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PSYCHOPATHOLOGICAL DISORDERS AND EXECUTIVE FUNCTIONING IN JUVENILE OFFENDERS IN FRANCE

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Abstract

Studies on the mental health of young offenders are scarce, particularly in Europe. Likewise, international data on the specificities of their executive functioning remains rare. This study aimed to assess the prevalence of mental disorders in a representative sample of young delinquents placed under judicial supervision in France (N = 60) and to compare their executive test performance with a comparison group from the general population (N = 60). The diagnostic assessment of mental disorders was conducted using the Mini International Neuropsychiatric Interview (DSM-5), and executive functions were evaluated using three neuropsychological tests: Trail Making Test, Stroop and N-back. The results highlighted a higher prevalence of mental disorders among the young offenders (95%) than in the young people from the general population (33.3%). The most common disorders were conduct and antisocial personality disorders (71.7%), disorders linked to substance use other than alcohol (56.7%), prior episodes of major depression (33%) and post-traumatic stress disorder (25%). The level of comorbidity in the offender group was also higher. The young offender group had significantly lower performances on executive tests than the comparison group. These findings highlight the marked vulnerability of young offenders in terms of their mental health and psychosocial adjustment. It is thus necessary to continue investigating this field and to set up national prevention programs.

Keywords: *Young offenders, mental health, mental disorders, executive functions, juvenile justice system.*

1. Introduction

This presentation, prepared for InPACT 2026 and supervised by Professor Nicolas Combalbert, is part of a national project funded by the French Ministry of Justice (Combalbert et al., 2025) focusing on the psychosocial characteristics of justice-involved youth (excluding those placed in closed educational centres, CEF). The project includes a first component centred on professionals' perceptions and a second component involving direct assessment of young people (clinical interviews, questionnaires, and cognitive tasks). The study presented here derives from this second component.

European data on the mental health of justice-involved adolescents remain relatively scarce, although international literature consistently demonstrates robust links between psychopathological disorders and delinquent behaviour (Fazel et al., 2016; Fovet et al., 2020).

Existing research converges toward a high prevalence of psychiatric disorders and substantial comorbidity in these populations. (Beaudry et al., 2021; Heller, 2020) In France, the study conducted by Bronsard et al. (2019, 2025) has already reported very high levels of psychopathology; however, it exclusively examined youth placed in closed educational centres (CEF). Moreover, studies combining standardized diagnostic assessment with structured measures of executive functioning (flexibility, inhibition, updating) remain limited, despite evidence suggesting executive deficits that may interact with psychopathology and affect psychosocial and academic adjustment (Borrani et al., 2019; Sepulveda et al., 2022).

In this context, our study aims to simultaneously document (1) the prevalence of mental disorders and (2) executive functioning in justice-involved youth, compared with a general population sample.

The central research question is therefore the following: Do justice-involved youth present a higher prevalence of mental disorders and lower executive functioning performance than adolescents from the general population, and is psychiatric comorbidity associated with poorer executive efficiency?

Three hypotheses guided our study. First, we hypothesized that the prevalence of mental disorders would be significantly higher among justice-involved youth compared to the comparison group. Second, we expected lower performance on executive tasks among justice-involved youth. Third, we hypothesized that greater psychiatric comorbidity (i.e., a higher number of disorders) would be associated with poorer executive functioning.

2. Method

The total sample comprised 120 participants aged 13 to 20 years, divided into two equal groups. Group 1 (G1) included 60 justice-involved youth (minors and young adults) supervised by the French Youth Judicial Protection Service (PJJ). Group 2 (G2) included 60 adolescents from the general population without judicial history, recruited on a voluntary basis and matched to G1 on age (G1: 17.53 ± 1.28; G2: 17.75 ± 1.58) and sex (G1: 6 females, 54 males; G2: 12 females, 48 males).

Marked educational differences were observed: 18.2% of G1 participants were enrolled in school at the time of data collection compared to 100% in G2. The number of completed years of education was lower in G1 (9.82 ± 1.23) than in G2 (12.07 ± 1.33). Furthermore, 56.67% of G1 participants reported having obtained a diploma, compared to 93.3% in G2.

G1 participants were recruited nationwide through three types of residential or placement facilities operating under judicial supervision. G2 participants were recruited from public secondary schools in the Centre–Val de Loire region. In accordance with French data protection regulations (CNIL), offences were described using broad categories only: property offences (43.1%), offences against persons (37.93%), and drug-related offences (29.31%). Categories could overlap (31.58%), and 10.34% of participants declined to respond.

Sociodemographic data were collected through a semi-structured interview (approximately 10 minutes). Mental health was assessed using the structured diagnostic interview MINI (DSM-5): the MINI-KID version for participants under 16 years old and the adult version from age 16 onward. The interview covered major depressive episodes (current and past), anxiety disorders, substance-use disorders, conduct disorder/antisocial personality disorder, and psychotic syndromes (for participants aged 16 and above). Administration lasted between 15 and 45 minutes.

Executive functioning was assessed using three tasks: the Trail Making Test (TMT; flexibility), the Stroop task (inhibition), and the N-back task (2-back; updating). Indices were computed from response times (TMT, Stroop) and accuracy (2-back). Executive task administration lasted approximately 10 minutes.

Data collection (December 2023 to April 2025) was conducted by three clinical psychologists in quiet and confidential settings. Participation was voluntary, anonymous, and confidential, and participants could withdraw at any time. Data were anonymized using alphanumeric codes; parental consent was required for minors.

3. Results

Results indicate a markedly higher prevalence of mental disorders among justice-involved youth. Overall, 95% of participants in G1 met criteria for at least one mental disorder, compared to 33.3% in G2. Across diagnostic categories, conduct disorder/antisocial personality disorder was by far the most prevalent condition in G1 (71.7%), compared to 1.7% in the general population group. Substance-use disorders (excluding alcohol) were also highly prevalent in G1 (56.7%) versus 3.3% in G2.

Mood disorders showed substantial differences between groups: current mood disorders were observed in 21.7% of justice-involved youth versus 5% in the comparison group, while past major depressive episodes were reported in 46.7% of G1 compared to 33.3% in G2. Anxiety disorders were present in 26.7% of G1 and 15% of G2. Probable PTSD was identified in 25% of justice-involved youth versus 15% in the general population group. Alcohol use disorder affected 20% of G1 compared to 5% of G2, and psychotic disorders were identified in 10% of G1 participants, whereas none were detected in G2. Taken together, these results highlight not only a higher overall psychiatric burden in justice-involved youth, but also a broader distribution of severe and externalising disorders within this group.

Comorbidity was substantially higher among justice-involved youth. While 33.3% of adolescents in the general population had at least one disorder, this proportion reached 95% in G1. Moreover, 70% of justice-involved youth presented at least two disorders and 50% at least three disorders, compared to 25% and 10% respectively in G2. Among participants diagnosed with conduct disorder or antisocial personality disorder (n = 43), 86% had at least one additional psychiatric condition, illustrating the strong overlap between behavioural disorders and other forms of psychopathology.

Justice-involved youth performed significantly worse than the comparison group across all three executive components. For cognitive flexibility (TMT), mean flexibility index scores were 49.25 in G1 compared to 26.02 in G2 ($p < .001$), indicating markedly poorer shifting ability among justice-involved youth. For inhibition (Stroop interference index), mean scores were 26.37 in G1 versus 17.64 in G2 ($p < .001$), reflecting greater difficulty in inhibiting automatic responses. For working memory updating (2-back accuracy), justice-involved youth showed lower performance (80.63%) compared to the general population group (88.04%) ($p < .001$). These findings indicate broad impairments in cognitive control processes among justice-involved adolescents.

Correlation analyses further revealed significant associations between psychiatric comorbidity and executive functioning. Comorbidity was positively associated with poorer cognitive flexibility ($r = .42$, $p < .001$) and poorer inhibition ($r = .20$, $p = .031$). When considering cumulative disorders, similar patterns were observed (flexibility: $r = .41$, $p < .001$; inhibition: $r = .19$, $p = .033$), suggesting a meaningful relationship between the number of co-occurring disorders and diminished executive control. In contrast, associations between comorbidity and updating performance (2-back accuracy) were weaker and did not reach statistical significance ($r = –.17$, $p = .067$; cumulative disorders: $r = –.15$, $p = .099$). Taken together, these findings suggest that increasing psychiatric burden is particularly related to impairments in flexibility and inhibitory control, whereas updating processes may be less directly affected.

4. Discussion

Our findings first confirm that the prevalence of mental disorders is significantly higher among justice-involved adolescents than in the comparison group. The rates observed in the judicial sample are extremely high and appear to exceed those reported in several international studies, suggesting a particularly strong concentration of psychopathology in this population. Nevertheless, the general population group also displayed a non-negligible level of psychological difficulties, highlighting broader adolescent mental health vulnerability beyond the judicial context.

Our results also support the hypothesis of poorer executive functioning among justice-involved youth. These adolescents demonstrated weaker performance across flexibility, inhibition, and updating tasks. Functionally, such impairments may translate into difficulties adapting to changing situations, shifting cognitive strategies, and regulating impulsive or emotionally driven responses. These executive difficulties may limit adjustment to social, educational, and institutional demands. While consistent with the hypothesis of cumulative adverse experiences and substance use impacting prefrontal development, our design does not allow causal inference.

Finally, the hypothesis that higher psychiatric comorbidity would be associated with poorer executive functioning was partially supported. Greater comorbidity was significantly associated with lower flexibility and inhibition performance, suggesting that comorbidity may reflect broader cognitive regulation vulnerability beyond mere symptom accumulation. However, no significant association was observed between comorbidity and updating performance (2-back), possibly reflecting lower sensitivity of the accuracy-based measure used.

Regarding limitations, the main concern relates to G1 sampling: participation was voluntary and mediated by professionals, and systematic evaluation across all facilities was not possible, potentially limiting representativeness. The low proportion of females also restricts the scope of sex-based comparisons.

Future research should extend assessment to additional cognitive domains (attention, reasoning, metacognition) and ideally adopt longitudinal designs to better document temporal relationships between adversity, psychopathology, and cognitive functioning.

From an applied perspective, our findings support an integrated strategy combining regular screening, targeted interventions (particularly in psychotrauma and addiction), and educational support adapted to executive difficulties, potentially complemented by simple cognitive training exercises.

5. Conclusion

Our results show that justice-involved adolescents present both very high levels of psychopathology and broadly impaired executive functioning, reflecting substantial mental-health and cognitive-control needs. High psychiatric comorbidity is associated with poorer executive performance, constituting a major vulnerability factor for psychosocial adjustment, interpersonal relationships, and academic functioning.

In a European context where research on the mental health of young offenders—particularly minors—remains limited and methodologically challenging, these findings support the implementation of structured national prevention and treatment programmes. Such programmes should include systematic psychological screening, regular standardized assessments, simple cognitive interventions aimed at improving executive functioning, targeted treatment depending on individual difficulties, and strengthened partnerships with specialists in psychotraumatology and addiction.

Violent justice-involved youth should therefore be considered in light of their high levels of psychopathology, executive dysfunction, and accumulated adversity, rather than solely through the lens of their offending behaviour.

References

Beaudry, G., Yu, R., Långström, N., & Fazel, S. (2021). An updated systematic review and meta-regression analysis: Mental disorders among adolescents in juvenile detention and correctional facilities. *Journal of the American Academy of Child & Adolescent Psychiatry, 60*(1), 46–60. https://doi.org/10.1016/j.jaac.2020.01.015

Borrani, J., Frías, M., Alemán, B, A., García, A., Ramírez, C., & Valdez, P. (2019). Neuropsychological disorders in juvenile delinquents. *Revista Mexicana de Neurociencia, 20*(5), 244–252. https://doi.org/10.24875/RMN.19000064

Bronsard, G., & Boyer, L. (2019, septembre). *Étude médico-psychologique d'adolescents placés en Centre éducatif fermé en France*. Rapport final. Convention nationale des associations de protection de l'enfant (CNAPE)

Bronsard, G., Leroux, P.-A., Diallo, I., Eleuterio, J., Le Bihan, A., Boyer, L., & Lavenne-Collot, N. (2025). Prevalence of mental disorders in closed educational centers in France. *L'Encéphale, 51*(1), 15–21. https://doi.org/10.1016/j.encep.2023.11.026

Combalbert, N., Ouhmad, N., Deperrois, R., Dougez, C., Taillandier-Schmitt, A., Zekriyazdi, F. S., & Bazin, S. (2025). *Caractéristiques psychosociales des jeunes placés au pénal (hors CEF) et prise en compte de leurs vulnérabilités par les professionnels de la Protection judiciaire de la jeunesse*. Ministère de la Justice, Direction de la protection judiciaire de la jeunesse.

Fazel, S., Hayes, A. J., Bartellas, K., Clerici, M., & Trestman, R. (2016). The mental health of prisoners: Prevalence, adverse outcomes, and interventions. *The Lancet Psychiatry, 3*(9), 871–881. https://doi.org/10.1016/S2215-0366(16)30142-0

Fovet, T., Plancke, L., Amariei, A., Benradia, I., Carton, F., Sy, A., Kyheng, M., Tasniere, G., Amad, A., Danel, T., Thomas, P., & Roelandt, J.-L. (2020). Mental disorders on admission to jail: A study of prevalence and a comparison with a community sample in the north of France. *European Psychiatry, 63*, e43. https://doi.org/10.1192/j.eurpsy.2020.38

Heller, P. (2020). *Délinquance juvénile et besoins en santé mentale* (Thèse de doctorat, Université de Genève). UNIGE. https://doi.org/10.13097/archive-ouverte/unige:143922

Kirchner, W. K. (1958). Age differences in short-term retention of rapidly changing information. *Journal of Experimental Psychology, 55*(4), 352–358. https://doi.org/10.1037/h0043688

Miyake, A., Friedman, N. P., Emerson, M. J., Witzki, A. H., Howerter, A., & Wager, T. D. (2000). The unity and diversity of executive functions and their contributions to complex "frontal lobe" tasks: A latent variable analysis. *Cognitive Psychology, 41*(1), 49–100. https://doi.org/10.1006/cogp.1999.0734

Reitan, R. M. (1958). Validity of the Trail Making Test as an indicator of organic brain damage. *Perceptual and Motor Skills, 8*, 271–276. https://doi.org/10.2466/PMS.8.7.271-276

Sepúlveda Navarro, G. M., Cayupe Rivas, C., & Zúñiga, J. (2022). Executive functions of juvenile offenders: a systematic review. *Revista Criminalidad, 64*(3), 169–202. https://doi.org/10.47741/17943108.372

Stroop, J. R. (1935). Studies of interference in serial verbal reactions. *Journal of Experimental Psychology, 18*(6), 643–662. https://doi.org/10.1037/h0054651