencia en los rasgos psicopáticos (constructo clínico y forense) y la psicopatología (necesidad no criminogénica). **Método**: Un total de 239, con edades comprendidas entre los 14 y los 20 años (M = 16.32, DT = 1.07), de menores de reforma, 74.1% chicos, 157 cumplían una medida en un centro y 82 en la comunidad, respondieron a una medida de psicopatología (ajuste psicológico) controlando el diagnóstico diferencial de simulación. Además, 3 psicólogos forenses con experiencia en evaluación de menores de reforma evaluaron el riesgo de reincidencia de cada menor (YLS/CMI) y los rasgos psicopáticos a través de entrevistas con los menores y el análisis de los expedientes judiciales. **Resultados**: Los resultados mostraron una asociación significativa entre menores de reforma que cumplían una medida en un centro y fracaso académico; entre progenitores con trastornos clínicos y riesgo de reincidencia; y entre progenitores con antecedentes penales y riesgo de reincidencia. Se observó que los menores de reforma manejan la impresión (simulación/disimulación) en los autoinformes clínicos. Además, los resultados prestaron apoyo a un modelo de escalada en los niveles de riesgo de reincidencia con el ajuste psicológico y la psicopatía. **Conclusiones**: Se discuten las implicaciones de los resultados para el contexto forense, los objetivos de la intervención, y para una intervención en desescalada.

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Introduction

In Spain in 2023, 13,022 juveniles (aged 14 to 17) were convicted, resulting in a rate of 6.2 per 1,000 in that age group (9.6 for boys and 2.6 for girls), for a total of 23,642 criminal offenses (Instituto Nacional de Estadística [INE], 2024). The average recidivism rate was estimated at 26.89% (Ortega et al., 2014), with significantly higher rates among juveniles who served custodial sentences in detention centers (±60%) compared to those who served community-based sentences (20%) (Redondo et al., 2012).

The approach to juvenile delinquency from different fields shares the adoption of an escalation model. In Juvenile Criminal Justice, behaviors with criminal liability are classified into three levels: serious, less serious, and minor offenses (Ley Orgánica 1/2015, de 30 de marzo, por la que se modifica la Ley Orgánica 10/1995, de 23 de noviembre, del Código Penal, 2015). Similarly, the clinical-biological system (American Psychiatric Association [APA], 2013) categorizes antisocial and delinquent behavior (conduct disorder) into three levels of severity based on the criteria met and the harm caused to others: mild, moderate, and severe. This perspective of escalation is also applied in moral development psychology, which is strongly associated with antisocial and delinquent behavior: pre-conventional, conventional, and post-conventional stages (Kohlberg et al., 1972). Field studies on antisocial and delinquent behavior have validated these escalation models (Arce et al., 2010, 2011; Smith et al., 2014). Moreover, the most empirically supported intervention model (Andrews & Dowden, 2006; Hanson et al., 2009; Hanson & Morton-Bourgon, 2004; Koehler et al., 2013), the Risk-Need-Responsivity (RNR; Andrews & Bonta, 2024), also adopts an escalation approach in the severity of the risk of reoffending. This risk is linked to the number of criminogenic needs (risk factors causing criminal behavior) to be addressed and the severity of each need. Other needs not directly related to criminal behavior are considered non-criminogenic needs and, according to this rehabilitation model, are not targets for intervention due to their ineffectiveness in reducing recidivism. However, non-criminogenic needs are also linked to recidivism (Maruna, 2004). For instance, psychological adjustment—a non-criminogenic need—has shown an indirect effect on recidivism rates. Thus, the need intervened offenders with psychological maladjustment had higher rates of recidivism than those with psychological adjustment (Arce et al., 2010, 2011; Basanta et al., 2018; Fandiño et al., 2021; Novo et al., 2012). Therefore, interventions addressing both criminogenic and non-criminogenic needs enhance the effectiveness of the intervention, significantly reducing recidivism rates (Novo et al., 2012).

Additionally, the R-N-R model incorporates de-escalation as intervention target, establishing a correspondence between risk level and intervention intensity: intensive intervention for high-risk offenders; moderately intensive intervention for moderate risk offenders and low intensity —or no— intervention for low risk offenders. Evidence based research (Andrews & Dowden, 2006) supports the model's prescription of focusing intervention efforts on high-risk offenders, as they benefit more from treatment (Andrews et al., 2006). However, this evidence has several methodological flaws undermining the strength of such inferences (Basanta et al., 2018; Bijlsma et al., 2024; Duan et al., 2024; Hanson et al., 2009). Furthermore, these findings and inferences are counterintuitive. Cognitive-behavioral interventions, the standard and most effective programs within the R-N-R rehabilitation model, target antisocial cognitions and delinquent behaviors that are often resistant to modification and intervention (Maruna, 2004; Novo et al., 2012). Consequently, lower success rates are expected for high-risk offenders due to the greater number and severity of needs to be intervened.

Psychopathy, a clinical and forensic construct, is strongly associated with antisocial behavior and delinquency, reoffending, and violent recidivism (Anderson & Kiehl, 2014; Edens et al., 2006). As such, psychopathic traits constitute real criminogenic needs, though not are explicitly listed among the central eight criminogenic needs targeted for intervention (Andrews & Bonta, 2024). The modern conceptualization of psychopathy is based on Cleckley (1941) 16 diagnostic criteria for psychopathy. Empirical definitions (as measured by psychometric instruments) share convergent validity across two factors: affective and antisocial (Salvador et al., 2017). Different versions (original, revised, youth, screening) of the Psychopathy Check List (Forth et al., 2003; Hare, 2003; Hart et al., 1995) are considered the gold standard for measuring psychopathy (Edens et al., 2006; Salvador et al., 2017; Veal & Ogloff, 2021). The PCL structure psychopathy into four facets (affective, interpersonal, behavioral and antisocial) in a first order factorial analysis, grouped into two factors (interpersonal/affective factor and social deviance factor). Although the PCL and its derivate tools have been employed as proxies for measuring recidivism risk, they are not actually a risk measure (Hare, 2021).

Based on the current literature, we designed a field study aimed to analyze the association between levels of recidivism risk (low, moderate, and high) and psychological adjustment (a non-criminogenic need), impression manipulation (i.e., simulation and dissimulation), and psychopathic traits.

Method

Participants

A total of 244 juvenile offenders participated in the study, of which 5 were excluded due to invalid protocols, leaving a final sample of 239 juveniles, mostly male (74.1%). Of these, 82 (22.0%) were serving community-based measures and 157 (42.0%) were in detention centers. The age range was between 14 and 20 years ($M = 16.32$, $SD = 1.07$). Regarding criminal recidivism, 71 (29.7%) were classified as recidivist; and 60 (25.1%) were classified as low risk of recidivism based on the YLS/CMI, 93 (38.9%) as moderate risk, and 86 (36.0%) as high risk (none were classified as very high risk).

Design and Procedure

The research methodology was of a quasi-experimental type with archival data of forensic setting. Upon analyzing the design's sensitivity for a sample size of 239 subjects and a moderate effect size (w = .30), the probability (1−β) of detecting a significant association ($p < .05$) between variables [$\chi^2(1)$] was 99.6%, and with a constant (medium effect size: Odds = 2.47) the probability was 99.9%. Likewise, the sensitivity of the design for the execution of a MANOVA with a 3-level grouping factor, 2/4/9 response variables, and a sample of 239 participants, the probability (1−β) of detecting

significant differences ($\alpha < .05$) of a medium effect size ($\eta^2 = .059$) was 100%.

The evaluations of the juvenile offenders (MMPI-A and interviews) were conducted at the centers where they were serving their disposition order. Three experienced forensic psychologists (> 20 years) scored the YLS/CMI 2.0 and PCL: YV based on interviews with the juveniles (video recorded), and the judicial files (which include clinical and social services records gathered by the courts). Additionally, each expert scored 25 YLS/CMI 2.0 and PCL: YV protocols previously coded by another expert for reliability estimation purposes.

Data collection was conducted under court mandate and approved by juvenile courts for scientific purposes. Informed consent was obtained from the juveniles and from the parents or legal guardians of juveniles under 16 years of age (mandatory in Spanish legal system).

The determination of recidivism risk level was based on the *Youth Level of Service/Case Management Inventory 2.0* (YLS/CMI 2.0), applying the risk classification criteria from the inventory (Hoge & Andrews, 2011): low risk (total score ≤ 9); moderate risk (10 ≤ total score ≤ 21); high risk (22 ≤ score ≤ 34); and very high risk (total score ≥ 35).

A screening process was carried out for the MMPI-A protocols with highly inconsistent responses (extreme acquiescence [TRIN rs > 18], random responses [VRIN rs > 18; F T score ≥ 120], lack of cooperation in the evaluation (> 10 items unanswered or with double responses), or outliers (L rs > 10 and K rs > 26) to remove them from the study (Greene, 2008). A total of five protocols (and, by extension, all data from these juveniles) were eliminated from the study.

Measurement Instruments

An *ad hoc* questionnaire was created to collect technical-medical data (family and personal history of physical and mental illnesses), sociodemographic data about the juvenile and their family (age, gender, personal and family criminal history), and academic data (performance and school failure). The information collected with this questionnaire was complemented and validated with the analysis of official academic and judicial records.

The risk of juvenile criminal recidivism was estimated using the *Youth Level of Service/Case Management Inventory 2.0* (YLS/CMI 2.0; Hoge & Andrews, 2011). The YLS/CMI is considered the gold standard for assessing the risk of recidivism and classifying recidivism risk levels. The YLS/CMI 2.0 was translated from English to Spanish (back translation procedure). The YLS/CMI 2.0 consists of 42 dichotomously scored items (0 = *absent* and 1 = *present*) that measure the juvenile's risk level and the criminogenic needs. Internal consistency for the total score of the YLS/CMI ranged between .80 and .93 (Catchpole & Gretton, 2003; Jung & Rawana, 1999). In this study, inter-rater reliability was excellent for the total score, ICC = .91.

For measuring psychopathology and differential diagnosis of simulation (self-unfavorable responses, overreporting) and dissimulation (self-favorable responses, underreporting), the Spanish adaptation of the Minnesota Multiphasic Personality Inventory-Adolescent was used (MMPI-A; Butcher et al., 2003). Given the focus on the study of mental health and simulation (overreporting of symptoms; a diagnostic criterion of psychopathy) and dissimulation (underreporting of symptoms; suspected in offenders; Arce et al., 2024), the basic clinical scales of the instrument were used, excluding the Masculinity-Femininity Scale as it does not measure a clinical disorder (Handel et al., 2011). Simulation is measured with the F, F1, and F2 scales (F being the sum of F1 and F2), and dissimulation is measured with the L and K scales (Butcher et al., 2003). The F-K index (difference in raw scores) was also computed: negative scores are indicative of dissimulation and positive scores of simulation (Fandiño et al., 2021). Finally, consistency of item endorsement was assessed with the Variable Response Inconsistency (VRIN) and the True Response Inconsistency (TRIN) scales. The Spanish adaptation showed an average internal consistency (the MMPI items were constructed and selected based on an empirical selection) of .74 for the basic clinical and validity scales (Butcher et al., 2003).

For evaluating psychopathy, the Spanish adaptation (Ivanova-Serokhvostova et al., 2023) of the *Psychopathy Checklist-Youth Version* (PCL: YV; Forth et al., 2003) was used. The PCL: YV consists of 20 items rated on a 3-point scale (0 = *Does not apply at all*; 1 = *Partially applies*; 2 = *Definitely applies*). The PCL: YV was designed to evaluate psychopathic traits in the adolescent population. The PCLs (PCL-R, PCL: YV, PCL: SV) are structured (first-order latent variables) into four facets (affective, interpersonal, behavioral, and antisocial) grouped into two factors: Factor 1 (interpersonal and affective psychopathic traits—interpersonal/affective factor) and Factor 2 (behavioral and antisocial psychopathic traits—social deviance factor) (Hare, 2021). The reliability of the Spanish adaptation was excellent for the total score, $\omega = .94$, and good for the affective ($\omega = .85$), interpersonal ($\omega = .81$), behavioral ($\omega = .86$), and antisocial ($\omega = .84$) facets. In this study, inter-rater reliability was good for the total score, ICC = .88.

Data Analysis

Observed probabilities were contrasted with a constant estimating the Z score for the difference and the effect size in Odds Ratio, interpreted as small (OR = 1.44), medium (OR = 2.47), large (OR = 4.25) and more than large (OR = 8.82) (Arce et al., 2015). The association between variables was estimated using the chi-squared test (Fisher's exact test), and post-hoc analysis for multiple associations using Sidak correction. Effect size was computed as the prevalence ratio and its magnitude was classified (Arce et al., 2015) as small (PR = 1.44), medium (PR = 2.47), large (PR = 4.25) and more than large (PR = 8.82). For more than large magnitude effects, the Probability of Superiority Effect Size (PS_{ES}; Vilariño et al., 2022) was computed, transforming the effect into a percentile. This allows for the assignment of a quantitative value to extraordinary large effect to understand its real relevance.

Multiple comparisons of means were studied with MANOVAs (dependent variables correlate and comprise a theoretical construct). The assumption of homogeneity of variance is required for comparing groups of different sizes (93/60 = 1.5). Since our data violated this assumption (as indicated by Box's M for each analysis), which could lead to significant deviations in *p*-values, the multivariate test Pillai's trace was preferred for the multivariate *F* as it is robust to heterogeneous variances. For the univariate *F*s, three safeguards were followed to validate the acceptance of the alternative hypothesis (Mayorga et al., 2020): the empirical *F* was greater than the theoretical (df(1, N-k/k)); the observed effect size was ≥ small magnitude; and

the ratio of $\beta/\alpha \geq 1$; i.e., the probability of false acceptance of the null hypothesis was equal or higher than the probability of false acceptance of the alternative hypothesis. Effect size for numerator $df > 1$ were computed as η^2 (small: $\eta^2 = .001$; medium: $\eta^2 = .059$; large: $\eta^2 = .138$; and $\eta^2 = .138$; Arce et al., 2015) and as Cohen's d for numerator $df = 1$ (small: $d = 0.20$; medium: $d = 0.50$; large: $d = 0.80$; and more than large: $d = 1.20$; Arce et al., 2015). Post hoc analyses were analyzed with Sidak's correction (for equal variance and unequal sample size; $N_{\text{large size}}/N_{\text{low size}} > 1.5$) or Dunnett's C (for unequal variance and unequal sample size). The Probability of Superiority Effect Size was computed (PS_{ES}; Vilariño et al., 2022) for more than large magnitude effect sizes.

Results

School Failure, Behavioral Issues, and Parental Incarceration Effects

The results revealed a significant association, $\chi^2(1, N = 239) = 9.53$, $p = .002$, $\varphi = .200$, between school failure (grade repetition vs. non-repetition) and the type of disposition order compliance (community vs. custodial center). Specifically, those serving their sentence in a custodial center had a history of school failure in 83.4% of cases, compared to 65.9% of those serving their sentence in the community. The effect size was small, PR = 1.78, 95% CI [1.26, 2.50], meaning that juvenile offenders serving their sentence in custodial centers were 1.78 times more likely to have school failure than those serving their sentence in the community. Additionally, the probability of school failure (course repetition) for juvenile offenders was significantly higher (.774), $Z(N = 239) = 19.02$, $p < .001$, compared to the general population across their academic trajectory starting at age 6 (.245; Consejo Escolar de Estado, 2023), with a more-than-large effect size, OR = 10.55, 95% CI [9.30, 11.98]. In other words, juvenile offenders are 10.55 times more likely to experience school failure than the general population, with an effect magnitude greater than 81.86% of all possible effects ($PS_{ES} = .8186$).

The results also showed a significant prevalence (.180) of clinical diagnosis of conduct disorder, $Z(N = 239) = 11.04$, $p < .001$, in the juvenile offender population, being 5.27 times more likely to be diagnosed with conduct disorder than expected in the general population, OR = 5.27, 95% CI [4.64, 5.98], a large magnitude effect ($4.25 < OR < 8.82$), higher than 74.22% of all possible effects ($PS_{ES} = .7422$). A significant association was observed, $\chi^2(2, N = 239) = 22.82$, $p < .001$, Cramer's V = .309, between risk level (low, moderate, high) and parental psychopathology history (absent vs. present). Post-hoc analysis (Sidak's correction: $p = .170$) revealed a significant association, $\chi^2(1, N = 146) = 22.77$, $p < .001$, between parents with a history of psychopathology and high-risk juveniles (.651 vs. .250 in low-risk juveniles), with a 2.60 times higher prevalence in high-risk juveniles, PR = 2.60, 95% CI [1.64, 4.15]; and with moderate-risk juveniles (.473 vs. .250 in low-risk juveniles), $\chi^2(1, N = 153) = 7.66$, $p = .007$, showing a 1.89 times higher prevalence in moderate-risk juveniles, PR = 2.60, 95% CI [1.16, 3.08].

Parental criminal records (with criminal records vs. without criminal records) were significantly associated, $\chi^2(1, N = 238) = 18.45$, $p < .001$, Cramer's V = .278, with juveniles' recidivism risk levels (low, moderate, high). Post-hoc analysis (Sidak's correction: $p = .170$) showed a significant association between parents' criminal records and juvenile recidivism risk levels. High-risk juveniles had 41.9% of parents with criminal records, $\chi^2(1, N = 146) = 15.51$, $p < .001$, while low-risk juveniles had 11.7%, indicating a prevalence of 3.59 times higher in high-risk juveniles (medium magnitude effect size), PR = 3.59, 95% CI [1.71, 7.52]; and high-risk juveniles had 41.9% of parents with criminal records, $\chi^2(1, N = 179) = 8.61$, $p = .004$, whereas moderate-risk juveniles had 21.5%, showing a prevalence 1.95 times higher in high-risk juveniles (small magnitude effect size) compared to moderate-risk juveniles, PR = 1.95, 95% CI [1.23, 3.09].

Finally, the results revealed that parental incarceration (Yes vs. No) had no effect on the mental health of their children, Pillai's Trace = 0.07, $F(9, 229) = 1.81$, $p = .068$, $= .066$.

Impression Management in Psychopathology Reports

A MANOVA was executed on the measures of the accuracy endorsement for the risk of recidivism factor. The results reported a multivariate significant effect, Pillai's Trace = .235, $F(10, 466) = 6.19$, $p < .001$, $1-\beta = 1.00$, explaining 11.7% of the variance, $= .117$.

The univariate effects (see Table 1) indicated significant differences with a large magnitude ($\eta^2 \geq .138$) in F1 scale (= .162), medium magnitude ($.059 \leq \eta^2 < .138$) in L scale (= .072), K scale (= .075) and F-K index (= .121), and small magnitude ($.001 < \eta^2 < .059$) in F2 scale (= .046). Post-hoc analysis advertised significant differences (Sidak's correction: $p = .170$ for equal variance and unequal sample size/Dunnett's C for unequal variance and unequal sample size) between low risk of recidivism juveniles (higher scores in L and K scales) and moderate and high

Table 1

Univariate Effects on the Accuracy of Item Endorsement Measures for the Risk of Recidivism Factor (low, Moderate, High)

Accuracy measure	F	p	M_{hr}	M_{mr}	M_{lr}	d_1	d_2	d_3
L	9.11	< .001	4.22	4.85	5.85	-0.26	-0.46$^+$	-0.68$^+$
F1	22.82	< .001	7.60	6.66	3.17	0.22	0.85$^+$	1.17$^+$
F2	5.63	.004	6.65	7.09	4.58	-0.09	0.52$^+$	0.47$^+$
K	9.61	< .001	13.09	13.63	16.45	-0.11	-0.61$^+$	-0.67$^+$
F-K index	16.26	< .001	1.16	0.13	-8.70	0.09	0.83$^+$	0.90$^+$

Note. $df(2, 236)$; M_{lr}: mean of the low risk of recidivism group; M_{mr}: mean of the moderate risk of recidivism group; M_{hr}: mean of the high risk of recidivism group; d_1: Cohen's d for high vs. moderate group; d_2: Cohen's d for moderate vs. low group; d_3: Cohen's d for high vs. low group; Box' M = 68.75, $F(30, 133388.2) = 2.22$, $p < .001$;+post-hoc significant differences.

risk of recidivism juveniles in L and K scales. Specifically, low risk juveniles exhibited a self-favorable tendency (dissimulation, underreporting) in their responses when compared to moderate and high recidivism risk of juveniles. This same pattern was observed in the F-K index, where low-risk juveniles showed a significant self-favorable tendency (negative scores on the F-K index indicate self-favorable responses) with lower negative scores in comparison to moderate- and high-risk juveniles. The magnitude of the self-favorable effect was medium ($ds \approx 0.50$) on the L and K scales and large ($d > 0.80$) on the F-K index (the combination implies more validity of the measure). As for F1 and F2 scales, measuring self-unfavorable responses related to psychopathology, post-hoc analyses exhibited significant differences between moderate and high-risk recidivism juveniles (higher scores) with low risk recidivism juveniles. The magnitude of this effect was medium ($d \approx 0.50$) for F2 scale and large for F1($d > 0.80$). In contrast to dissimulation measures, a self-unfavorable tendency was observed in their reports of psychopathology when compared to low risk recidivism juveniles.

Regarding the consistency of item endorsement, a MANOVA was performed on the measures of consistency of item endorsement (TRIN, VRIN and F1-F2 index) for the risk of recidivism factor, which revealed a multivariate non-significant effect, Pillai's Trace = .120, $F(6, 470) = 1.89$, $p = .079$, $1-\beta = .705$, = .024.

Effects of Risk Recidivism Levels on Psychological Adjustment

A MANOVA was performed for the risk of recidivism factor (low, moderate, high) on psychological adjustment (MMPI-A basic clinical scales). The results displayed a multivariate significant effect, Pillai's Trace = .404, $F(18, 458) = 6.44$, $p < .001$, with a power of 100%, $1-\beta = 1.00$, accounting by for 20.2% of the variance, == .202.

The univariate effects (see Table 2) reported significant differences with a large magnitude effect size ($\eta^2 \geq .138$) in psychopathic deviation = .336) and hypomania = .170); medium effect magnitude ($.059 \leq \eta^2 < .138$) in paranoia = .103), psychasthenia = .091) and schizophrenia = .123); and small effect size ($.100 < \eta^2 < .059$) in hypochondriasis = .036). Post-hoc analyses (Sidak's correction: $p = .170$ for equal variance and unequal sample size/Dunnett's C for unequal variance and unequal sample size) showed the same pattern of differences: higher psychopathological scores in high and moderate risk recidivism offenders compared to low risk offenders (see the magnitude of the difference in Table 2).

Effects of Risk of Recidivism Levels on Psychopathic Traits

A MANOVA was conducted to assess the effects of recidivism risk levels (low, moderate, high) on psychological adjustment (MMPI-A basic clinical scales). The results revealed a significant multivariate effect, Pillai's Trace = .404, $F(18, 458) = 6.44$, $p < .001$, explaining 41.2% of the variance, = .412, a more than large magnitude effect size, an effect magnitude greater than 88.10% of all possible effect sizes, $PS_{ES} = .8810$.

Regarding the univariate effects for the risk of recidivism factor, the results (see Table 3) exhibited significant and more than large effect sizes ($\eta^2 \geq .138$) in the interpersonal (= .505, above 92.36% of all possible effects, $PS_{ES} = .9236$), affective (= .491, above 91.77%

Table 2
Univariate Effects on Psychopathology for the Risk of Recidivism Factor (low, Moderate, High)

Basic clinical scale	*F*	*p*	M_{hr}	M_{mr}	M_{lr}	d_1	d_2	d_3
Hypochondriasis	4.40	.013	10.20	10.07	7.83	0.02	0.46+	0.47+
Depression	0.76	.467	24.28	23.74	23.13	0.10	0.11	0.20
Hysteria	2.44	.089	25.19	25.11	23.28	0.01	0.34	0.34
Psychopathic deviation	59.61	< .001	27.55	25.88	18.77	0.33	1.40+	1.82+
Paranoia	13.55	< .001	16.40	15.58	12.68	0.18	0.66+	0.90+
Psychasthenia	11.81	< .001	21.80	21.07	15.07	0.08	0.72+	0.78+
Schizophrenia	16.61	< .001	26.41	25.72	15.68	0.05	0.89+	0.91+
Hypomania	24.20	< .001	21.90	21.56	16.95	0.07	0.96+	1.12+
Social introversion	1.67	.190	25.01	25.37	23.13	-0.05	0.30	0.25

Note. *df*(2, 236); M_{lr}: mean of the low risk of recidivism group; M_{mr}: mean of the moderate risk of recidivism group; M_{hr}: mean of the high risk of recidivism group; d_1: Cohen's *d* for high vs. moderate group; d_2: Cohen's *d* for moderate vs. low group; d_3: Cohen's *d* for high vs. low group; Box' M = 118.51, $F(90, 1116461.9) = 1.24$, $p = .059$; +post-hoc significant differences.

Table 3
Univariate Effects on the Psychopathic Traits for the Risk of Recidivism Factor (low, Moderate, High)

Psychopathic trait	*F*	*p*	M_{hr}	M_{mr}	M_{lr}	d_1	d_2	d_3
Interpersonal	120.54	< .001	5.24	3.73	0.48	0.74+	1.71+	3.26+
Affective	113.71	< .001	5.56	3.72	0.55	0.87+	1.60+	2.74+
Lifestyle	252.87	< .001	7.63	5.12	0.58	1.25+	2.28+	4.38+
Antisocial	166.31	< .001	6.07	3.03	0.33	1.47+	1.58+	3.02+

Note. *df*(2, 236); M_{lr}: mean of the low risk of recidivism group; M_{mr}: mean of the moderate risk of recidivism group; M_{hr}: mean of the high risk of recidivism group; d_1: Cohen's *d* for high vs. moderate group; d_2: Cohen's *d* for moderate vs. low group; d_3: Cohen's *d* for high vs. low group; Box' M = 203.35, $F(20, 149524.9) = 9.91$, $p < .001$; +post-hoc significant differences.

of all possible effects, PS_{ES} = .9177), lifestyle (= .692, above 98.30% of all possible effects, PS_{ES} = .9830) and antisocial (= .585, above 95.35% of all possible effects, PS_{ES} = .9535) facets and; by extension, in the interpersonal/affective factor (interpersonal and affective facets) and the social deviance factor (lifestyle and antisocial facets). Post-hoc analyses revealed significant differences (Sidak's correction: p = .170 for equal variance and unequal sample size/Dunnett's C for unequal variance and unequal sample size) in the interpersonal facet between juveniles of low and moderate risk of recidivism (higher scores in high risk juveniles); between high and moderate risk of recidivism (higher scores in high risk juveniles); and between low and moderate risk of recidivism (higher scores in moderate risk juveniles). The same pattern of results was observed in affective, lifestyle and antisocial facets; that is, significantly higher scores in high risk juveniles compared to low and moderate risk juveniles, and higher scores in moderate risk juveniles compared to low risk juveniles. The magnitude of the effect size was more than large (d > 1.20) for the comparison between the low risk recidivism group and the moderate and high risk recidivism groups; and of a large magnitude (d = 80) for the comparison between moderate and high risk recidivism groups in the interpersonal and affective facts (interpersonal/affective factor), and of a more than large in the lifestyle and antisocial facets (social deviance factor).

Discussion

The research aimed to examine the relationship between the risk of recidivism and psychological adjustment, impression manipulation, and psychopathic traits. The findings of this study should be interpreted within the scope of certain limitations. First, the data provided by juveniles were contaminated by impression management (over- and under-reporting). Second, clinical and social service records included in judicial files had clinical and social services purposes, limiting reliability (e.g., clinicians exhibit low to moderate diagnostic agreement rates). Third, other moderating effect variables (e.g., family background) were not studied (counterbalanced). Forth, the generalization of the findings to other measures of recidivism risk (e.g., police assessments, juvenile self-reports) should be approached with caution. Fifth, comparisons with other studies must consider that the sample includes juveniles sentenced to community orders, counterbalancing the effect of the type of disposition order (custodial vs. community) in risk assessment (literature mainly focused on juveniles sentenced to custodial centers). Considering these limitations, the following conclusions and implications are drawn:

a) Scholarly, juvenile offenders are characterized by academic failure. Therefore, interventions must prioritize the educational needs of these individuals as a critical target, as this adverse effect is present in over 80% of cases.
b) Juvenile offenders are also considered clinician cases. As such, interventions must include the clinical needs.
c) Parental history of clinical disorders and criminal records is strongly associated with recidivism risk (around 40% of high recidivism risk juveniles had parents with criminal records, and over 60% had parents with a history of mental health issues). Then, addressing intervention to family circumstances is essential to mitigate recidivism risk.
d) Impression management (deceitfulness symptom of conduct disorder and a characteristic of psychopathy) has been observed in juvenile offender population, following an escalation effect corresponding to the level of recidivism risk. Impression management, which involves the simulation of clinical disturbances (suspected malingering in clinical setting; APA, 2013) and presenting a mandated differential diagnosis in forensic evaluations (Arce et al., 2006, 2009), has been registered in high and moderate risk offenders. Furthermore, impression management involving the dissimulation of clinical disturbances, suspected in sentenced offenders' evaluation (Arce et al., 2024; Gillard & Rogers, 2015), has also been observed in low-risk offenders. These findings have direct implications for clinical and forensic evaluations i.e., the reports of juveniles should be corrected for impression management. However, in terms of intervention, impression management does not have direct effects and should not be considered a criminogenic need, thus not serving as a target for intervention.
e) The risk of recidivism explains 20% of psychological adjustment, representing a more than large effect. A clear escalation in clinical symptoms was observed: moderate and high risk offenders exhibited more clinical symptoms. Hence, psychological maladjustment (considered a non-criminogenic need in R-N-R model; Andrews & Bonta, 2024) requires intervention: moderate and high risk juvenile offenders have more clinical needs, demanding more intensive interventions.
f) Recidivism risk and psychopathy are strongly related, sharing 41% of the variance. In facts, psychopathy has been considered a measure of recidivism risk in clinical and forensic contexts (Hare, 2021), but around 60% of the variance remains independent. Thus, most of the variance in recidivism risk (measured by the YLS/CMI, the gold standard) is not encompassed by psychopathy (measure by the PCL: YV, the gold standard).
g) The relationship between recidivism risk and psychopathy follows an escalation model, with lower scores in psychopathic traits in low recidivism risk offenders and higher scores in high-risk offenders. The magnitude of differences between risk levels is so high (systematically large or more than large), suggesting that new intermediate levels should be considered to more accurately match the intensity of the intervention to the real needs of the offenders (need principle in R-N-R model; Andrews & Bonta, 2024).

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