

Psychopathic traits in young offenders vs. non-offenders in similar socioeconomic condition

Gustavo B. Castellana,¹ Daniel M. de Barros,² Antonio de P. Serafim,^{2,3} Geraldo Busatto Filho⁴

¹Institute of Psychiatry, Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo (HCFMUSP), São Paulo, SP, Brazil.

²Institute of Psychiatry, HCFMUSP, São Paulo, SP, Brazil. ³Graduate Program in Health Psychology, Universidade Metodista de São Paulo (UMESP), São Paulo, SP, Brazil. ⁴Department of Psychiatry, School of Medicine, Universidade de São Paulo (USP), São Paulo, SP, Brazil.

Objective: To analyze the differences in psychopathic traits between offender and non-offender youths with similar socioeconomic backgrounds.

Method: The Psychopathy Checklist Revised (PCL-R) scale was used to identify whether 39 young offenders with no history of mental disorders or criteria for psychopathy exhibited differences in its total score, and specifically for factor 1 or factor 2 of this scale, when compared with 32 other young people, living in similar socioeconomic conditions, who had not committed offenses.

Results: We observed statistically significant between-group differences ($p < 0.01$) in mean PCL-R scores, with a mean score of 13.4 in the offender group vs. 2.1 in the non-offender group. We also detected significant between-group differences when we analyzed mean factor 1 ($p < 0.01$) and factor 2 ($p < 0.01$) scores separately. Although the groups exhibited statistically significant difference in educational attainment, between-group comparison of mean PCL-R scores controlling for educational attainment by analysis of covariance (ANCOVA) showed that the difference in PCL-R scores remained statistically significant ($p < 0.01$).

Conclusions: We conclude that, in this sample, the presence of both primary (interpersonal/affective characteristics) and secondary (lifestyle/antisocial behavior) psychopathic traits differed between offender and non-offender youths, even when excluding psychopathy and other mental disorders from the assessments. These results suggest a need for wide-ranging interventions, not restricted to socioeconomic aspects, for the management of juvenile delinquency.

Keywords: Juvenile delinquency; psychopathic personality; antisocial personality disorder; conduct disorder

Introduction

The importance of psychopathic traits to the emergence of offending behaviors has long been a matter of debate, and this issue has been evaluated in several studies worldwide. While the prevalence of psychopathy in adult criminals ranges from 15 to 20%, in young offenders this frequency is less well established, ranging from 9.4 to 37% across different published studies.¹⁻³

As early as 1948, Karpman hypothesized that there are two subtypes of psychopathy: primary and secondary variants.⁴ According to this author, while secondary psychopathy results from unresolved emotional conflicts produced by exposure to psychosocial and environmental factors, primary psychopathy would result from a "constitutional" deficit.⁵

Since then, this hypothesis has been supported by several studies assessing samples of psychopaths with different theoretical approaches.⁶⁻⁹ There is now a consensus regarding the validity of distinguishing interpersonal/affective characteristics (which correspond to

the primary variant and are more constitutionally inherited) from lifestyle/antisocial behaviors (which correspond to the secondary variant and are more influenced by the environment).¹⁰⁻¹³

The relevance of environmental factors has also been proposed by many authors who studied children and adolescents with antisocial behaviors.¹⁴⁻¹⁶ Curto et al., for example, found that severe physical punishment and having an absent father/substitute at home were significantly associated with adolescent antisocial behavior in a low-income community in Brazil.¹⁷

In spite of these findings, it still unclear which aspects of personality – constitutional or psychosocial – differentiate young offenders from non-offenders with a similar socioeconomic background.¹⁸⁻²⁰ The investigation of such distinctions, by possibly suggesting the existence of different routes to offending behavior, may be of critical value to deepen our understanding about juvenile delinquency and, perhaps, inform better strategies to address this problem.

Among the many instruments that assess psychopathic traits, the Psychopathy Checklist Revised (PCL-R) is one of the most widely employed and validated.^{15,21,22} The PCL-R is a tool for establishing psychopathy traits through assessment of 20 items, organized into two factors. Factor

1 is associated with interpersonal/affective characteristics (such as lack of empathy and callousness), while factor 2 is associated with lifestyle and antisocial behaviors (such as impulsivity and irresponsibility).

The aim of the present study was to evaluate whether the presence of primary or secondary psychopathic traits, assessed according to the bi-factor model of the PCL-R, are significantly associated with juvenile delinquency in Brazil. Toward this end, we compared PCL-R scores between young offenders and youths of the same socioeconomic background who had not committed offenses throughout their lives.

Methods

Instruments

Clinical interviews and PCL-R assessments were conducted between 2009 and 2012 by the same evaluator. The PCL-R scale with semi-structured interviews was used to assess psychopathy. The total score, ranging from 0-40, was calculated, with scores greater than 23 considered as a severe level of psychopathy, according to the validation of the scale for use in Brazil.¹ Three items influenced by the age group of the sample – promiscuity, short-term marital relationships, and criminal versatility – were excluded from the PCL-R assessment scale, and the total scores were corrected taking into account these exclusions, according to the manual guidelines.²¹

The Brazilian version of the Mini-International Neuropsychiatric Interview (MINI) questionnaire 5.0²³ was used for rapid screening of potential mental disorders. The Drug Use Scale (DUS) was used to assess alcohol and drug use.²⁴ Individuals with mental disorders (including mental retardation and substance abuse disorders) were excluded from the study prior to PCL-R assessment. The vocabulary subtest of the Wechsler Adult Intelligence Scale-III (WAIS-III)²⁵ was used for assessment of intellectual level. Two experienced neuropsychologists performed the cognitive assessment. The Critério de Classificação Econômica Brasil (CCEB) was used to evaluate the socioeconomic profile in accordance with the Brazilian Association of Research Companies classification.²⁶

Sample

A total of 76 male youths, aged 18 to 24, were interviewed in this study.

The offenders comprised 44 young subjects detained at the Fundação Centro de Atendimento Socioeducativo ao Adolescente (CASA). Fundação CASA is a state juvenile correctional facility responsible for the custody of young offenders detained for theft, robbery, drug trafficking, or murder. We excluded five youths who scored above 23 on the PCL-R scale, consistent with the concept of psychopathy. Consequently, the offender group included 39 male youths, aged 18 to 24, and belonging to disadvantaged socioeconomic classes according to CCEB.

The control group comprised 32 youths who regularly attended the Intel Computer Clubhouse Network, a clubhouse close to the unit of Fundação CASA, and experienced similar socioeconomic characteristics. The coordinators of this philanthropic community program, which provides teaching of computer skills, invited young attenders to participate in the study. None of the invited youths had a previous history of having committed offenses.

Statistical analysis

Statistical analysis was performed using STATA Data Analysis and Statistical Software version 11.

We considered the mean total PCL-R score, factor 1 score, and factor 2 score as outcome variables. The intelligence quotient (IQ), age, and educational attainment (mean years of schooling) were potentially confounding variables.

We used the *t* test to compare the mean PCL-R scores (total, factor 1, and factor 2) between the two groups (offenders vs. control). As PCL-R scores in the control group failed the Shapiro-Wilk normality test, we standardized the data to run the *t* test, as our sample was not random. We also used the *t* test to compare the mean IQ, age, and educational attainment between the groups. The significance level was set at $p < 0.05$.

If any of the potentially confounding variables presented between-group differences by Student's *t* test, we evaluated the differences in PCL-R scores in the presence of this covariable using analysis of covariance (ANCOVA).

Ethical aspects

All young subjects included in this study were informed about the study objectives and given assurances as to the absolute secrecy of the obtained data. Written consent was obtained from all participants in this study, allowing the use of the obtained data with preserved anonymity. The local Juvenile Court Department and the Ethics Committee of the Department of Psychiatry of the Universidade de São Paulo (USP) School of Medicine approved this study. The board director of the Raposo Tavares Technical Division of Fundação CASA and the coordinator of the Intel Computer Clubhouse Network, where the data were collected, agreed to conduct this research at their respective facilities.

Results

The young offender and non-offender groups presented similar socioeconomic status, corresponding to the C classification of the CCEB scheme. The young offenders had been detained on average 7 months before the interview (range 3-17 months), and the majority of offenses corresponded to armed robbery. Most youths in the control group were employed, with salaries ranging between one to two times the minimum wage.

The mean age was 18 years (range 18-19 years) in the offender group and 20 years (range 18-24 years) in the

non-offender group, with no significant between-group differences. There were no differences in regard to the mean estimated IQ between the offenders group (IQ = 96, 95%CI 90-102) and the control group (IQ = 102, 95%CI 96-108).

There were significant between-group differences in educational attainment ($p < 0.01$): while the non-offenders had, on average, 10.1 (95%CI 9.5-10.7) years of schooling, the offenders had only 7.7 (95%CI 6.9-8.5) years on average.

The mean PCL-R scores for the two groups are presented in Table 1. A significant difference was observed between these two groups in terms of the mean total PCL-R scores, including 17 corrected items ($p < 0.01$), and isolated factors 1 ($p < 0.01$) and 2 ($p < 0.01$).

The ANCOVA used to compare the mean PCL-R scores between the groups, controlling for educational level, showed that the difference in PCL-R scores remained statistically significant ($p < 0.01$) in the presence of this covariable.

Discussion

In this study, we used the PCL-R assessment to examine the presence of psychopathic traits in young offenders. We selected only young people whose PCL-R scores were not consistent with a diagnosis of psychopathy, as our objective was to evaluate whether young offenders presented different psychopathic traits when compared to non-offenders with similar socioeconomic characteristics, in the absence of psychopathy itself.

Although the groups presented similar average intelligence and age, the difference in educational attainment was statistically significant. Other authors have already found a relationship between low educational level and juvenile delinquency.^{18,27} Nevertheless, when ANCOVA was carried out taking into account the differences in years of schooling between the two groups, the difference in mean PCL-R scores remained statistically significant ($p < 0.01$). Hence, we can conclude that psychopathic traits assessed by PCL-R were independent from educational level at the ≤ 0.05 significance level.

The mean total PCL-R score of offenders was 13.4 (95%CI 11.6-15.1), which is consistent with the presence of psychopathic traits according to Morana, who suggests that scores ranging from 12-23 are indicative of psychopathic traits in Brazil.²⁸ The mean total PCL-R score in the offender group was near the lower limit for characterization of psychopathic traits, suggesting that this sample

of offenders could not be considered frankly psychopathic. Nevertheless, the between-group differences in regard to total PCL-R scores strongly indicate a greater severity of psychopathic traits in the offender group as compared with the control group.

To evaluate which features were most important for this difference in our sample, we compared the PCL-R scores for factors 1 and 2 independently. We found statistically significant between-group differences with respect to both factors, indicating group differences both in regard to interpersonal/affective characteristics and lifestyle/anti-social behavior. Previous studies in samples of individuals with severe psychopathy have reported similar findings,^{2,3,5} and, based on our results, we can postulate that both constitutional and psychosocial aspects of personality influence the emergence of delinquency in juveniles who do not meet criteria for psychopathy itself.

When comparing the factor scores within each group, the ratio was similar in the two groups, both of which displayed factor 2 scores that were approximately 3.5 times higher than factor 1 scores. This suggests that the offender group was not influenced by a proportionally higher vulnerability to either inherited traits or environmental aspects as compared to the control group, although the PCL-R scores in the sample as a whole were influenced mostly by environmental aspects. This finding is consistent with the notion put forward by Forth & Burke,³ who suggested that typical behaviors of youth are strongly influenced by environmental aspects.

The results of the present investigation must be interpreted with caution, given the several limitations of the study. First, we did not employ instruments devised to assess family history or family structure of the participants, and these aspects may influence the relationship between personality traits and offending behavior in youths, as noted earlier. Future studies are needed to investigate such influences in our environment. Second, our PCL-R scores for the control group were lower relative to those of the control groups used in other studies,^{20,21} where authors found PCL-R scores ranging from 5.4 to 8.5 in controls; this pattern could be related to relatively high indices of educational attainment in our control group. This should be acknowledged as a limitation, as our control group may not be representative of the Brazilian youth population as a whole. Third, it should be noted that the PCL-R was validated in samples of individuals older than the 18-year-old participants of the current study. To minimize this bias, we excluded from our analyses those items of the PCL-R associated with sex life and others which are typically exercised to a greater degree in later stages of life.

Table 1 Mean total score, factor 1 score, and factor 2 score of the PCL-R scale for the offender and non-offender groups

Group	N	Mean total PCL-R score (95%CI)*	Mean factor 1 score (95%CI)	Mean factor 2 score (95%CI)
Offenders	39	13.4 (11.6-15.1)	2.5 (1.8-3.1)	8.9 (7.7-10)
Non-offenders	32	2.1 (0.85-3.3)	0.4 (0.1-0.6)	1.4 (0.5-2.3)
Difference		11.3 (9.2-13.4)	2.1 (1.4-2.8)	7.5 (6.0-8.9)
p-value		< 0.01	< 0.01	< 0.01

95%CI = 95% confidence interval; PCL-R = Psychopathy Checklist Revised.

* Corrected for 17 items (three items – promiscuity, short-term marital relationships, and criminal versatility – were excluded).

The above limitations notwithstanding, it should be noted that, although there is a vast literature evaluating the relationship between psychopathy and juvenile delinquency,^{2,3,19} few of those studies have specifically addressed psychopathic traits in young offenders as compared with other juveniles in similar socioeconomic conditions. Therefore, we believe that the current study contributes to bridge this gap.

On the basis of our results, we conclude that significant personality differences, specifically in regard to psychopathic traits, exist between young offenders and non-offenders, even when excluding psychopathy and other mental disorders from assessment. Based on the results obtained with factors 1 and 2 of the PCL-R scale, we found that the presence of primary (interpersonal/affective characteristics) and secondary (lifestyle/antisocial behavior) psychopathic aspects differed between these groups, suggesting a need for wide-ranging interventions – not restricted to socioeconomic aspects – for the management of juvenile delinquency. Further studies focusing on specific biological and psychosocial factors are necessary to clarify the complex issue of the causes of juvenile delinquency, especially in socioeconomically disadvantaged contexts.

Disclosure

The authors report no conflicts of interest.

References

- Morana HC. Identificação do ponto de corte para a escala PCL-R (Psychopathy Checklist Revised) em população forense brasileira: caracterização de dois subtipos de personalidade; transtorno global e parcial [dissertation]. São Paulo: Faculdade de Medicina, Universidade de São Paulo; 2003.
- Campbell MA, Porter S, Santor D. Psychopathic traits in adolescent offenders: an evaluation of criminal history, clinical, and psychosocial correlates. *Behav Sci Law*. 2004;22:23-47.
- Edens JF, Skeem JL, Cruise KR, Cauffman E. Assessment of "juvenile psychopathy" and its association with violence: a critical review. *Behav Sci Law*. 2001;19:53-80.
- Karpman B. The myth of the psychopathic personality. *Am J Psychiatry*. 1948;104:523-34.
- Kimonis ER, Skeem JL, Cauffman E, Dmitrieva J. Are secondary variants of juvenile psychopathy more reactively violent and less psychosocially mature than primary variants? *Law Hum Behav*. 2011;35:381-91.
- Skeem J, Johansson P, Andershed H, Kerr M, Louden JE. Two subtypes of psychopathic violent offenders that parallel primary and secondary variants. *J Abnorm Psychol*. 2007;116:395-409.
- Loper AB, Hoffschmidt SJ, Ash E. Personality features and characteristics of violent events committed by juvenile offenders. *Behav Sci Law*. 2001;19:81-96.
- Blackburn R, Logan C, Donnelly JP, Renwick JD. Identifying psychopathic subtypes: combining an empirical personality classification of offenders with the psychopathy checklist-revised. *J Pers Disord*. 2008;22:604-22.
- Laurell J, Belfrage H, Hellstrom A. Facets on the psychopathy checklist screening version and instrumental violence in forensic psychiatric patients. *Crim Behav Ment Health*. 2010;20:285-94.
- Del Gaizo A, Falkenbach DM. Primary and secondary psychopathic traits and their relationship to perception and experience of emotion. *Pers Individ Dif*. 2008;45:206-12.
- Hare RD, Neumann CS. Psychopathy: assessment and forensic implications. *Can J Psychiatry*. 2009;54:791-802.
- Poythress NG, Edens JF, Skeem JL, Lilienfeld SO, Douglas KS, Frick PJ, et al. Identifying subtypes among offenders with antisocial personality disorder: a cluster-analytic study. *J Abnorm Psychol*. 2010;119:389-400.
- Barros DM. Correlação entre grau de psicopatia, nível de julgamento moral e resposta psicofisiológica em jovens infratores [dissertation]. São Paulo: Faculdade de Medicina, Universidade de São Paulo, 2011.
- Atilola O. Different points of a continuum? Cross sectional comparison of the current and pre-contact psychosocial problems among the different categories of adolescents in institutional care in Nigeria. *BMC Public Health*. 2012;12:554.
- Campbell R, Porter S, Santor D. Psychopathic traits in adolescent offenders: an evaluation of criminal history, clinical, and psychosocial correlates. *Behav Sci Law*. 2004;22:23-47.
- Cheng Y, Hung AY, Decety J. Dissociation between affective sharing and emotion understanding in juvenile psychopaths. *Dev Psychopathol*. 2012;24:623-36.
- Curto BM, Paula CS, do Nascimento R, Murray J, Bordin IA. Environmental factors associated with adolescent antisocial behavior in a poor urban community in Brazil. *Soc Psychiatry Psychiatr Epidemiol*. 2011;46:1221-31.
- Domes G, Hollerbach P, Vohs K, Mokros A, Habermeyer E. Emotional empathy and psychopathy in offenders: an experimental study. *J Pers Disord*. 2013;27:67-84.
- Monahan KC, Steinberg L, Cauffman E, Mulvey EP. Trajectories of antisocial behavior and psychosocial maturity from adolescence to young adulthood. *Dev Psychol*. 2009;45:1654-68.
- Glowacz F, Born M. Do adolescent child abusers, peer abusers, and non-sex offenders have different personality profiles? *Eur Child Adolesc Psychiatry*. 2013;22:117-25.
- Hare RD. The hare psychopathy checklist-revised (PCL-R). Toronto: Multi-Health Systems; 1991.
- Morana HC, Arboleda-Flórez J, Câmara FP. Identifying the cutoff score for the PCL-R scale (psychopathy checklist-revised) in a Brazilian forensic population. *Forensic Sci Int*. 2005;147:1-8.
- Amorim P. Mini International Neuropsychiatric Interview (MINI): validação de entrevista breve para diagnóstico de transtornos mentais. *Rev Bras Psiquiatr*. 2000; 22:106-15.
- Drake RE, Mueser KT, McHugo GJ. Clinician rating scales: Alcohol Use Scale (AUS), Drug Use Scale (DUS), and Substance Abuse Treatment Scale (SATS). In: Sederer L, Dickey B, editors. *Outcomes assessment in clinical practice*. Baltimore: Williams & Wilkins, 1996.
- Wechsler D. WAIS III: Escala de Inteligência Wechsler para adultos: manual técnico. Adaptação: Nascimento E. São Paulo: Casa do Psicólogo; 2004.
- Associação Brasileira de Empresas de Pesquisa (ABEP). Critério de Classificação Econômica Brasil (CCEB). Available from: URL: <http://www.abep.org/novo>.
- Hanoch Y, Gummerum M, Rolison J. Second-to-fourth digit ratio and impulsivity: a comparison between offenders and nonoffenders. *PLoS One*. 2012;7:e47140.
- Morana HC, Câmara FP, Arboleda-Flórez J. Cluster analysis of a forensic population with antisocial personality disorder regarding PCL-R scores: differentiation of two patterns of criminal profiles. *Forensic Sci Int*. 2006;164:98-101.