



Universiteit
Leiden
The Netherlands

Testing the utility of the psychopathy construct for predicting criminal recidivism among detained girls

Colins, O.F.; Damme, L. van; Andershed, H.

Citation

Colins, O. F., Damme, L. van, & Andershed, H. (2022). Testing the utility of the psychopathy construct for predicting criminal recidivism among detained girls. *Journal Of Criminal Justice*, 80. doi:10.1016/j.jcrimjus.2020.101774

Version: Publisher's Version

License: [Creative Commons CC BY 4.0 license](#)

Downloaded from: <https://hdl.handle.net/1887/3561463>

Note: To cite this publication please use the final published version (if applicable).



Testing the utility of the psychopathy construct for predicting criminal recidivism among detained girls

Olivier F. Colins^{a,b,c,*}, Lore Van Damme^a, Henrik Andershed^b

^a Ghent University, Ghent, Belgium

^b Örebro University, Örebro, Sweden

^c Curium-Leiden University Medical Center, Leiden, the Netherlands

ARTICLE INFO

Keywords:

Conduct disorder
Females
Limited prosocial emotions, prognosis
Substance use disorder

ABSTRACT

Few studies have scrutinized the prospective relation between psychopathy and criminality in detained girls. Consequently, it is not well known if the psychopathy construct adds to the prediction of recidivism over other risk factors, such as conduct disorder and past criminality. To address this research gap, the current study examined data from 302 detained girls (*M* age = 16.2). Psychopathy total and component (i.e., narcissism, callous-unemotional, and impulsivity) scores were derived from the self-report version of the Antisocial Process Screening Device (APSD). Latent profile analysis was used to identify girls with high scores on the three components (tentatively labeled 'putative psychopathic personality'). Five youth recidivism outcomes were measured (i.e., violent, serious non-violent, drug, total, and versatile), based on arrest charges that occurred before girls were 18 years of age. With a few exceptions, neither the ASPD total nor the APSD component scores contributed to the prediction of the recidivism outcomes. Girls with a putative psychopathic personality also were not at increased risk for recidivism. Findings overall suggest that the psychopathy construct should not be used for risk assessment purposes among detained girls, at least not when assessed via the self-report version of the APSD.

1. Introduction

Adult psychopathic personality, or psychopathy, is often defined as a severe multifaceted personality disorder comprised of a constellation of co-occurring traits that load on interpersonal, affective, behavior/lifestyle, and, possibly, antisocial dimensions (e.g., Cooke & Michie, 2001; Hare & Neumann, 2008). Adults with psychopathy are likely to have had conduct disorder in childhood (e.g., Abramowitz, Kosson, & Seidenberg, 2004; Johansson, Kerr, & Andershed, 2005), to engage in alcohol and drug use (e.g., Colins, Fanti, Salekin, & Andershed, 2017; Walsh, Allen, & Kosson, 2007), and to commit crimes (e.g., Hicks, Vaidyanathan, & Patrick, 2010; Skeem, Johansson, Andershed, Kerr, & Loudon, 2007). These individuals clearly cause substantial destruction to the self and the community (Kiehl & Hoffman, 2011).

To identify these individuals earlier in life, and to increase the chances to intervene successfully, the psychopathy concept has been extended downward in age to adolescence and childhood (Salekin &

Lynam, 2010), including early childhood (Colins et al., 2014). Child and adolescent psychopathy assessment tools typically do not include an antisocial component (Colins & Andershed, 2018), because they were explicitly designed to be uncontaminated with criminal behavior (e.g., juvenile delinquency), or because the few items that tap such behaviors do not load on an antisocial component (Andershed, Kerr, Stattin, & Levander, 2002; Colins, Andershed, et al., 2014; Frick, Bodin, & Barry, 2000; Lynam et al., 2005).¹ The omission of the antisocial component, however, might have important consequences for clinicians in applied settings who want to use child and adolescent psychopathy tools for risk assessment purposes (Colins et al., 2017; Verschuere, Candel, Reenen, & Korebrits, 2012). Specifically, burgeoning evidence suggests that the prospective relation with criminal recidivism among adults is largely driven by the psychopathy construct's antisocial component (e.g., Kennealy, Skeem, Walters, & Camp, 2010). Nevertheless, it must be acknowledged that there are studies showing that the Psychopathy Checklist-Revised (PCL-R; Hare, 2003) total score is still predictive of

* Corresponding author at: Ghent University, Faculty of Psychology & Educational Sciences, Department of Special Needs Education, H. Dunantlaan 2, B-9000 Gent, België.

E-mail address: Olivier.colins@ugent.be (O.F. Colins).

¹ For two notable exceptions, see the Psychopathy Checklist: Youth Version (PCL:YV; Forth, Kosson, & Hare, 2003), and the Proposed Specifiers for Conduct Disorder (López-Romero et al., 2019; Salekin & Hare, 2016).

future crime after removing the antisocial component (Vitacco, Neumann, & Jackson, 2005; Walters, Knight, Grann, & Dahle, 2008), a finding that has been replicated among adults while relying on various self-report tools that do not index criminal behavior (Colins, Andershed, & Pardini, 2015; Vitacco, Neumann, & Pardini, 2014; Walters, 2015).

Clearly, it is of indisputable relevance to study if psychopathy tools that do not include an antisocial component, such as the Antisocial Process Screening Device (APSD; Frick & Hare, 2001) or the Youth Psychopathic Traits Inventory (Andershed et al., 2002), are predictive of recidivism in already criminal justice-involved youth. Research with these tools among community-residing boys and girls has shown prospective relations between psychopathy total or component scores and antisocial outcomes, such as aggression, conduct problems, and criminality (e.g., Fanti, Kyranides, Lordos, Colins, & Andershed, 2018; McMahon, Witkiewitz, & Kotler, 2010; Salihovic & Stattin, 2017; Shaffer et al., 2016; van Baardewijk, Vermeiren, Stegge, & Doreleijers, 2011). Nevertheless, there is evidence that psychopathy tools without an antisocial component have limited or no predictive utility in criminal justice-involved adolescents (e.g., Cauffman, Kimonis, Dmetrieva, & Monahan, 2009; Colins, Fanti, Andershed, Mulder, et al., 2017; Colins, Vermeiren, De Bolle, & Broekaert, 2012). Thus, findings from community samples may have limited generalizability to forensic samples, underscoring the importance of studying the psychopathy-recidivism link in criminal justice-involved youth.

Unfortunately, it is still unclear if psychopathy scores have predictive utility in criminal justice-involved girls. In fact, the overwhelming majority of studies with criminal justice-involved youth have focused on males, which should come as no surprise since girls still represent a minority of forensic populations (e.g., de Vogel & de Spa, 2019). Criminal justice-involved girls are more often incarcerated for protectionist purposes (Corrado, Odgers, & Cohen, 2000), and more troubled (e.g., Chaplo, Kerig, Modrowski, & Bennett, 2017; Van Damme, Colins, & Vanderplassen, 2014) than their male counterparts. Therefore, criminal justice-involved girls constitute a unique population that cannot be understood simply by extrapolating what is known about criminal justice involved-boys.

Empirical work with criminal justice-involved girls on the psychopathy-recidivism link, nevertheless, is scarce, yielded mixed findings, and most often relied on small samples ($N < 100$). Prior work showed that the Psychopathy Checklist: Youth Version (PCL:YV; Forth et al., 2003) total score and component scores other than the antisocial component were predictive of violent, non-violent, and general recidivism (e.g., Dyck, Campbell, Schmidt, & Wershler, 2013; Stockdale, Olver, & Wong, 2010), whereas other PCL:YV studies found no or weak prospective positive relations between psychopathy total or component scores and recidivism outcomes (e.g., Schmidt, Campbell, & Houlding, 2011; Schmidt, McKinnon, Chattha, & Brownlee, 2006; Vincent, Odgers, McCormick, & Corrado, 2008). In a sample of 122 detained girls, only the callous-unemotional component of the YPI (Andershed et al., 2002) was positively related to self-reported violence at the 2-year follow-up (Chauhan et al., 2014). None of the three psychopathy components (interpersonal, callous-unemotional, and behavioral/lifestyle) that were assessed by means of the PCL:YV and YPI, was related to delinquent behavior in general and violent offending specifically at the 4.5-year follow-up (Chauhan et al., 2014). Using data from the Pathways to Desistance study, the relationship between psychopathy and self-reported offending was tested in 1354 (184 girls) previously adjudicated delinquents by means of the YPI (Walters, 2015). Results indicated that the YPI total score was predictive of future self-reported offending in males and to lesser extent in females (Walters, 2015). In a sample of 96 detained girls, neither the total score nor the three component scores of the APSD self-report version predicted self-reported violent and non-violent criminality six months after discharge, when controlling for past criminality (Colins, Van Damme, Andershed, Fanti, & DeLisi, 2017). Finally, among 76 detained girls in Portugal, the APSD and YPI total and component scores were not predictive of violent and general recidivism

at the 1- and 2-year follow-up (Pechorro, Ray, Alberto, & Simões, 2020). Some other studies relied on psychopathy self-report tools (APSD or the YPI) to test prospective relations with recidivism in mixed-gender samples of criminal justice-involved youth. Yet, these studies merely included a very small number of girls, did not report results for boys and girls separately, and/or did not control for gender when testing the psychopathy-recidivism link (Asscher et al., 2014; Gillen et al., 2018; Salekin, 2008; Salekin, Debus, & Barker, 2010).² Clearly, it is still premature to conclude that psychopathy scores are, or are not, prospectively related to criminality among criminal justice-involved girls. Consequently, studies on the predictive utility of psychopathy scores in these girls are urgently warranted.

2. This study

The current study was designed to bolster what is known about the psychopathy-recidivism link in a relative large sample of detained girls ($N = 302$). Specifically, it was first tested if psychopathy total and component scores are incrementally predictive of different recidivism outcomes in adolescence, above and beyond other (potential) predictors of future criminality, including past criminality (e.g., Colins, Van Damme, Andershed, Fanti, & DeLisi, 2017), detention history (e.g., Veysey & Hamilton, 2007), conduct disorder (e.g., Colins et al., 2012), and substance use disorder (e.g., Boles & Miotto, 2003). Addressing this issue is particularly relevant in the light of the stigmatizing and harmful effects labels such as ‘psychopathic traits’ may have on legal decision making (e.g., Edens, Magyar, & Cox, 2013). Thus, clinicians and researchers may refrain from using psychopathy measures for risk assessment purposes if these measures fail to demonstrate added value beyond other, likely less prejudicial information (e.g., Edens, Campbell, & Weir, 2006).

Second, we tested if psychopathy total and component scores are stronger predictors of different recidivism outcomes, when co-occurring with conduct disorder, past criminality, and detention history. These three latter variables tap features that are to some extent reflected in the antisocial psychopathy component, and allowed us to better understand the role of this component for the prediction of crime. Importantly, by doing so, we were also responsive to recent calls to enhance what is known about the connection between psychopathy components other than callous-unemotional traits and conduct disorder, where there is still less than optimal knowledge (Salekin, 2016). In line with the special issue’s interest in understanding if the prospective relation between psychopathy and crime is moderated by co-morbidity with substance misuse, we also tested if a significant interactive effect between psychopathy scores and substance use disorder emerged in the prediction of recidivism.

Third, testing relations between psychopathy total or component scores and recidivism, is not sufficient to test if *psychopathic personality* is a risk factor for future crime (e.g., Colins, Andershed, Salekin, & Fanti, 2018; Lilienfeld, 2018). Defining youth psychopathic personality as a constellation of co-occurring traits implies that individuals with psychopathy are high on all three (or four) psychopathy dimensions, and requires analytical strategies that take this constellation into account (e.g., Andershed et al., 2018; Colins, Fanti, Salekin, & Andershed, 2017; Verona, Sprague, & Javdani, 2012). Therefore, person-oriented analysis (i.e., latent profile analysis) was performed to identify a subgroup of girls who scored high on all three psychopathy components.

² Interestingly, the Salekin (2008) study showed that various psychopathy measures (e.g., PCL:YV and the APSD) had incremental utility in predicting general and/or violent recidivism above and beyond 14 control variables.

3. Method

3.1. Participants

Placement in a youth detention center (YDC) represents the most severe measure available to a juvenile judge in Belgium, and given the limited capacity, only girls demonstrating the most severe criminal and behavioral problems are assigned to this YDC, on average for three months (Agentschap Jongerenwelzijn, 2014). To recruit a substantial sample of detained female adolescents (younger than 18), girls were recruited during six different periods between July 2008 and June 2014. These different periods of data-collection were required to collect data from a large sample of detained girls, especially since the YDC only had a capacity for 40 girls at the time of the data-collection. Detained girls were eligible to participate in the study if they had an expected minimum detention duration of one month (i.e., to allow time for recruitment and assessment) and had sufficient knowledge of Dutch and cognitive abilities. The latter two criteria were based upon both staff and researcher’s assessment of the adolescent’s ability to participate in Dutch conversations and to read and comprehend the informed consent form and questionnaires. During these six periods, a total of 487 unique girls were detained in the YDC, of which 96 were not eligible according to our inclusion criteria. Of the 391 eligible girls, 14 were not approached in time to participate in the study, 30 refused to participate, five could not be assessed because of practical circumstances, and four did not complete the full battery of study instruments, resulting in a sample size of 338. For 302 of these 338 girls official arrest records and APSD data were available. Of these 302 girls (*M* age = 16.2%; *SD* = 1.06), 76 (25.2%) were from non-Belgian origin, 169 (56.0%) from families with a low socioeconomic status (SES), and 80 (26.5%) girls had been detained in the past. In addition, 97 (32.1%), 105 (34.8%), and 50 (16.7%) girls were charged in the past for violent, serious non-violent, and drug crimes, with 170 (56.3%) girls were charged for at least one of these types of crime (Table 1).

3.2. Procedure

Participants were approached and assessed following a standardized protocol. The introduction and assessment were conducted in a private area in the YDC, typically within the first three weeks of detention, by

Table 1
Descriptive information in terms of past and future arrest (*N* = 302).

	Number of arrests	Any arrest	1 vs. 2. vs. 3 vs. 4 ≤ arrests
Criminal history	<i>M</i> (<i>SD</i>)	<i>N</i> (%)	<i>N</i> (%)
Violent arrest	0.59 (1.14)	97 (32.1)	57 (18.9) vs. 18 (6.0) vs. 13 (4.3) vs. 9 (3.0)
Serious non-violent arrest	0.64 (1.17)	105 (34.8)	57 (18.9) vs. 27 (8.9) vs. 14 (4.6) vs. 7 (2.3)
Drug arrest	0.26 (0.73)	50 (16.7)	38 (12.6) vs. 4 (1.3) vs. 3 (1.0) vs. 5 (1.7)
Total arrest	1.48 (2.06)	170 (56.3)	65 (21.5) vs. 43 (14.2) vs. 23 (7.6) vs. 39 (12.9)
Criminal recidivism	<i>M</i> (<i>SD</i>)	<i>N</i> (%)	<i>N</i> (%)
Violent arrest	0.37 (1.11) ^a	50 (16.6)	26 (8.6) vs. 13 (4.3) vs. 3 (3.0) vs. 8 (2.0)
Serious non-violent arrest	0.64 (0.69) ^b	170 (56.3)	155 (51.3) vs. 9 (3.0) vs. 4 (1.3) vs. 2 (0.3)
Drug arrest	0.19 (0.56) ^c	40 (13.2)	26 (8.6) vs. 9 (3.0) vs. 5 (1.7) vs. 0 (0.0)
Total arrest	1.20 (1.58) ^d	212 (70.2)	151 (50.0) vs. 27 (8.9) vs. 17 (5.6) vs. 17 (5.6)

^a Skewness = 4.44, kurtosis = 22.38.
^b Skewness = 1.71, kurtosis = 6.93.
^c Skewness = 3.27, kurtosis = 10.99.
^d Skewness = 3.40, kurtosis = 14.99

the second author or trained final-year master-levels students who did not belong to the YDC staff. Selected girls were approached individually and given oral and written information about the aims, the content, and the duration of the study. They were assured that all information provided would remain confidential and that refusal to participate would not affect their judicial status or stay in the YDC. The girls could consult their primary caregivers or other adults about participation, and written informed consent was given before participation. Participating girls did not receive compensation and could ask for help when they did not understand or could not read a question. Details for the procedure can be retrieved in prior work [first four periods (Colins & Andershed, 2015); last two periods (Colins, Van Damme, Andershed, Fanti, & DeLisi, 2017)]. For follow-up purposes, we only collected officially registered arrest data (infra).

4. Measures

4.1. Outcomes: Future charges for crimes during adolescence

We collected participants’ arrest data from the juvenile registration system of the public prosecutor. This registration system provides information about arrest charges that occurred in adolescence (i.e., before 18 years of age).³ Arrest charges that occurred when the girls were adults (i.e., after 18 years of age) are not included in this juvenile registration system. In this study, arrest charges were first categorized into three types of arrest charges that occurred after the baseline assessment protocol: (i) charges for violent crimes, referring to arrest charges for murder, manslaughter, battery, and theft with violence (e.g., armed robbery, extortion); (ii) charges for serious non-violent crimes, referring to charges for burglary, arson, weapon possession, and threats; and (iii) charges for drug crimes, referring to charges for use, possession, and/or dealing drugs. Means (*SD*) for these three types of crimes, and for the omnibus variable ‘total crime’ (i.e., the sum of all violent, serious non-violent, and drug arrest charges), can be retrieved from Table 1. To facilitate comparison with prior work on the topic in adolescents (e.g., Colins, Van Damme, Andershed, Fanti, & DeLisi, 2017; Schmidt et al., 2006; Vincent et al., 2008) and adults (e.g., Camp, Skeem, Barchard, Lilienfeld, & Poythress, 2013; Colins et al., 2015; Vitacco et al., 2014), these four variables were dichotomized (0 = zero arrest charges; 1 = one or more arrest charges) into four recidivism outcomes: ‘future violent arrest’, ‘future serious non-violent arrest’, ‘future drug arrest’, and ‘future total arrest.’⁴ Finally, echoing findings that youth psychopathy is associated with criminal versatility (e.g., Campbell, Porter, & Santor, 2004), we created a fifth outcome, ‘versatile recidivism’ (0 = charges for zero or one type of crime; 1 = charges for two or three types of crime) to delineate a group of girls with a severe pattern of new arrest charges.

4.2. Main predictor: Psychopathy components

The self-report version of the Antisocial Process Screening Device (APSD; Frick & Hare, 2001) was used to assess the interpersonal, callous-unemotional, and behavioral/life-style psychopathy components. The APSD consists of 20 items that must be answered on a 3-point rating scale (0 = not at all true; 1 = sometimes true; 2 = definitely true). A 3-factor solution is the preferred factor structure of the APSD (Frick et al.,

³ Thirty-four (11.3% of the total sample) girls were 17.5 years or older when they enrolled in the study. Of these 34 girls 19 had a new arrest charge before their 18th birthday.

⁴ The skewness and kurtosis of the outcome variables (see Table 1) and the lack of information about exposure time prevented us to perform linear regression or survival analyses, respectively. Table 1 also shows that there was limited variation in frequency of future arrest charges, hampering the use of alternative definitions of future crime (e.g., counts) and analytical approaches (e.g., negative binomial analysis).

2000), comprising an interpersonal component [labeled: Narcissism (NARC), 7 items], an affective component [labeled: Callous-Unemotional (CU), 6 items], a behavioral/lifestyle component [labeled: Impulsivity (IMP), 5 items], and two items that do not load onto any factor (i.e., 'you engage in illegal activities' and 'you lie easily and skillfully'). Psychopathy component scores refer to the sum of the included items in each component. The sum of the 20 items yields a total score for the APSD.

The internal consistency of the APSD self-report version's CU component, has been poor across various studies with criminal justice-involved boys and girls (e.g., Colins, Bijttebier, Broekaert, & Andershed, 2014; Poythress et al., 2006). Therefore, we first investigated the internal consistency of the APSD component and total scores, whilst relying on two indices: Cronbach's alphas (α) and mean inter-item correlation (MIC). Alpha coefficients were interpreted as follows: <0.60 = insufficient; 0.60 to 0.69 = marginal; 0.70 to 0.79 = acceptable; 0.80 to 0.89 = good; and 0.90 or higher = excellent (Barker, Pistran, & Elliot, 1994). Given that Cronbach's alpha depends on the number of items, we also calculated the MIC, which is independent of scale length and should be in the range of 0.15 to 0.50 to be considered acceptable (Clark & Watson, 1995). In the present study, α and MIC were as follows: APSD NARC: $\alpha = 0.64$; MIC = 0.20 ; APSD CU: $\alpha = 0.33$; MIC = 0.08 ; APSD IMP: $\alpha = 0.63$; MIC = 0.26 ; and APSD total score: $\alpha = 0.75$; MIC = 0.13 . In line with past work (e.g., Poythress et al., 2006), additional analyses showed that removing items 19 ("I do not show my emotions to others") and 20 ("I keep the same friends") improved the internal consistency of the APSD CU component ($\alpha = 0.53$; MIC = 0.16). Using this modified CU component score also improved the internal consistency of the APSD total score ($\alpha = 0.77$; MIC = 0.16). Therefore, in all the analyses reported in this paper, we used the modified APSD CU and APSD Total scores. The correlations between the APSD scores were: $0.25^{\text{NARC-CU}}$, $0.48^{\text{NARC-IMP}}$; $0.19^{\text{CU-IMP}}$, $0.82^{\text{NARC-Total}}$; $0.55^{\text{CU-Total}}$, and $0.79^{\text{IMP-Total}}$. All but one (CU-NARC; $p < .01$) of these correlations were significant at $p < .001$.

4.3. Potentially relevant control variables

4.3.1. Conduct and substance use disorders

In line with the majority of DISC-based prevalence studies among detained youth (Beaudry, Yu, Långström, & Fazel, 2020; Colins et al., 2010), the paper-and-pencil child version of the Diagnostic Interview Schedule for Children-fourth version (DISC-IV; e.g., Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000) was used. The DISC-IV is a highly structured, psychiatric diagnostic interview that covers many axis-1 psychiatric diagnoses in the DSM-IV, and can be administered by trained non-clinicians. Prior work has confirmed the reliability and validity of the DISC-IV (Angold et al., 2012; Bravo et al., 2001; D. Shaffer et al., 2000). For the purpose of the current investigation, we used the DISC-IV to determine the past year presence of DSM-IV conduct disorder and substance use disorder (i.e., any alcohol marijuana and/or, other drug use disorders).

4.3.2. Number of past arrest charges

'Number of past violent arrests', 'number of past serious non-violent arrests', and 'number of past drug arrests, refer to the number of arrest charges registered by the aforementioned juvenile registration system for violent, serious non-violent, and drug crimes, respectively (see 3.1), that occurred before the baseline assessment protocol. 'Number of past total arrests' refers to the total number of charges in the past for violent, serious non-violent, and drug crimes.

4.3.3. Past detention

Past detention indicates whether or not the girl had been detained in the past, based on file-information available in the YDC.

4.3.4. Sociodemographic information

Standardized information about age, origin (Belgian versus non-Belgian), and socioeconomic status (low versus high SES), was collected at baseline by means of a self-report questionnaire designed by the authors.

4.4. Plan of analyses

To examine the incremental contribution of APSD component and total scores, we proceeded in two steps. First, a series of logistic regression models were performed to test relations (expressed as Odds Ratios [OR], with 95% confidence intervals [CI]) between APSD scores and the five outcome variables. In these and all subsequent logistic regression analyses, we controlled for the age of the girls at baseline to account for differences in the time at risk (e.g., 17-year-old girls in our sample had less time to committing crimes before age 18 than 14-year-old girls).⁵ Second, when APSD scores were significantly related to the outcomes, we subsequently tested if these scores were incrementally predictive of the outcomes above and beyond control variables. These latter variables were selected from the aforementioned potentially relevant control variables (see 4.3) because they were prospectively related to the outcome variables (see 4.2). Specifically, we presented the block χ^2 statistic and changes in -2 log likelihood ($-2LL$) ratio between the model only including the control variables and the model including the control variables and the APSD score.

To test if APSD scores are stronger predictors of future criminality when co-occurring with proxies of the antisocial psychopathy component or indices of substance use, we performed logistic regression analyses that include the multiplicative interaction term between APSD scores and (i) conduct disorder, (ii) number of past total crimes, (iii) past detention, and (iv) substance use disorder.

Echoing a series of recent child and adolescent psychopathy studies that applied model-based clustering techniques (e.g., Colins, Fanti, Salekin, Mulder, & Andershed, 2017; da Silva, Salekin, & Rijo, 2019; Gill & Stickle, 2016), we aimed to identify girls who were high on all three APSD components, and, therefore, were likely to exhibit a psychopathic personality. Specifically, latent profile analysis (LPA) were performed using Mplus 8.4 statistical software (Muthén & Muthén, 2017).⁶ LPA is a model-based clustering technique and is considered a specific case of finite-mixture modeling (McLachlan & Peel, 2000; Vermunt & Magidson, 2006). Classes (i.e., groups) are identified through maximum likelihood estimation, and all the observed indicator variables are continuous (Muthén & Muthén, 2011). Models that specify different numbers of latent classes are tested. Details about the statistical criteria used to compare models to identify the optimal number of groups to retain are provided in Table 5. The viability of the latent classes was explored by testing differences between classes using one-way analyses of variance for continuous variables (e.g., number of past total crimes) and chi-square χ^2 tests for categorical variables (e.g., conduct disorder). Finally, the above mentioned logistic regression analyses were repeated whilst including the latent class variable as predictor of future criminality, instead of the APSD component and total scores.

Statistical analyses were performed using SPSS 25.0, unless

⁵ Age was significantly negatively related to future violent arrest (OR = 0.45 ; 95% CI = $0.33, 0.62$), future serious non-violent arrest (OR = 0.78 ; 95% CI = $0.63-0.97$), future total arrest (OR = 0.66 ; 95% CI = $0.52-0.84$), and versatile recidivism (OR = 0.59 ; 95% CI = $0.44-0.80$), but not to future drug arrest (OR = 0.91 ; 95% CI = $0.67-1.24$).

⁶ Prior work with community samples applied a more theory-driven approach to identify children and adolescent who were simultaneously high (e.g. 1 SD above the mean) on each of the three psychopathy component scores (e.g., Colins et al., 2018; Frogner, Gibson, Andershed, & Andershed, 2018). Using an 1SD based cut-off merely identified 10 girls (3.3%) of our sample to be simultaneously high on all three APSD components.

otherwise specified. All tests were two-tailed, with 0.05 as the standard for statistical significance.

5. Results

5.1. Descriptive information

The mean APSD total score was 13.96 (*SD* = 5.51), and the mean score for the Narcissism (NAR) component was 4.30 (*SD* = 2.61), for the Callous-Unemotional (CU) component score 2.71 (*SD* = 1.73), and for the Impulsivity (IMP) component score 5.32 (*SD* = 2.22). In addition, 56.5% (*n* = 169) and 68.5% (*n* = 207) of the total sample of girls met criteria for conduct disorder and substance use disorder, respectively. Table 1 displays means (*SD*) and frequencies for predictors and outcome variables referring to past and future criminality. Though not reported in Tables 1, 44 girls (14.5%) met our definition of versatile recidivism, with four girls having charges for all three types of crimes, 20 girls having charges for violent and serious non-violent crimes, eight girls having charges for violent and drug crimes: and 12 girls having charges for serious non-violent and drug crime.

5.2. Selecting control variables

Table 2 shows that number of past violent arrests, number of past total arrests, and past detention were predictive of future violent arrest, and, therefore, are to be used when investigating the incremental contribution of the APSD scores in predicting future violent arrest. Likewise, substance use disorder was predictive of future serious non-violent arrest, whereas number of past drug crimes, number of past total crimes, and conduct disorder were predictors of future drug arrest. Hence, these predictors must be considered when testing the incremental contribution of the APSD scores in predicting both outcomes. None of the possibly relevant control variables were prospectively related to future total crime. Table 2, finally, demonstrates that conduct disorder was the only control variable to be considered when testing the incremental contribution of APSD scores in predicting versatile recidivism.

Table 2

Prospective relations between possibly relevant control variables and recidivism outcomes (*N* = 302).

	Recidivism Outcomes				
	Violent Arrest	Serious Non-Violent Arrest	Drug Arrest	Total Arrest	Versatile Recidivism
	OR (95%CI)	OR (95%CI)	OR (95%CI)	OR (95%CI)	OR (95%CI)
#past violent arrests	1.41 (1.10–1.80)	1.03 (0.84–1.26)	1.21 (0.94–1.55)	1.09 (0.88–1.36)	1.30 (1.02–1.67)
#Past serious non-violent arrests	1.17 (0.92–1.50)	0.98 (0.81–1.19)	1.10 (0.85–1.42)	0.98 (0.80–1.20)	1.11 (0.86–1.44)
#Past drug arrests	1.32 (0.85–2.04)	0.79 (0.56–1.10)	1.69 (1.18–2.42)	1.04 (0.75–1.44)	1.23 (0.79–1.90)
#Past total arrests	1.21 (1.05–1.40)	0.97 (0.87–1.09)	1.18 (1.02–1.35)	1.03 (0.91–1.15)	1.15 (1.00–1.33)
CD	1.89 (0.95–3.75)	0.75 (0.47–1.19)	2.55 (1.19–5.43)	0.87 (0.63–1.41)	2.45 (1.18–5.18)
SUD	1.59 (0.72–3.27)	0.58 (0.35–0.97)	2.10 (0.92–4.81)	0.80 (0.47–1.36)	1.41 (0.67–2.93)
Past detention	2.91 (1.44–5.86)	0.90 (0.54–1.51)	1.43 (0.69–2.93)	1.11 (0.64–1.91)	2.28 (1.13–4.58)
Belgian origin	0.66 (0.32–1.34)	1.04 (0.62–1.77)	1.00 (0.46–2.17)	1.27 (0.71–2.11)	0.55 (0.27–1.12)
High SES	0.76 (0.39–1.47)	0.75 (0.47–1.19)	1.04 (0.53–2.03)	0.78 (0.48–1.27)	0.83 (0.44–1.61)

In these analyses only one possibly relevant control variable was included in the logistic regression model, along with age; OR = odds ratio; CI = confidence interval; # = Number of; odds ratios in bold are significant; CD = conduct disorder; SUD= substance use disorder.

5.3. APSD component and Total scores as predictor of future crime

5.3.1. Incremental contribution

Overall, APSD scores were not prospectively related to any of the five outcomes, with three notable exceptions: the CU component score was positively related to future violent arrest and versatile recidivism, whilst the IMP component score was positively related to future drug arrest (Table 3). Additional logistic regression analyses were, therefore, conducted to examine the relative contribution of the CU and IMP scores to predict these recidivism outcomes. Table 4 demonstrates that the CU component score significantly contributed in predicting future violent arrest over the number of past total arrests, whereas its incremental contribution over number of past violent arrests and past detention was marginally significant ($0.05 < p \leq .06$). In addition, the CU component score significantly added in the prediction of versatile recidivism over past violent crime and past detention, but not over conduct disorder (Table 4). Finally, the IMP component score significantly contributed in predicting future drug arrest over number of past drug arrests and number of past total arrests, though it must be noted the IMP component score was no longer significantly related to future drug crime in this model. The IMP score did not have added value in predicting future drug arrest over conduct disorder (Table 4).

5.3.2. Interaction effects

5.3.2.1. *Number of past total arrests.* No significant interaction effect emerged between APSD scores (component and total) and number of past total arrests in predicting any of the five outcomes (details available upon request).

5.3.2.2. *Conduct disorder (CD).* The interaction between the NAR component score and CD was predictive of future serious non-violent arrest (OR = 0.75; 95%CI = 0.61–0.92) and future total arrest (OR = 0.79; 95%CI = 0.64–0.98). Additional analyses, nevertheless, showed that the NAR component score was neither significantly related to future serious non-violent arrest in girls with CD (OR = 0.95; 95%CI = 0.84–1.07) nor in girls without CD (OR = 1.04; 95%CI = 0.95–1.13), or to future total arrest in girls with CD (OR = 0.95; 95%CI = 0.83–1.07) and girls without CD (OR = 0.95; 95%CI = 0.83–1.07). The APSD total x CD interaction also was significant (OR = 0.90; 95CI = 0.81–0.99).

Table 3

Prospective relations between APSD total and component scores and recidivism outcomes (N = 302).

	Violent Arrest	Serious Non-Violent Arrest	Drug Arrest	Total Arrest	Versatile Recidivism
	OR (95%CI)	OR (95%CI)	OR (95%CI)	OR (95%CI)	OR (95%CI)
Narcissism	1.06 (0.95–1.19)	1.04 (0.95–1.13)	1.03 (0.90–1.16)	1.02 (0.93–1.22)	1.08 (0.96–1.22)
CU	1.21 (1.01–1.45)	0.91 (0.79–1.04)	1.16 (0.96–1.40)	0.87 (0.76–1.00)	1.23 (1.02–1.47)
Impulsivity	1.01 (0.87–1.16)	1.08 (0.97–1.20)	1.19 (1.01–1.39)	1.11 (0.99–1.23)	1.07 (0.93–1.25)
Total	1.04 (0.98–1.10)	1.02 (0.98–1.06)	1.06 (0.99–1.12)	1.01 (0.97–1.06)	1.06 (0.99–1.12)

APSD = Antisocial Process Screening Device; In these analyses only one APSD score was included in the logistic regression model, along with age; OR = odds ratio; CI = confidence interval; # = Number of; CU = callous-unemotional; odds ratios in bold are significant

Table 4

Incremental contribution of APSD scores in predicting recidivism outcomes (N = 302).

Callous-Unemotional score - Future Violent Arrest	
Model 1 ($\chi^2 = 3.74, p = .053; -2LL = 232.65$) ^a	
# past violent arrests	OR = 1.40 ; 95% CI = 1.09–1.80
Callous-Unemotional	OR = 1.20; 95% CI = 1.00–1.44
Model 2 ($\chi^2 = 3.96, p = .047; -2LL = 232.65$) ^b	
# past total arrests	OR = 1.21 ; 95% CI = 1.05–1.40
Callous-Unemotional	OR = 1.20 ; 95% CI = 1.00–1.45
Model 3 ($\chi^2 = 3.57, p = .06; -2LL = 242.95$) ^c	
Past detention	OR = 2.83 ; 95% CI = 1.40–5.74
Callous-Unemotional	OR = 1.20; 95% CI = 0.99–1.44
Callous-Unemotional score -Versatile Recidivism	
Model 1 ($\chi^2 = 4.37, p = .04; -2LL = 230.69$) ^d	
# past violent arrests	OR = 1.29 ; 95% CI = 1.01–1.66
Callous-Unemotional	OR = 1.21 ; 95% CI = 1.01–1.47
Model 2 ($\chi^2 = 2.63, p = .11; -2LL = 229.69$) ^e	
Conduct disorder	OR = 2.17 ; 95%CI = 1.02–4.62
Callous-Unemotional	OR = 1.17; 95%CI = 0.97–1.41
Model 3 ($\chi^2 = 4.23, p = .04; -2LL = 229.57$) ^f	
Past detention	OR = 2.21 ; 95%CI = 1.09–4.48
Callous-Unemotional	OR = 1.22 ; 95%CI = 1.01–1.47
Impulsivity score - Future Drug Arrest	
Model 1 ($\chi^2 = 4.36, p = .04; -2LL = 293.81$) ^g	
# past drug arrests	OR = 1.69 ; 95%CI = 1.17–2.42
Impulsivity	OR = 1.18 ; 95%CI = 1.01–1.39
Model 2 ($\chi^2 = 3.95, p = .047; -2LL = 226.98$) ^h	
# past total arrests	OR = 1.16 ; 95%CI = 1.01–1.34
Impulsivity	OR = 1.17; 95%CI = 0.999–1.38
Model 3 ($\chi^2 = 1.56, p = .21; -2LL = 227.80$) ⁱ	
Conduct Disorder	OR = 2.09 ; 95%CI = 0.92–4.73
Impulsivity ^j	OR = 1.11; 95%CI = 0.94–1.32

APSD = Antisocial Process Screening Device; -2LL = log likelihood ratio; # = Number of; OR = odds ratio; CI = confidence interval; odds ratios in bold are significant.

^a Baseline model (without APSD score): $\chi^2 = 34.70, p < .001; -2LL = 236.67$.
^b Baseline model (without APSD score): $\chi^2 = 34.45, p < .001; -2LL = 236.63$.
^c Baseline model (without APSD score): $\chi^2 = 36.91, p < .001; -2LL = 234.15$.
^d Baseline model (without APSD score): $\chi^2 = 15.70, p < .001; -2LL = 235.06$.
^e Baseline model (without APSD score): $\chi^2 = 18.17, p < .001; -2LL = 232.60$.
^f Baseline model (without APSD score): $\chi^2 = 16.96, p < .001; -2LL = 233.80$.
^g Baseline model (without APSD score): $\chi^2 = 8.01, p = .02; -2LL = 228.17$.
^h Baseline model (without APSD score): $\chi^2 = 5.25, p = .07; -2LL = 2330.92$.
ⁱ Baseline model (without APSD score): $\chi^2 = 6.81, p = .03; -2LL = 229.36$.
^j The association between impulsivity and conduct disorder was moderate at best: eta correlation = 0.45; odds ratio = 1.56 (95% CI = 1.37–1.77).

Additional analyses revealed that the APSD total score was significantly positively related to future total crime in girls *without* CD (OR = 1.11; 95%CI = 1.02–1.20), but not in girls with CD (OR = 0.99; 95% = 0.94–1.06). No other significant interaction effects emerged (details available upon request).

5.3.2.3. *Past detention.* The CU x past detention interaction was

predictive of future serious non-violent arrest (OR = 1.69; 95%CI = 1.21–2.38) and future total arrest (OR = 1.67; 95%CI = 1.17–2.38). Additional analyses first revealed that the CU component score was significantly *positively* related to future serious non-violent arrest in girls *with* a detention history (OR = 1.38–95%CI = 1.02,1.87) and significantly *negatively* related to this outcome in girls *without* a detention history (OR = 0.79; 95%CI = 0.68–0.94). Supplementary analyses also showed that the CU component was significantly *negatively* related to future total arrest in girls *without* a detention history (OR = 0.76; 95%CI = 0.64–0.90), but not significantly related to this outcome in girls who had been detained in the past (OR = 1.27; 95%CI = 0.94–1.72). No other significant interaction effects emerged (details available upon request).

5.3.2.4. *Substance use disorder (SUD).* The NAR x SUD interaction was significantly predictive of future serious non-violent arrest (OR = 0.79; 95%CI = 0.62–0.99). Extra analyses revealed that NAR was significantly positively related to future serious non-violent arrest in girls *without* SUD (OR = 1.26; 95%CI = 1.02–1.55), not in girls with *SUD* (OR = 0.99; 95% CI = 0.89–1.11). No other significant interaction effects emerged (details available upon request).

5.4. Latent classes as predictor of future criminality

5.4.1. Class assignment and comparisons

Results from LPA indicated that the 2-class model best fit the data (see Lo-Mendell-Rubin statistic in Table 5), with mean posterior probabilities ranging from 0.82 to 0.96 and an entropy value of 0.74,

Table 5

Model fit statistics from the latent profile analysis with the three APSD component scores as clustering variables.

#	n	Probabilities	AIC	BIC	Entropy	LMR
2	224/78	0.96/0.82	3861.46	3898.56	0.74	p < .001
3	135/113/ 54	0.89/0.80/ 0.91	3837.01	3889.02	0.69	p = ns

The Bayesian information criterion (BIC), Akaike information criterion (AIC), Lo-Mendell-Rubin (LMR) statistics, and entropy value are used as statistical criteria to compare models in order to identify the optimal number of latent classes (LCs) to retain (Nylund, Asparouhov, & Muthen, 2007). The model with the lowest BIC and AIC values is preferred. The LMR statistic, which is considered to be a likelihood ratio test between models with a different number of LCs specified, tests k–1 classes against k classes, and reveals a significant χ^2 value (p < .05) indicating whether the k–1 class model is rejected in favor of the k class model (Lo, Mendell, & Rubin, 2001). Average posterior probabilities of class membership and the entropy value are also taken into consideration to determine the precision of classification and the degree to which the classes are distinguishable, respectively. Average probabilities ≥ 0.70 imply satisfactory fit (Nagin, 2005), and an entropy value greater than 0.70 is preferred because it indicates clear classification and greater power to predict class membership (Muthen, 2000).

suggesting that the classes were well separated. The two classes are illustrated in Fig. 1. Class 1 included 224 girls with below-average scores on the three APSD components (74.2% of the total sample). Class 2 (25.8% of the total sample) included 78 girls with elevated scores on the three APSD components, ranging from 0.54 SD above the mean (CU) over 0.84 above the mean (IMP) to 1.33 above the mean (NAR). Table 6 shows that Class 2 had significantly higher APSD component and total scores. The magnitude of these differences, expressed as Cohen's *d*, was large for NARC (*d* = 2.36), IMP (*d* = 1.35), and APSD Total (*d* = 2.41), and moderate for CU (*d* = 0.70). Table 6 also demonstrates that Class 2 was significantly higher in number of past total arrests, and percentages of girls with any violent arrest in the past, with a detention history, and with conduct disorder. Other between-class differences in terms of criminal history showed a trend toward significant ($p \leq .06$; Table 6). Based on these findings, classes 1 and 2 were tentatively labeled as 'putative psychopathic personality' and 'putative non-psychopathic personality', respectively.

5.4.2. Putative psychopathic personality and future criminality

5.4.2.1. Incremental contribution. Girls with (versus without) a putative psychopathic personality (PPP) were not at a significantly increased risk for future violent arrest (OR = 1.68; 95%CI = 0.84–3.34), future serious non-violent arrest (OR = 1.43; 95% CI = 0.84–2.44), future drug arrest (OR = 1.66; 95%CI = 0.82–3.37), future total arrest (OR = 1.23; 95%CI = 0.71–2.15), or versatile recidivism (OR = 2.25; 95%CI = 0.94–5.38). Therefore, it was not tested if PPP had added predictive value.

5.4.2.2. Interaction effects. A significant interaction effect emerged between PPP and CD in predicting future serious non-violent arrest (OR = 0.75; 95% CI = 0.01–0.65) and future total arrest (OR = 0.08; 95% = 0.01–0.71). Additional analyses, nevertheless, showed that PPP was significantly predictive of future serious non-violent arrest in girls without CD (OR = 13.47; 95%CI 1.72–105.41), but not in girls with CD (OR = 1.02; 95%CI = 0.54–1.92). Likewise, PPP was significantly predictive of future total arrest in girls without CD (OR = 10.31; 95%CI 1.31–83.43), but not in girls with CD (OR = 0.82; 95%CI = 0.43–1.58). No other significant interaction effects emerged (details available upon

Table 6 Comparisons of the classes identified through latent profile analysis (N = 302).

	Class 1 (n = 224)	Class 2 (n = 78)	F; p
	M (SD)	M (SD)	
APSD Narcissism	3.17 (1.68)	7.55 (2.02)	352.83;<0.001
APSD Callous-Unemotional	2.42 (1.65)	3.56 (1.65)	27.66;<0.001
APSD Impulsivity	4.68 (2.00)	7.18 (1.68)	97.07;<0.001
APSD Total	11.07 (4.06)	20.43 (3.70)	279.85; <0.001
# past violent arrests	0.50 (1.01)	0.83 (1.42)	3.56 ^a ; 0.06
# past non-Violent arrests	0.54 (1.03)	0.90 (1.50)	3.71 ^a ; 0.06
# past drug arrests	0.25 (0.76)	0.27 (0.64)	0.04; 0.84
# total past arrests	1.30 (1.80)	2.00 (2.62)	4.78 ^a ; 0.03
	N(%)	N(%)	χ ² ; p
Any past violent arrest	64 (28.6)	33 (42.3)	5.01; 0.02
Any past serious non-violent arrest	72 (32.1)	33 (42.3)	2.64; 0.10
Any past drug arrest	34 (15.2)	16 (20.5)	1.10; 0.27
Any past total arrest	119 (53.1)	51 (65.4)	3.53; 0.06
Past detention	49 (21.9)	31 (39.7)	9.49; <0.01
Conduct disorder	111 (49.6)	60 (76.9)	17.65; <0.001
Substance use disorder	147 (65.6)	60 (76.9)	3.43; 0.06
Age [M(SD)]	16.20 (1.07)	16.19 (1.03)	0.10; 0.75
Non-Belgian origin	52 (23.2)	24 (30.8)	1.75; 0.18
Low SES	123 (54.9)	46 (59.0)	0.39; 0.53

APSD = Antisocial Process Screening Device; Class 1 = putative non-psychopathic personality; Class 2 = putative psychopathic personality.

^a Based on Welch F because homogeneity of variance assumption was violated; F and Chi² statistics for continuous and categorical variables, respectively.

request).

6. Discussion

Echoing decades of applied clinical work with criminal justice-involved adults, the psychopathy construct is likely to be used for risk assessment purposes and legal decision making with detained youth as well. Therefore, it is vital to know if and when this construct is related to

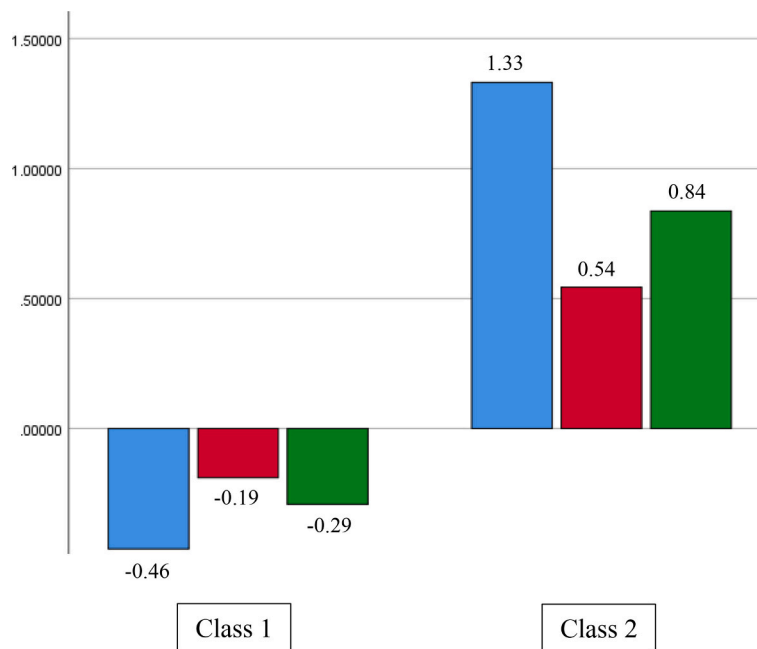


Fig. 1. Mean Standardized Scores (Z-scores) for the Antisocial Process Screening Device (APSD) Narcissism component (blue color), the Callous-Unemotional component (red color), and the Impulsivity component (green color). (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

future criminality, and if and to what extent it has an incremental value over other important risk factors. The present study tested these issues in an understudied population of criminal justice-involved youth, being detained girls, whilst focusing on the prediction of future arrest charges during adolescence. Overall, results indicated that neither psychopathy total and component scores nor the constellation of co-occurring traits (*'putative psychopathic personality'*), were predictive of recidivism outcomes, at least not when using the APSD self-report version. On very few occasions, the incremental contribution of APSD scores in predicting recidivism needed to be tested, whereas only a restricted number of interaction effects between APSD scores and other predictors were revealed. Findings, altogether, suggest that there is no compelling need to use the APSD self-report version for risk assessment purposes among detained girls.

The APSD total and component scores were not prospectively related to recidivism outcomes in 17 out of 20 analyses, clearly suggesting that these scores were not consistently associated with future criminality. Based on the three analyses that did reveal such significant relations, we tested the added value of the CU in predicting future violent arrest and versatile recidivism, and the IMP score in predicting future drug arrest. In four of the nine tests reported in Table 4, the APSD CU or IMP scores significantly added to the prediction of the outcome, whilst also remaining a significant predictor in itself. Admittedly, we encountered problems to reliably assess psychopathic traits, even after altering some APSD scores. While this unfortunate feature may have decreased the possibility to detect significant relations between APSD scores and recidivism outcomes, it cannot be overlooked that the APSD component with the lowest internal consistency (CU) was the component that most often was incrementally predictive of the outcomes in this study. Prior work among criminal justice-involved girls also failed to reveal prospective relations between psychopathy scores and future criminality, when relying on psychometrically sounder self-report measures of psychopathy (Chauhan et al., 2014; Pechorro et al., 2020).⁷ Therefore, it is unlikely that problems with internal consistency are the sole explanation for our findings. Alternatively, it cannot be excluded that our focus on youth recidivism (before 18 years of age) may have restricted the opportunities for girls to reoffend. Yet, there is evidence that the predictive utility of psychopathy measures may diminish with time (Cauuffman et al., 2009; Chauhan et al., 2014) or is established only when focusing on recidivism in adolescence, not in adulthood (Stockdale et al., 2010). Our short follow-up assessment and focus on youth recidivism, therefore, can be considered to be a strength rather than a limitation, and also may not be a sufficient explanation as to why few prospective relations between APSD scores and recidivism outcomes were revealed.

Another alternative explanation is that the lack of an antisocial component has reduced the APSD's capacity in predicting recidivism outcomes. This possibility was explored by testing interaction effects between the four APSD scores and three predictors that served as proxies of features of the antisocial components of other psychopathy measures, such as the PCL:YV (e.g., past criminality) or the Proposed Specifiers for Conduct Disorder (e.g., conduct problems). To this end, 60 (5 × 4 × 3) interaction effects were tested, of which only five reached statistical significance according to our liberal threshold ($p < .05$), indicating that these interaction effects should be carefully interpreted. Importantly, analyses that aimed to facilitate the interpretation of these five interactions effects only once showed that one APSD score (i.e., CU) was significantly *positively* related to one outcome (i.e., future serious non-violent arrest) in girls exhibiting one of the proxies of the antisocial component (i.e., girls with a detention history). This set of findings seems to suggest that the antisocial component of the psychopathy does not always introduce a tautology when predicting future criminality (Skeem & Cooke, 2010), and that models of psychopathy that include an

antisocial component do not necessarily improve prediction of future criminality relative to models that do not (Vitacco et al., 2005). Crucially, the APSD was the only tool used in the current study, underscoring the need to replicate the findings from the interaction tests in other samples of criminal justice-involved girls with other psychopathy measures.

The APSD x conduct disorder (CD) interaction tests are particularly relevant in the context of recent attempts (Colins, Van Damme, Hendricks, & Georgiou, 2020; Frick, Ray, Thornton, & Kahn, 2014) and suggestions (Salekin, 2016) to consider the psychopathy components as specifiers for conduct disorder. CU traits did not interact with CD in predicting recidivism outcomes, a finding that is in line with some prior work in criminal justice-involved boys and girls showing that those with CD and CU traits (or limited prosocial emotions) are not at a higher risk for future criminality (Colins & Van Damme, 2020; Colins & Vermeiren, 2013). This study also failed to reveal significant interaction effects that underscore the predictive usefulness of NAR and IMP scores in detained girls with CD. Because these two latter components have rarely been considered in research on CD subtyping endeavors, it cannot be determined how sample or tool specific current findings are. Yet, testing prospective relations between subtypes of CD and officially registered recidivism is only one way to explore the potential usefulness of the proposed additional specifiers for CD. As such, much more work needs to be done to optimize knowledge about the clinical utility of these proposed specifiers (Salekin, 2016), preferably whilst relying on psychometrically sound psychopathy measures, and considering outcomes that may be relevant when studying psychopathy in females, such as relational aggression (e.g. Verona & Vitale, 2018).

To facilitate the study of psychopathy as a constellation of co-occurring traits, latent profile analysis was performed. Using the three APSD component scores as clustering variables, 78 (25.8%) of the girls exhibited seemingly high levels of narcissism, callous-unemotional traits, and impulsivity, and were tentatively labeled as the *'putative psychopathic personality (PPP)'* class. In support of its viability, the PPP class scored the highest on features that have been associated with psychopathy, including criminality, CD, and substance use disorder. Nevertheless, girls in the PPP class were not at a significantly higher risk for future criminality, relative to their counterparts in the other class, a finding that was not altered when considering possible interaction effects with proxies of the antisocial component or with substance use disorder. We are aware of no studies that have used three APSD component scores to identify criminal justice-involved girls with a PPP. Hence, findings from our latent profile analysis must be carefully interpreted, especially since the percentage of girls with a PPP seems high in comparison to PCL-R based prevalence rates of female psychopathy ($\pm 17\%$) in various forensic adult samples (e.g., Lehmann & Ittel, 2012; Salekin, Rogers, & Sewell, 1997; Warren et al., 2003). Also, prior work that used three psychopathy component scores as clustering variables typically identified three (da Silva et al., 2019) or more classes (e.g., Colins, Fanti, Salekin, & Andershed, 2017; Wang et al., 2020). Therefore, future work that uses model based clustering techniques is warranted to increase confidence that such data driven approaches can enhance the study of psychopathic personality in criminal justice-involved girls.

Altogether, our findings raise the question of whether there is a compelling need to use the psychopathy construct for risk assessment purposes among criminal justice-involved girls, at least as assessed by means of the APSD self-report version. In fact, this study showed that number of past violent, drug, and total arrests, CD and detention history were (Table 2) and remained (Table 3) more often predictive of certain recidivism outcomes than the APSD scores or the PPP class. Crucially, the APSD was the only tool used in the current study, and it is, therefore, impossible to conclude that the psychopathy construct has limited meaningful information about detained girls' risk for criminality. Speculative, future research with these girls may reveal that self-report measures are inferior to expert-based rating scales when it comes to the

⁷ With the sole exception that in the Chauhan et al. (2014) study the YPI CU component was predictive of violent offending at the 2 year follow-up.

prediction of future criminality. In support of such speculations, research with criminal justice-involved boys has shown that PCL:YV defined psychopathy is predictive of recidivism (Gretton, Hare, & Catchpole, 2004; McCuish, Corrado, Lussier, & Hart, 2014), whereas APSD or YPI-defined psychopathy is not (e.g., Colins, Van Damme, Andershed, Fanti, & DeLisi, 2017; Colins, Vermeiren, De Bolle, & Broekaert, 2012; Pechorro, Seto, Ray, Alberto, & Simões, 2019), but for a notable exception see Salekin (2008). Unfortunately, these studies only considered one psychopathy measure or did not test if the predictive utility of psychopathy scores differ across gender. Consequently, it is also difficult to discard the possibility that even the PCL:YV will be of little predictive usefulness in detained girls (Chauhan et al., 2014; Vincent et al., 2008). Nevertheless, the APSD, like other psychopathy tools, was not specifically developed for risk assessment purposes among criminal justice-involved youth. Our findings, therefore, cannot be interpreted as evidence that the APSD has no predictive validity at all, especially not since APSD scores have been shown to predict low levels of treatment engagement in detained girls (Colins, Van Damme, Fanti, & Andershed, 2017).

As always, our findings should be interpreted in the context of various limitations that have not yet been mentioned. First, we used official records of past and future arrests, and sometimes youngsters' criminal behaviors are more extensive than arrest records indicate. Thus, we might have underestimated true offending. Nevertheless, prior work with a subsample of the participants in the current study failed to reveal prospective relations between APSD scores and self-report violent offending (Colins, Van Damme, Andershed, Fanti, & DeLisi, 2017). Second, we did not have information enough to use a standard follow-up time or to calculate exposure time. Therefore, we were unable to account for the fact that girls may have differed in their opportunities to commit new crimes. Although there is some evidence showing that controlling for exposure time does not alter findings (e.g., Colins et al., 2011; Hoeve, McReynolds, Wasserman, & McMillan, 2013), other studies showed that controlling for exposure time is important (e.g., Eggleston, Laub, & Sampson, 2004; Piquero et al., 2001). Consequently, it cannot be excluded that the lack of information about exposure time affected our findings in many forms (e.g., differences in follow-up period and differences in time detained). Future studies that adequately control for exposure time are, therefore, warranted. Third, to improve the internal consistency of the APSD CU scale, we removed items 19 and 20, as done in prior work with criminal justice-involved youth (e.g. Poythress et al., 2006). While this decision may have increased the likelihood to find prospective relations, it limits the extent to which current findings are informative for the DSM-5 CU-based specifier "Limited Prosocial Emotions (LPE)" (APA, 2013). In fact, by removing item 19 ("I do not show my emotions to others") it is no longer possible to tap the LPE criterion "shallow or deficient affect" by means of the modified APSD CU scale. Yet, there is evidence to suggest that findings from studies assessing CU traits dimensionally (current study) cannot be replicated when assessing CU traits as categorically defined in the DSM-5 LPE specifier (for reviews see: Colins, Van Damme, et al., 2020; Colins, Fanti, & Andershed, 2020).

In conclusion, APSD components scores were only occasionally related to recidivism outcomes and rarely added to the prediction of future criminality. Since APSD scores did not improve the prediction of recidivism when other data are available that are more easily retrievable (e.g. detention history) or may be less pejorative (e.g., conduct disorder), it appears as if the APSD self-report version should not (yet) be used for risk assessment purposes when dealing with detained girls.

Funding

The authors have no financial relationships relevant to this article to disclose.

Declaration of Competing Interest

The authors have no conflicts of interest relevant to this article to disclose.

Acknowledgements

This work was partially supported by an FWO Odysseus Grant (FWO. ODY.2019.0001.01) awarded to the first author and by a small research fund from Örebro University awarded to the first and second authors.

References

- Abramowitz, C. S., Kosson, D. S., & Seidenberg, M. (2004). The relationship between childhood attention deficit hyperactivity disorder and conduct problems and adult psychopathy in male inmates. *Personality & Individual Differences*, 36(5), 1031–1047.
- American Psychiatric Association (APA). (2013). *Diagnostic and Statistical Manual of Mental Disorders: Fifth Edition (DSM-5)* (pp. 947) (Hardback. ISBN-10: 0890425558).
- Andershed, H., Colins, O. F., Salekin, R. T., Lordos, A., Kyranides, M. N., & Fanti, K. A. (2018). Callous-unemotional traits only versus the multidimensional psychopathy construct as predictors of various antisocial outcomes during early adolescence. *Journal of Psychopathology and Behavioral Assessment*, 40(1), 16–25.
- Andershed, H., Kerr, M., Stattin, H., & Levander, S. (2002). Psychopathic traits in non-referred youths: Initial test of a new assessment tool. In E. Blaauw, & L. Sheridan (Eds.), *Psychopaths: Current international perspectives* (pp. 131–158). The Hague: Elsevier.
- Angold, A., Erkanli, A., Copeland, W., Goodman, R., Fisher, P. W., & Costello, E. J. (2012). Psychiatric diagnostic interviews for children and adolescents: A comparative study. *Journal of the American Academy of Child & Adolescent Psychiatry*, 51(5), 506–517.
- Asscher, J. J., Deković, M., Wissink, I. B., van Vugt, E. S., Stams, G. J. J., & Manders, W. A. (2014). Ethnic differences in the relationship between psychopathy and (re) offending in a sample of juvenile delinquents. *Psychology, Crime & Law*, 20(2), 152–165.
- van Baardewijk, Y., Vermeiren, R., Stegge, H., & Doreleijers, T. (2011). Self-reported psychopathic traits in children: Their stability and concurrent and prospective association with conduct problems and aggression. *Journal of Psychopathology and Behavioral Assessment*, 33(2), 236–245. <https://doi.org/10.1007/s10862-010-9215-4>.
- Barker, C., Pistran, N., & Elliot, R. (1994). *Research methods in clinical and counselling psychology*. Chichester, England: Wiley.
- Beaudry, G., Yu, R., Långström, N., & Fazel, S. (2020). Mental disorders among adolescents in juvenile detention and correctional facilities: An updated systematic review and meta-regression analysis. *Journal of the American Academy of Child and Adolescent Psychiatry* (Available online 5 February 2020).
- Boles, S. M., & Miozzo, K. (2003). Substance abuse and violence: A review of the literature. *Aggression and Violent Behavior*, 8(2), 155–174.
- Bravo, M., Ribera, J., Rubio-Stipec, M., Canino, G., Shrout, P., Ramírez, R., ... Bauermeister, J. (2001). Test-retest reliability of the Spanish version of the diagnostic interview schedule for children (DISC-IV). *Journal of Abnormal Child Psychology*, 29(5), 433–444.
- Camp, J., Skeem, J. L., Barchard, K., Lilienfeld, S. O., & Poythress, N. G. (2013). Psychopathic predators? Getting specific about the relation between psychopathy and violence. *Journal of Consulting and Clinical Psychology*, 81(3), 467.
- Campbell, M. A., Porter, S., & Santor, D. (2004). Psychopathic traits in adolescent offenders: An evaluation of criminal history, clinical, and psychosocial correlates. *Behavioral Sciences & the Law*, 22(1), 23–47.
- Cauffman, E., Kimonis, E. R., Dmetrieva, J., & Monahan, K. (2009). A multimethod assessment of juvenile psychopathy: Comparing the predictive utility of the PCL:YV, YPI, and NEO PRI. *Psychological Assessment*, 21(4), 528–542. <https://doi.org/10.1037/a0017367>.
- Chaplo, S. D., Kerig, P. K., Modrowski, C. A., & Bennett, D. C. (2017). Gender differences in the associations among sexual abuse, posttraumatic stress symptoms, and delinquent behaviors in a sample of detained adolescents. *Journal of Child & Adolescent Trauma*, 10(1), 29–39.
- Chauhan, P., Ragbeer, S. N., Burnette, M. L., Oudekerk, B., Reppucci, N. D., & Moretti, M. M. (2014). Comparing the youth psychopathic traits inventory (YPI) and the psychopathy checklist–youth version (PCL:YV) among offending girls. *Assessment*, 21(2), 181–194.
- Clark, L., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment*, 7(3), 309–319.
- Colins, O. F., & Andershed, H. (2015). The DSM-5 with limited prosocial emotions specifier for conduct disorder among detained girls. *Law and Human Behavior*, 39(2), 198.
- Colins, O. F., & Andershed, H. (2018). Childhood and adolescent psychopathy. In *Routeledge international handbook of psychopathy and crime* (pp. 166–184). Routledge.
- Colins, O. F., Andershed, H., Frogner, L., Lopez-Romero, L., Veen, V., & Andershed, A.-K. (2014). A new measure to assess psychopathic personality in children: The child problematic traits inventory. *Journal of Psychopathology and Behavioral Assessment*, 36, 4–21. <https://doi.org/10.1007/s10862-013-9385-y>.

- Colins, O. F., Andershed, H., & Pardini, D. A. (2015). Psychopathic traits as predictors of future criminality, intimate partner aggression, and substance use in young adult men. *Law and Human Behavior*, 39(6), 547.
- Colins, O. F., Andershed, H., Salekin, R. T., & Fanti, K. A. (2018). Comparing different approaches for subtyping children with conduct problems: Callous-unemotional traits only versus the multidimensional psychopathy construct. *Journal of Psychopathology and Behavioral Assessment*, 40(1), 6–15.
- Colins, O. F., Bijttebier, P., Broekaert, E., & Andershed, H. (2014). Psychopathic-like traits among detained female adolescents: Reliability and validity of the antisocial process screening device and the youth psychopathic traits inventory. *Assessment*, 21, 195–209. <https://doi.org/10.1177/1073191113481997>.
- Colins, O. F., Fanti, K. A., Andershed, H., Mulder, E., Salekin, R. T., Blokland, A., & Vermeiren, R. R. (2017). Psychometric properties and prognostic usefulness of the youth psychopathic traits inventory (YPI) as a component of a clinical protocol for detained youth: A multiethnic examination. *Psychological Assessment*, 29(6), 740.
- Colins, O. F., Fanti, K. A., Salekin, R. T., & Andershed, H. (2017). Psychopathic personality in the general population: Differences and similarities across gender. *Journal of Personality Disorders*, 31(1), 49–74.
- Colins, O. F., Fanti, K. A., Salekin, R. T., Mulder, E., & Andershed, H. (2017). *Psychopathy in detained boys: The search for primary and secondary variants in a clinical setting* (Personality disorders).
- Colins, O. F., & Van Damme, L. (2020). Psychiatric disorders and future violent arrests: A prospective study among detained girls. *Youth Violence and Juvenile Justice*, 18(4), 365–380.
- Colins, O. F., Van Damme, L., Andershed, H., Fanti, K. A., & DeLisi, M. (2017). Self-reported psychopathic traits and antisocial outcomes in detained girls: A prospective study. *Youth Violence and Juvenile Justice*, 15(2), 138–153.
- Colins, O. F., Van Damme, L., Fanti, K. A., & Andershed, H. (2017). The prospective usefulness of callous-unemotional traits and conduct disorder in predicting treatment engagement among detained girls. *European Child & Adolescent Psychiatry*, 26(1), 75–85.
- Colins, O. F., Van Damme, L., Hendricks, A., & Georgiou, G. (2020). The DSM-5 with limited prosocial emotions specifier for conduct disorder and conduct problems: A systematic literature review. *Journal of Psychopathology and Behavioral Assessment*, 42, 248–258.
- Colins, O. F., & Vermeiren, R. (2013). The usefulness of DSM-IV and DSM-5 conduct disorder subtyping in detained adolescents. *Journal of Nervous and Mental Disease*, 201(9), 736–743. <https://doi.org/10.1097/NMD.0b013e3182a20e94>.
- Colins, O. F., Vermeiren, R., De Bolle, M., & Broekaert, E. (2012). Self-reported psychopathic-like traits as predictors of recidivism in detained male adolescents. *Criminal Justice and Behavior*, 39(11), 1421–1435. <https://doi.org/10.1177/0093854812456526>.
- Colins, O. F., Vermeiren, R., Vahl, P., Markus, M., Broekaert, E., & Doreleijers, T. (2011). Psychiatric disorder in detained male adolescents as risk factor for serious recidivism. *Canadian Journal of Psychiatry-Revue Canadienne De Psychiatrie*, 56(1), 44–50.
- Colins, O. F., Vermeiren, R., Vahl, P., Markus, M., Broekaert, E., & Doreleijers, T. (2012). Parent-reported attention-deficit hyperactivity disorder and subtypes of conduct disorder as risk factor of recidivism in detained male adolescents. *European Psychiatry*, 27(5), 329–334. <https://doi.org/10.1016/j.eurpsy.2011.01.001>.
- Colins, O. F., Vermeiren, R., Vreugdenhil, C., van den Brink, W., Doreleijers, T., & Broekaert, E. (2010). Psychiatric disorders in detained male adolescents: A systematic literature review. *Canadian Journal of Psychiatry-Revue Canadienne De Psychiatrie*, 55(4), 255–263.
- Cooke, D. J., & Michie, C. (2001). Refining the construct of psychopathy: Towards a hierarchical model. *Psychological Assessment*, 13(2), 171–188. <https://doi.org/10.1037/1040-3590.13.2.171>.
- Corrado, R. R., Odgers, C., & Cohen, I. M. (2000). The incarceration of female young offenders: Protection for whom? *Canadian Journal of Criminology*, 42(2), 189–207.
- Dyck, H. L., Campbell, M. A., Schmidt, F., & Wershler, J. L. (2013). Youth psychopathic traits and their impact on long-term criminal offending trajectories. *Youth Violence and Juvenile Justice*, 11(3), 230–248.
- Edens, J. F., Campbell, J., & Weir, J. M. (2006). Youth psychopathy and criminal recidivism: A meta-analysis of the psychopathy checklist measures. *Law and Human Behavior*, 31, 53–57.
- Edens, J. F., Magyar, M. S., & Cox, J. (2013). Taking psychopathy measures “Out of the Lab” and into the legal system: some practical concerns. In K. Kiehl, & W. Sinnott-Armstrong (Eds.), *Handbook on Psychopathy and Law* (pp. 250–274). New York, NY: Oxford University Press.
- Eggleston, E. P., Laub, J. H., & Sampson, R. J. (2004). Methodological sensitivities to latent class analysis of long-term criminal trajectories. *Journal of Quantitative Criminology*, 20(1), 1–26.
- Fanti, K. A., Kyranides, M. N., Lordos, A., Colins, O. F., & Andershed, H. (2018). Unique and interactive associations of callous-unemotional traits, impulsivity and grandiosity with child and adolescent conduct disorder symptoms. *Journal of Psychopathology and Behavioral Assessment*, 40(1), 40–49.
- Forth, A. E., Kosson, D. S., & Hare, R. D. (2003). *The psychopathy checklist: Youth version, manual*. North Tonawanda, N.Y.: Multi-Health Systems.
- Frick, P. J., Bodin, S. D., & Barry, C. T. (2000). Psychopathic traits and conduct problems in community and clinic-referred samples of children: Further development of the psychopathy screening device. *Psychological Assessment*, 12(4), 382–393.
- Frick, P. J., & Hare, R. D. (2001). *Antisocial process screening device technical manual*. Toronto: Multi-Health Systems.
- Frick, P. J., Ray, J., Thornton, L., & Kahn, R. (2014). Can callous-unemotional traits enhance the understanding, diagnosis, and treatment of serious conduct problems in children and adolescents? A comprehensive review. *Psychological Bulletin*, 140(1), 1–57. <https://doi.org/10.1037/a0033076>.
- Frogner, L., Gibson, C. L., Andershed, A.-K., & Andershed, H. (2018). Childhood psychopathic personality and callous-unemotional traits in the prediction of conduct problems. *American Journal of Orthopsychiatry*, 88(2), 211.
- Gill, A. D., & Stickler, T. R. (2016). Affective differences between psychopathy variants and genders in adjudicated youth. *Journal of Abnormal Child Psychology*, 44, 295–307.
- Gillen, C. T., Lee, Z., Salekin, K. L., Iselin, A.-M. R., Harrison, N. A., Clark, A. P., ... Salekin, R. T. (2018). Psychopathic traits in adolescence: The importance of examining components in face processing, voice processing, and emotional skill. *Journal of Psychopathology and Behavioral Assessment*, 40(1), 50–59.
- Gretton, H. M., Hare, R. D., & Catchpole, R. E. (2004). Psychopathy and offending from adolescence to adulthood: a 10-year follow-up. *Journal of Consulting and Clinical Psychology*, 72(4), 636.
- Hare, R. D. (2003). *Hare Psychopathy Checklist-Revised (PCL-R): Second edition, technical manual*. Toronto, ON: Multi Health Systems.
- Hare, R. D., & Neumann, C. S. (2008). Psychopathy as a clinical and empirical construct. *Annual Review of Clinical Psychology*, 4, 217–246. <https://doi.org/10.1146/annurev.clinp-sy.3.022806.091452>.
- Hicks, B. M., Vaidyanathan, U., & Patrick, C. J. (2010). Validating female psychopathy subtypes: differences in personality, antisocial and violent behavior, substance abuse, trauma, and mental health. *Personality Disorders, Theory, Research, and Treatment*, 1(1), 38–57. <https://doi.org/10.1037/a0018135>.
- Hoeve, M., McReynolds, L. S., Wasserman, G. A., & McMillan, C. (2013). The influence of mental health disorders on severity of reoffending in juveniles. *Criminal Justice and Behavior*, 40(3), 289–301.
- Johansson, P., Kerr, M., & Andershed, H. (2005). Linking adult psychopathy with childhood hyperactivity-impulsivity-attention problems and conduct problems through retrospective self-reports. *Journal of Personality Disorders*, 19(1), 94–101.
- Jongerenwelzijn, A. (2014). *Tabel: evolutie van het aantal begeleide jongeren naar begeleidingsjaar en uitbatingplaats van een gemeenschapsinstelling (absolute aantallen en percentages)*. Brussel.
- Kennealy, P. J., Skeem, J. L., Walters, G. D., & Camp, J. (2010). Do core interpersonal and affective traits of PCL-R psychopathy interact with antisocial behavior and disinhibition to predict violence? *Psychological Assessment*, 22(3), 569.
- Kiehl, K. A., & Hoffman, M. B. J. J. (2011). *The criminal psychopath: History, neuroscience, treatment, and economics*. 51 p. 355).
- Lehmann, A., & Ittel, A. (2012). Aggressive behavior and measurement of psychopathy in female inmates of German prisons—A preliminary study. *International Journal of Law and Psychiatry*, 35(3), 190–197.
- Lilienfeld, S. O. (2018). The multidimensional nature of psychopathy: Five recommendations for research. *Journal of Psychopathology and Behavioral Assessment*, 40(1), 79–85.
- Lo, Y., Mendell, N. R., & Rubin, D. B. (2001). Testing the number of components in a normal mixture. *Biometrika*, 88, 767–778.
- López-Romero, L., Romero, E., Colins, O. F., Andershed, H., Hare, R. D., & Salekin, R. T. (2019). *Proposed specifiers for conduct disorder (PSCD): Preliminary validation of the parent version in a Spanish sample of preschoolers*. Psychological Assessment. Advanced online publication.
- Lynam, D. R., Caspi, A., Moffitt, T. E., Raine, A., Loeber, R., & Stouthamer-Loeber, M. (2005). Adolescent psychopathy and the Big Five: Results from two samples. *Journal of Abnormal Child Psychology*, 33(4), 431–443.
- McCuish, E. C., Corrado, R., Lussier, P., & Hart, S. D. (2014). Psychopathic traits and offending trajectories from early adolescence to adulthood. *Journal of Criminal Justice*, 42(1), 66–76.
- McLachlan, G., & Peel, D. (2000). Finite mixture models. *Wiley Series in Probability and Statistics*, 420–427.
- McMahon, R. J., Witkiewitz, K., & Kotler, J. S. (2010). Predictive validity of callous-unemotional traits measured in early adolescence with respect to multiple antisocial outcomes. *Journal of Abnormal Psychology*, 119(4), 752.
- Muthén, L. K., & Muthén, B. (2017). *1998–2017 Mplus User's Guide* (8th ed.). Los Angeles, CA: Muthén.
- Muthén, L. K., & Muthén, B. O. (2011). *Mplus (6.12) [Computer software]*.
- Muthén, B. (2000). Methodological issues in random coefficient growth modeling using a latent variable framework: Applications to the development of heavy drinking. In J. S. Rose, L. Chassin, C. Presson, & J. Sherman (Eds.), *Multivariate applications in substance use research: New methods for new questions* (pp. 113–140). Mahwah, NJ: Erlbaum.
- Nagin, D. S. (2005). *Group-based modeling of development*. Cambridge, MA: Harvard University Press. <https://doi.org/10.4159/9780674041318>.
- Nylund, K. L., Asparouhov, T., & Muthén, B. (2007). Deciding on the number of classes in latent class analysis and growth mixture modeling. A Monte Carlo simulation study. *Structural Equation Modeling*, 14, 535–569.
- Pechorro, P., Ray, J. V., Alberto, I., & Simões, M. R. (2020). The utility of self-reported psychopathic traits in predicting recidivism among a sample of incarcerated female youths. *International Journal of Law and Psychiatry*, 71, 101,596.
- Pechorro, P., Seto, M. C., Ray, J. V., Alberto, I., & Simões, M. R. (2019). A prospective study on self-reported psychopathy and criminal recidivism among incarcerated male juvenile offenders. *International Journal of Offender Therapy and Comparative Criminology*, 63(14), 2383–2405.
- Piquero, A. R., Blumstein, A., Brame, R., Haapanen, R., Mulvey, E. P., & Nagin, D. S. (2001). *Assessing the impact of exposure time and incapacitation on longitudinal trajectories of criminal offending*. 16(1) pp. 54–74).

- Poythress, N. G., Douglas, K. S., Falkenbach, D., Cruise, K., Lee, Z., Murrie, D. C., & Vitacco, M. (2006). Internal consistency reliability of the self-report antisocial process screening device. *Assessment, 13*(1), 107–113.
- Salekin, R. T. (2008). Psychopathy and recidivism from mid-adolescence to young adulthood: cumulating legal problems and limiting life opportunities. *Journal of Abnormal Psychology, 117*(2), 386–395. <https://doi.org/10.1037/0021-843X.117.2.386>.
- Salekin, R. T. (2016). Psychopathy in childhood: Toward better informing the DSM-5 and ICD-11 conduct disorder specifiers. *Personality Disorders, Theory, Research, and Treatment, 7*(2), 180.
- Salekin, R. T., Debus, S. A., & Barker, E. D. (2010). Adolescent psychopathy and the five factor model: Domain and facet analysis. *Journal of Psychopathology and Behavioral Assessment, 32*(4), 501–514.
- Salekin, R. T., & Hare, R. (2016). *Proposed specifiers for conduct disorder (PSCD) scale*. Tuscaloosa, AL: Department of Psychology, University of Alabama. Unpublished manuscript.
- Salekin, R. T., & Lynam, D. R. (2010). *Handbook of child and adolescent psychopathy*. New York: The Guilford Press.
- Salekin, R. T., Rogers, R., & Sewell, K. W. (1997). Construct validity of psychopathy in a female offender sample: A multitrait-multimethod evaluation. *Journal of Abnormal Psychology, 106*(4), 576.
- Salihovic, S., & Stattin, H. (2017). Psychopathic traits and delinquency trajectories in adolescence. *Journal of Psychopathology and Behavioral Assessment, 39*(1), 15–24.
- Schmidt, F., Campbell, M. A., & Houlding, C. (2011). Comparative analyses of the YLS/CMI, SAVRY, and PCL: YV in adolescent offenders: A 10-year follow-up into adulthood. *Youth Violence and Juvenile Justice, 9*(1), 23–42.
- Schmidt, F., McKinnon, L., Chattha, H. K., & Brownlee, K. (2006). Concurrent and predictive validity of the psychopathy checklist: Youth version across gender and ethnicity. *Psychological Assessment, 18*(4), 393.
- Shaffer, C., Gatner, D., Gray, A. L., Douglas, K. S., Viljoen, J. L., Tweed, R., ... Gagnon, N. (2016). Incremental and predictive validity of the antisocial process screening device in a community sample of male and female ethnic minority and caucasian youth. *Journal of Abnormal Child Psychology, 44*(8), 1599–1612.
- Shaffer, D., Fisher, P., Lucas, C. P., Dulcan, M. K., & Schwab-Stone, M. E. (2000). NIMH diagnostic interview schedule for children version IV (NIMH DISC-IV): Description, differences from previous versions, and reliability of some common diagnoses. *Journal of the American Academy of Child and Adolescent Psychiatry, 39*(1), 28–38.
- da Silva, D. R., Salekin, R. T., & Rijo, D. (2019). Psychopathic severity profiles: A latent profile analysis in youth samples with implications for the diagnosis of conduct disorder. *Journal of Criminal Justice, 60*, 74–83.
- Skeem, J. L., & Cooke, D. J. (2010). Is criminal behavior a central component of psychopathy? Conceptual directions for resolving the debate. *Psychological Assessment, 22*(2), 433.
- Skeem, J. L., Johansson, P., Andershed, H., Kerr, M., & Loudon, J. (2007). Two subtypes of psychopathic violent offenders that parallel primary and secondary variants. *Journal of Abnormal Psychology, 116*(2), 395.
- Stockdale, K. C., Olver, M. E., & Wong, S. C. (2010). The psychopathy checklist: Youth Version and adolescent and adult recidivism: Considerations with respect to gender, ethnicity, and age. *Psychological Assessment, 22*(4), 768.
- Van Damme, L., Colins, O. F., & Vanderplasschen, W. (2014). Gender differences in psychiatric disorders and clusters of self-esteem among detained adolescents. *Psychiatry Research, 220*(3), 991–997.
- Vermunt, J. K., & Magidson, J. (2006). Latent class cluster analysis. In J. Hagenaars, & A. McCutcheon (Eds.), *Applied latent class analysis* (pp. 175–198). New York: NY: Cambridge University Press.
- Verona, E., Sprague, J., & Javdani, S. (2012). Gender and factor-level interactions in psychopathy: Implications for self-directed violence risk and borderline personality disorder symptoms. *Personality Disorders, Theory, Research, and Treatment, 3*(3), 247.
- Verona, E., & Vitale, J. (2018). Psychopathy in women: Assessment, manifestations, and etiology. In *Handbook of Psychopathy* (pp. 509–528). NY: The Guilford Press.
- Verschuere, B., Candel, I., Van Reenen, L., & Korebrits, A. (2012). Validity of the modified Child psychopathy scale for juvenile justice center residents. *Journal of Psychopathology and Behavioral Assessment, 34*(2), 244–252. <https://doi.org/10.1007/s10862-011-9272-3>.
- Veysey, B. M., & Hamilton, Z. (2007). Girls will be girls: Gender differences in predictors of success for diverted youth with mental health and substance abuse disorders. *Journal of Contemporary Criminal Justice, 23*(4), 341–362.
- Vincent, G. M., Odgers, C. L., McCormick, A. V., & Corrado, R. R. (2008). The PCL: YV and recidivism in male and female juveniles: A follow-up into young adulthood. *International Journal of Law and Psychiatry, 31*(3), 287–296.
- Vitacco, M. J., Neumann, C. S., & Jackson, R. L. (2005). Testing a four-factor model of psychopathy and its association with ethnicity, gender, intelligence, and violence. *Journal of Consulting and Clinical Psychology, 73*(3), 466.
- Vitacco, M. J., Neumann, C. S., & Pardini, D. A. (2014). Predicting future criminal offending in a community-based sample of males using self-reported psychopathy. *Criminal Justice and Behavior, 41*(3), 345–363. <https://doi.org/10.1177/0093854813500488>.
- de Vogel, V., & de Spa, E. (2019). Gender differences in violent offending: Results from a multicentre comparison study in Dutch forensic psychiatry. *Psychology, Crime & Law, 25*(7), 739–751.
- Walsh, Z., Allen, L. C., & Kosson, D. S. (2007). Beyond social deviance: Substance use disorders and the dimensions of psychopathy. *Journal of Personality Disorders, 21*(3), 273–288. <https://doi.org/10.1521/pedi.2007.21.3.273>.
- Walters, G. D. (2015). A multi-wave cross-lagged regression analysis of the youth psychopathic traits inventory and self-reported offending. *Journal of Criminal Justice, 43*(4), 327–336.
- Walters, G. D., Knight, R. A., Grann, M., & Dahle, K. P. (2008). Incremental validity of the psychopathy checklist facet scores: Predicting release outcome in six samples. *Journal of Abnormal Psychology, 117*(2), 396–405. <https://doi.org/10.1037/0021-843x.117.2.396>.
- Wang, M.-C., Gong, J., Gao, Y., Zhang, X., Yang, W., & Luo, J. (2020). Variants of psychopathy in Chinese male offenders: A latent profile analysis in a large prison sample. *Journal of Criminal Justice, 69*, 101,708.
- Warren, J. I., Burnette, M. L., South, S. C., Chauhan, P., Bale, R., Friend, R., & Van Patten, I. (2003). Psychopathy in women: Structural modeling and comorbidity. *International Journal of Law and Psychiatry, 26*(3), 223–242.