Childhood predictors of adult psychopathy scores among males followed from age 6 to 33

Jean-Marie Bamvita[a,h,*], Peter Larm[b], Dave Checknita[c], Frank Vitaro[a,d], Richard E. Tremblay[e,i,j], Gilles Côté[f], Sheilagh Hodgins[g]

[a] Université de Montréal, GRIP Université de Montréal, CP 6128 Succ Centre-Ville (Pavillon 3050), Montréal, Québec H3C 3J7, Canada
[b] School of Health, Care and Social Welfare, Mälardalens University, Västerås, Box 883, 72123 Västerås, Sweden
[c] Centre for Clinical Research, Uppsala University, Västmanland County Council, Psychiatry Building R5:00 c/o Jari Tiihonen, Karolinska Universitetssjukhuset, 171 76 Stockholm, Sweden
[d] Research Group on Child Psychosocial Maladjustment, Université de Montréal, Montréal and School of Psychoéducation, Montréal, Canada
[e] Department of Pediatrics, University of Montreal, Dublin, Ireland
[f] Psychology Department, Université du Québec à Trois-Rivières, Institut Philippe-Pinel de Montréal, 10905 Henri-Bourassa East, Montréal H1C 1H1, Canada
[g] Institut Universitaire en Santé Mentale de Montréal, Département de Psychiatrie, Université de Montréal, GRIP Université de Montréal, CP 6128 Succ Centre-Ville (Pavillon 3050), Montréal, Québec H3C 3J7, Canada
[h] Department of Clinical Neuroscience, Karolinska Institutet, Administration, Tomtebodavägen 18A, plan5, 171 77 Stockholm, Sweden
[i] School of Public Health, University College, Dublin, Ireland
[j] Department of Psychiatry, University of Montreal, Dublin, Ireland

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ABSTRACT

Purpose: Psychopathic traits are associated with multiple negative outcomes. The present prospective, longitudinal study identified associations of childhood factors with adult psychopathy scores.
Methods: 311 men, aged, on average, 33 years, were assessed using the Psychopathy Checklist-Revised (PCL-R). Predictors included neighbourhood deprivation, parents' characteristics, teacher ratings of behaviour at ages 6, 10 and 12, and academic performance at age 12. Hierarchical linear regression models were computed to identify predictors at different ages of PCL-R total and facet scores.
Results: Age 33 PCL-R total and facet scores were significantly, and independently, associated with father's and mother's criminality and mother's age at participant's birth when teacher ratings of childhood behaviours and mathematics marks were included in the models. Anxiety was negatively associated with facet 1 scores at age 6. At age 12, 22% of the variance in facet 2 scores was predicted by father's violent convictions, mother's age and criminal charges, and reactive aggression. Facet 3 scores were associated with mother's age (marginally), inattention, and reactive aggression. Facet 4 scores were associated with father's violent criminality, mother's age, conduct problems, inattention, and reactive aggression.
Conclusion: Etiological research and prevention programs should focus on antecedents of psychopathic traits present in early childhood.

1. Introduction

Psychopathic traits include superficial charm, shallow emotions, lack of empathy, lack of guilt or remorse, irresponsibility, impulsivity, deceitfulness, and persistent antisocial behaviours (Hare, 2006). These traits vary dimensionally in the population and are associated with a multitude of negative outcomes in adulthood for the individual presenting the traits, for those with whom he/she has contact, including offspring, and for society at large (Asscher et al., 2011; Beaver et al., 2014; Frick, 2009; Frick & Viding, 2009; Hemphälä & Hodgins, 2014; Patrick, Zempolich, & Levenston, 1997). The financial and human costs of psychopathy are high, especially given the association with violent criminality (Hare, 2003). Further, studies of community samples have shown that by adolescence these traits show moderate to high rank-order stability into adulthood, are associated with distinct neural abnormalities of gray matter (Vieira et al., 2015), white matter (Lindner et al., 2011; Vieira et al., 2015), and function (Carre, Hyde, Neumann, Viding, & Hariri, 2013), and that antecedents of psychopathic traits may

possibly be identified as early as age 3 (Fanti & Kimonis, 2017). These findings suggest that further knowledge of the development of psychopathic traits offers the potential to modify behavioural antecedents in an effort to reduce psychopathic traits and the associated negative outcomes by adolescence. The present study assessed psychopathic traits among 311 men aged 33 years. These men had been recruited into a longitudinal study that was initiated in the mid-1980's when little, or nothing, was known about childhood predictors of adult psychopathic traits. However, the study included teacher-ratings of childhood behaviours from which we selected predictors based on current evidence. The study also included a measure of neighbourhood deprivation and parent characteristics including their official criminal records. The aim was to identify childhood (up to and including age 12) predictors of psychopathic traits at age 33.

Available evidence consistently suggests that psychopathy traits, like other personality traits (Roberts & DelVecchio, 2000), show moderate to high rank-order stability and high levels of individual stability from mid-adolescence to early adulthood (Lynam, Loeber, & Stouthamer-Loeber, 2008). One paper from the Pittsburgh Youth Study concluded: "Boys who were high in psychopathy at 13 tended to remain high at age 24 regardless of their status on the moderators." (Lynam et al., 2008; p. 238). Only eight of 65 tests to identify factors that modified the stability of psychopathy scores from age 13 to 24 were statistically significant. Physical punishment and peer delinquency interacted with age 13 psychopathy to predict total age 24 psychopathy scores and scores on facets 1 and 4; family socioeconomic status interacted with age 13 psychopathy to predict scores on facets 2 and 3. Importantly, these factors moderated stability among boys with low not high psychopathy scores at age 13. Another study of males and females showed high rank-order stability from mid-adolescence to young adulthood, with Psychopathy Checklist:Youth Version (PCL:YV) scores (Forth, Kosson, & Hare, 2003), explaining 46% of the variance in Psychopathy Checklist-Revised (PCL-R) scores (Hare, 2003). Similarly, rank order stability of facet scores was moderate to high (Hemphälä, Kosson, Westerman, & Hodgins, 2015). Again stability was higher among participants who had obtained higher PCL:YV scores in mid-adolescence. A study of all 1500 boys in the Pittsburgh Youth Study (Lynam et al., 2009) reported high stability in psychopathic traits from age 7 to 17.

In adulthood, psychopathic traits are assessed using the PCL-R. Factor analyses have identified two higher order factors, one personality, one behavioural, each composed of two facets: facet 1 indexes an arrogant, deceitful interpersonal style; facet 2 affective deficiency; facet 3 impulsive, irresponsible behavioural style; and facet 4 antisocial behaviour (Hare, 2003; Kotler & McMahon, 2005; Larsson, Andershed, & Lichtenstein, 2006; Piquero et al., 2012; Storey, Hart, Cooke, & Michie, 2016). To the best of our knowledge, only two prospective, longitudinal studies, the Cambridge Study of Delinquent Development (Piquero et al., 2012; Piquero, Farrington, & Blumstein, 2007) and a study of a clinical sample of boys with disruptive disorders (Burke, Loeber, & Lahey, 2007) have examined childhood predictors of adult psychopathic traits assessed by clinicians using either the PCL-R or Psychopathy Checklist Screening Version: PCL:SV (Hart, Cox, & Hare, 1995).

One report (Piquero et al., 2012) from the Cambridge Study of Delinquent Development, followed 365 males from ages 8–10 to 48 when they were assessed with the PCL:SV. Following an earlier study (Piquero et al., 2007), two indices were associated with PCL:SV scores: Individual risk factors (low junior school attainment, daring disposition, small height, low nonverbal IQ, nervous/withdrawn, high extraversion, high neuroticism, psychomotor impulsivity, dishonest, unpopular, troublesome, lacks concentration/restless); and environmental risk factors (harsh attitude/discipline of parents, teen mother at birth of first child, behaviour problems of siblings, criminal record of a parent, delinquent older sibling, large family size, poor housing, low family income, parental disharmony, neurotic/depressed father, neurotic/

depressed mother, low socioeconomic status, separated parents, poor supervision, high delinquency rate at school). Individual and environmental factors predicted total PCL-SV and facet 1 and 4 scores, environmental factors predicted facet 2 and 3 scores. Total variance explained ranged from an R^2 of 0.181 for total scores, 0.051 facet 1, 0.077 facet 2, 0.083 facet 3, and 0.222 facet 4. In another publication focusing on this same sample, bivariate Odds Ratios for age 48 total PCL:SV scores, that exceeded a value of 2 included predictors measured from age 8 to 11 years: poor supervision, harsh discipline, father uninvolved, physical neglect, disrupted family, large family size, father and mother's criminal convictions, delinquent sibling, young mother, low socioeconomic status and income, poor housing, maternal depression, unpopular, delinquency, low performance and verbal IQ, poor academic achievement, daring, concentration problems, impulsivity, dishonesty, and troublesome (Farrington, 2006).

Burke and colleagues (Burke et al., 2007) examined a clinical sample of 163 boys who presented disruptive behaviour disorders at 11 to 12 years who were followed to age 19 when they were assessed using the PCL-R. The predictors were: child psychopathology, IQ, parent and teacher rated interpersonal callousness, parenting behaviours (harsh physical punishment, poor parental communication behaviours), parental psychopathology, maternal age, prenatal tobacco exposure, and socioeconomic status of the family and neighbourhood disadvantage. The personality factor (sum of facet 1 and 2 scores) was predicted by conduct disorder, teacher-rated callousness, prenatal smoking, neighbourhood disadvantage, and IQ. The behavioural factor scores were predicted by conduct disorder, teacher rated callousness, IQ, urban residence, and maternal age. In sum, evidence shows that psychopathic traits are associated with multiple negative outcomes and some evidence shows that the traits are moderately stable from adolescence to adulthood, suggesting that factors determining the traits act prior to adolescence.

The present study aimed to identify factors at age 6 when boys entered school, at age 10, and at age 12 that predicted PCL-R total and facet scores at age 33. The two previous prospective studies of adult PCL-R or PCL:SV scores indicated that neighbourhood adversity, family factors, individual parent characteristics, and childhood behaviours were associated with psychopathic traits in adulthood. In order to contribute information that may be useful to designing early childhood intervention programs to reduce or eliminate precursors of psychopathic traits, it is not only essential to collect information prospectively on a wide range of possible precursors, but also to identify when during childhood the precursor is observed. Further, information on precursors needs to be obtained in a relatively cost-effective manner. Finally, it is important to take account of predictors at one age that are associated with similar predictors at a later age. Hierarchical linear regressions, but not multiple linear regressions, achieve this goal. Knowing the magnitude of effects of those variables and the variance explained by each block of variables provides knowledge that could be used to inform intervention programs targeting specific risk factors from early childhood through adolescence.

2. Method

2.1. Participants

Participants were males drawn from two cohorts: the Montreal Longitudinal and Experimental Study (MLES) (Tremblay et al., 1991) and the Quebec Longitudinal Study of Kindergarten Children (QLSKC) (Rouquette et al., 2014). The MLES cohort included 1037 boys born to French-speaking parents, who were recruited while attending kindergarten in a low socioeconomic status neighbourhood of Montreal. The QLSKC cohort was composed of 3018 boys and girls randomly and proportionally selected from French-speaking kindergarten classes, according to the 11 administrative districts of the Quebec province. From these 3018 children, a random sample of 1001 boys was selected. From