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Structural analysis of the PCL-R and relationship to BIG FIVE personality traits and parenting characteristics in an Hispanic female offender sample

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Abstract

Valid measurement of psychopathic traits in females using the Psychopathy Checklist Revised (PCL-R) continues to be an under researched topic. Previous latent variable and other psychometric studies have raised questions concerning the structure and predictive effects of psychopathic traits in females. New cross-cultural research finds good support for a four-factor model of psychopathy in females and the predictive effects of the psychopathy factors (Declercq, Carter, & Neumann, 2015; Neumann, Hare, & Pardini, 2015). Nevertheless, additional research is needed on females, especially individuals from diverse cultural backgrounds. We investigated the factor structure and construct validity of the PCL-R in a female Hispanic sample ($n = 155$). Confirmatory factor analysis showed that the four-factor model provided an adequate fit. Furthermore, structural equation modelling revealed significant negative and positive predictive effects, respectively, between general personality (Agreeableness and Conscientiousness), and indifferent/abusive parenting with the broad syndrome of psychopathy.

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Keywords

psychopathy; female; PCL-R; SEM; parenting

Introduction

The four-factor model of psychopathy has been extensively supported through a large series of item-level latent variable studies that employ a wide diversity of samples and types of assessments (Neumann & Hare, 2008; Neumann et al., 2015). There is also support for a three-factor model of psychopathy (Cook & Michie, 2001; Larsson et al., 2006), which excludes an overt antisocial/developmental factor. However, this excluded factor may be questioned on both conceptual and empirical grounds (Hare & Neumann, 2006, 2008; Lynam & Miller, 2012). Moreover, the structural modelling results for the four-factor model of psychopathy are in-line with behavior genetic research that finds all four domains of the model load onto a common genetic factor (e.g., Larsson, Andershed, & Lichtenstein, 2006), and longitudinal research (e.g., Forsman, Lichtenstein, Andershed, & Larsson, 2010) showing these domains are inter-related across time (Hare & Neumann, 2010). While there has been debate regarding the two models (Neumann, Vitacco, Hare, & Wupperman, 2005), it is helpful to note that the three-factor model is embedded within the four-factor model. Alternative widely validated factor structures based on other measurements such as the two factor model based on the Psychopathic Personality Inventory (Lilienfeld & Widows, 2005) would roughly map onto the overarching earlier two-factor model of psychopathy (e.g. Benning, Patrick, Hicks, Blonigen, & Krueger, 2003; but also see Neumann, Uzieblo, Crombez, & Hare, 2013; Patrick, Edens, Poythress, Lilienfeld, & Benning, 2006). However, the four-factor model may be preferred given the potential for biased prediction parameters when the antisocial factor is eliminated (Vitacco, Neumann, & Jackson, 2005). Moreover, longitudinal studies of youth have consistently found overt antisociality to be a critical early feature, along with other traits (e.g., callous-unemotional, affective detachment), in the manifestation of psychopathic personality (Eisenbarth, Stadtland, Nedopil, & Osterheider, 2012; Fontaine, McCrory, Boivin, Moffitt, & Viding, 2011; Neumann, Wampler, Taylor, Blonigen, & Iacono, 2011). Similar results are found for structural studies of youth samples (Kosson, Cyterski, Steuerwald, Neumann, & Walker-Matthews, 2002; Kosson et al., 2013; Neumann, Kosson, Forth, & Hare, 2006). As such, we employed a four-factor model in the current study.

While most studies have tended to involve male participants, given the high prevalence of psychopathy in males compared to females, there are some studies that have found that the four-factor model also works well for representing the larger construct in females, based on both PCL-R and the Self-Report Psychopathy scale (SRP; Paulhus, Neumann, & Hare, 2016). For example, the four-factor model has shown adequate fit with female offenders (Neumann, Hare, & Newman, 2007), female youth samples (Kosson et al., 2013) as well as more broadly across the globe via the SRP (Gordts, Uzieblo, Neumann, Van den Bussche, & Rossi, 2015; Hare & Neumann, 2008; Neumann, Schmitt, Carter, Embley, & Hare, 2012), however less across different ethnic backgrounds in rarely studied women.

Although structural analyses have suggested gender variance only in the antisocial factor (Bolt, Hare, Vitale, & Newman, 2004), existing gender differences (de Vogel & Lancel, 2016; Hicks et al., 2012) continue to raise questions concerning the structural and predictive effects of psychopathic traits in females. More specifically, while recent cross-cultural research finds good support for the structure of psychopathic personality in females (Neumann et al., 2012) and the predictive effects of the psychopathy factors (Declercq et al., 2015), the predictive validity of the PCL-R for recidivism appears to be less strong in females, compared to males (Coid et al., 2009; Eisenbarth et al., 2012). Thus, additional research on the correlates and predictive effects of psychopathic traits in females is warranted, especially in under-studied minority samples (Olver, Neumann, Kingston, Nicholaichuk, & Wong, 2018).

Research on general or normal range personality and psychopathy has shown a moderate to strong relationship between psychopathy and the Five Factor Model (FFM). Especially Agreeableness as well as Conscientiousness explain a large amount of variance in psychopathy (O'Boyle, Forsyth, Banks, Story, & White, 2015), which seems to hold across different sample types and assessment tools (see Lynam & Miller, 2015). More specifically, a meta-analysis presented by Lynam and Derefinko (2006) revealed a negative moderate-to-large weighted effect size between Conscientiousness and psychopathy, and a negative large weighted effect size between Agreeableness and psychopathy. In contrast, the weighted effect sizes between psychopathy and the FFM domains of Neuroticism and Extraversion, were small (positive) and minuscule (negative), respectively. As such, we focused our analyses on the Agreeableness and Conscientiousness domains, expecting to see significant associations among these FFM domains and the PCL-R.

Attachment, which has a strong influence on temperament (Grossmann, Grossmann, & Waters, 2006), a precursor of personality, is built in early life and is significantly associated with parenting variables. Thus, parenting by the mother and father can be described as early potential correlates of psychopathic traits and therefore serve as construct validation variable. A systematic review of literature on the impact of parenting on callous-unemotional (CU) and antisocial behavior found consistent evidence for a negative impact of negative parenting styles, especially harsh parenting on CU and antisocial behavior, even after controlling for pre-existing personality traits (Waller, Gardner, & Hyde, 2013). Furthermore, parenting seems to not only have an impact on antisocial behavior and CU, but also on their interaction (e.g., Fontaine et al., 2011). A recent study highlighted that a positive impact of parental warmth on conduct problems seems to be only present in those with low or medium levels of affective psychopathic traits in a predominantly male and ethnically diverse sample of adolescents (Chinchilla & Kosson, 2015). In addition, in an adolescent offender sample, an association was found between retrospectively reported harsh parenting style and the antisocial component of psychopathy, but only in those low on affective deficits and in those high on interpersonal deficits (Edens, Skopp, & Cahill, 2008). However, these findings are limited to juvenile (and male) samples. On the other hand, for Hispanic female adolescents, inconsistent parenting and poor supervision has been linked to the narcissistic and impulsive aspects of psychopathic traits, but not to the callous aspect (Vitacco, Neumann, Ramos, & Roberts, 2003). This finding for an Hispanic sample provides some basis for generating expectations for the current study. While few studies exist on poor

parenting experiences during upbringing in adult offenders, Farrington (2006) has shown that harsh parenting is robustly associated with psychopathic traits in adults. Thus, we hypothesized that the PCL-R total and its factors, especially lifestyle and antisocial, would be positively associated with negative parenting (indifferent or abusive) styles, however with smaller effect sizes due to measurement variance (i.e., methods of assessment). Another type of parenting style is referred to as over-controlling, which we also assessed, though we did not have specific hypotheses regarding this type of parenting being associated with psychopathic traits.

Methods

Sample

For the current study, 155 female offenders, self-identified with Hispanic background, were recruited for a larger brain imaging study. Mean age was 34.23 ($SD = 7.06$, range = 21 – 54). For the FFM and parenting variables used in the current study some participants were missing these data, however, there was little difference between the cases with (14.8%) versus without (85.2%) missing data for all study variables (including PCL-R). Moreover, when a significant difference did occur, they were generally associated with very small effect sizes (mean $\eta^2 = .01$), therefore we included all cases with data for the study variables.

Measures

Psychopathy Checklist Revised (PCL-R; Hare, 2003)—The PCL-R is a clinical rating scale to measure psychopathic personality traits. It includes 20 items (scored 0, 1 or 2), which are rated based on an interview with the participant and information from official records, clinical files. The structure of the PCL-R has been described in a broad range of literature, where the earliest structure to emerge involved a two-factor solution (Hare et al., 1990), with an interpersonal/affective factor and a deviant lifestyle factor. Based on use of sophisticated mathematical modelling, a four-factor solution (Hare, 2003; Neumann et al., 2015) has received the most empirical support with interpersonal, affective, lifestyle and antisocial factors.

In the current sample, ratings were completed by trained research staff, with a bachelor's degree or higher. Research staff completed official Hare PCL-R training (by certified instructor ***). All PCL-R interviews were videotaped so that double ratings could be acquired. Inter-rater reliability was consistent with other published results ($\kappa > .8$) and in cases in which two raters disagreed by more than the standard error on the test (i.e., 2 points), a final score was achieved via discussion between the two raters and another trained expert. These consensus ratings were used in this report.

NEO-PI Five-Factor Inventory (FFI)—The NEO-PI, one of the most widely used measures for the big five personality traits was implemented with the 60-item version (Costa & McCrae, 1992). The self-report items are rated on a 5-point Likert scale ranging from “strongly disagree” to “strongly agree” and which reflect the five higher-order domains Neuroticism, Extraversion, Openness to Experiences, Agreeableness and Conscientiousness. There are 12 items per FFM-FFI domain. In the current data set, Alpha coefficients were

generally acceptable and ranged between .73 (Extraversion) to .83 (Conscientiousness). However, the Openness scale had a somewhat low alpha value (.53), which has also been reported previously for a genetics study on addiction (Bjornsdottir et al., 2014). The mean inter-item correlations (MICs) ranged from .19 (Extroversion) to .30 (Conscientiousness), with Openness MIC = .10.

Measure of Parenting Style (MOPS; Parker et al., 1997)—Participants self-reported experienced parenting styles via the MOPS. The self-report is a 30-item scale asking about mothers' and fathers' parenting behavior during the first 16 years of the participant, and provides quantitative scales of abusive (unpredictable, verbally or physically abusive), indifferent (ignoring, uncaring or uninterested) and overcontrolling (overprotective, critical or provoking guilt) parental styles. The 15 statements regarding the mothers' behavior and 15 statements regarding the fathers' behavior are scored on a Likert scale ranging from 0 ('not true at all') to 3 ('extremely true'). Alphas for the MOPS scales were good (range = .70 – .94), though it was low for mother over-controlling (.56). The MICs were strong for the mother and father indifference and abuse scales (range = .60 – .77), suggesting very homogeneous scales; while the MICs for the mother and father over-control scales were within acceptable ranges (.23 – .38).

Procedure

Participants were invited to volunteer for a research study involving interviews, MRI scans and outcomes assessment. Participants were located within a medium-maximum security prison in ***. All participants provided written informed consent approved by the University of *** and Ethical and Independent Review Services (E&I) as well as the Office of Human Research Protections (OHRP).

Data analysis

Basic descriptive statistics were generated along with Pearson correlations. Given the nature of the sample, different assessment methods, and influence of measurement error, primary analyses involved latent variable methods. Confirmatory factor analysis (CFA) assessment of the four-factor model of psychopathy based on PCL-R items was conducted, using a diagonally weighted least squares estimator with robust standard errors and a mean and variance adjusted test statistic (WMSMV) in the lavaan package in R (Rosseel, 2012). We also examined the item-level four-factor model using robust weighted least squares via Mplus (Muthen & Muthen, 2010). Structural equation modelling (SEM) analyses, using maximum likelihood estimation for scale scores, was conducted in Mplus. The SEM analyses examined the predictive effects involving the offenders self-reported general personality features (FFM), their mother's and father's parenting styles (MOPS), and PCL-R based psychopathic personality. To assess model fit, we relied upon a conventional two-index fit strategy (i.e., an incremental and an absolute index), using the Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA; Neumann et al., 2015). We adopted the traditional CFI .90 and RMSEA .08 as indicative of acceptable model fit (West, Taylor, & Wu, 2012). This rationale was used given that model complexity increases the difficulty of achieving conventional levels of model fit (Marsh, Wen, & Hau,

2004). Traditional fit criteria were used to avoid falsely rejecting a viable latent variable model.

Results

Descriptive findings

Descriptive results are presented in Table 1. The mean PCL-R total score was 18.83 ($SD = 6.14$). Only two of the female offenders (1.3%) had a PCL-R total at or above 30. Most of the offenders in this sample ($n = 85$, 54.8%) presented with moderate levels of psychopathic features (PCL-R between 19–29), with remaining cases at PCL-R totals of 18 or below ($n = 68$, 43.9%).

Cronbach's Alpha is significantly influenced by scale length, and is not a measure of unidimensionality (Schmitt, 1996). Thus, in addition to presenting Alpha, we focus here on mean item inter-correlations (MICs), given they provide reliable estimates of scale homogeneity and unidimensionality. Based on the recommended ranges ($MIC = .15-.50$) provided by Clark and Watson (1995), PCL-R total ($MIC = .15$) and factor score MICs (range = .17 – .30) were all in acceptable ranges (see Table 1).

In terms of PCL-R (manifest variable) factor correlations, the PCL-R factors were significantly correlated (p 's < .001). In addition, each factor was strongly associated with the PCL-R total score (see Table 2). To examine how the PCL-R total and factor scales were associated with the MOPS and FFM scales, we generated manifest variable Pearson correlations. We used one-tail tests for these correlations, given our hypotheses. As shown in Table 3, total psychopathy and several of the factor scores were primarily significantly correlated with the FFM Agreeableness and Conscientiousness scales, and the MOPS indifferent and abusive scales, as expected. Given this pattern of associations, these FFM and MOPS scales were used for our SEM analyses below. (Note that we did examine supplementary SEMs using the FFM neuroticism and extraversion scales but these did not yield notable substantive results, consistent with Lynam & Derefinko, 2006)

CFA Results

For the CFA, all items were set to load on their respective factor, except for item 19 (revocation of release) for which all but four offenders had a value 2. Thus item 19 did not possess meaningful variance for modelling. A confirmatory factor analysis (CFA) based on the four-factor model resulted in adequate fit, $\chi^2(113) = 166.84$; $CFI = .92$; $RMSEA = .05$, 90% CI [0.03,0.06]. The average item-to-factor-loading was strong ($M = .60$), with highest mean factor loadings for the Antisocial ($M = .73$) and Affective ($M = .65$) factors, and lowest for the Lifestyle ($M = .55$) and Interpersonal ($M = .51$) factors. All factor loadings and factor correlations were significant (p 's < .001). The pattern of latent correlations indicated strongly inter-correlated factors, and thus provided support for using a superordinate psychopathy factor to represent the syndrome of psychopathy, consistent with previous research (Baskin-Sommers, Neumann, Cope, & Kiehl, 2016; Neumann & Hare, 2007; Neumann & Hare, 2008). Standardized parameters are presented in Figure 1.

SEM Results

The FFM Agreeableness and Conscientiousness scales were significantly correlated ($r = .35$, $p < .001$). Similarly, the MOPS indifferent and abusive scales were significantly correlated for the mother ($r = .76$, $p < .001$) and father ($r = .55$, $p < .001$) parenting scales. Thus, these scales were used as indicators for respective latent variables representing FFM-based psychopathic traits, and mother, father poor parenting style (MOPS) factors. The PCL-R factor scales were used as indicators of psychopathic personality (see Figure 2). Model fit for the SEM was excellent ($X^2(29) = 45.43$, CFI = .95, RMSEA = .05, 90% CI [0.02, 0.08]).

The SEM results indicated that specifying psychopathy as a predictor of the FFM and MOPS factors was statistically equivalent to having the FFM and MOPS factors predicting the PCL-R psychopathy factor. These types of models are referred to as alternative equivalent models (MacCallum, Wegener, Uchino, & Fabrigar, 1993). Although these models may have different substantive interpretations, they are nonetheless statistically identical (e.g., fit, residuals).

The standardized parameters displayed in Figure 2A indicate that the PCL-R psychopathy factor had a strong negative predictive effect on the female offender's reports of their general personality features (FFM-based psychopathic traits), and more moderate positive effects in predicting poor parenting styles (MOPS). The same general pattern was observed in Figure 2B, when the FFM and MOPS factors were specified as predictors of PCL-R psychopathy.

Discussion

Consistent with a large diversity of studies involving different samples and a variety of psychopathy assessments (e.g., Neumann et al., 2015), the results provide further support for the four-factor model of psychopathy (Hare & Neumann, 2006, 2008). The results indicate that this model can be used to adequately represent psychopathic personality in female offenders, in-line with previous female psychopathy research (Declercq et al., 2015; Kosson et al., 2013; Neumann & Hare, 2007; Neumann & Pardini, 2012). Moreover, the current study extends research to Hispanic female offenders.

There is a considerable literature on the link between basic personality characteristics and psychopathy (Lynam & Miller, 2015). Across both meta-analytic findings (Lynam & Derefinko, 2006) and summative correlations provided by Lynam and Miller (2015, see Tables 1 & 3), psychopathy total scores and psychopathic trait domains are predominantly inversely associated with the FFM Agreeableness and Conscientiousness domains. Results for the current study match closely these published findings, and further extend existing findings on the link between psychopathic personality and these basic personality traits. Specifically, the SEM results revealed a moderately strong inverse association between a latent FFM psychopathy-related trait factor and the superordinate PCL-R psychopathy factor in Hispanic female offenders. Overall, the findings are in line with current thinking that psychopathy is best viewed from dimensional and developmental perspectives.

Both neurobiological and environmental factors contribute to the development of psychopathy (Loeber, Burke, & Pardini, 2009), and thus, one avenue of research has been

focused on identifying potentially changeable environmental factors. There is good evidence documenting the role of negative parenting in the expression of offspring psychopathic traits (Fontaine et al., 2011; Loeber et al., 2009; Vitacco et al., 2003; Waller et al., 2013).

However, most research on parenting and psychopathy is conducted with youth samples, and there is a relative absence of such research with adult offenders (Farrington, 2006). To this end, the current results are important given that they also reveal a positive association between negative parenting styles (indifference, abuse) and increased levels of psychopathic traits. Moreover, the relationship between an indifferent maternal as well as an indifferent or overcontrolling paternal style and the antisocial factor matches previous findings regarding harsh parenting styles in juvenile offenders (Edens et al., 2008). In addition, however, the association between abusive maternal style and the lifestyle factor seems to reflect specific relationships in this female offender sample. The current results also match findings from a large general population sample investigating parenting styles and psychopathology, which found a stronger negative impact for cold parenting (collapsing indifferent and abusive scales) than for over-controlling styles (Alanko et al., 2008). However, effect sizes regarding parenting in our study are smaller compared to previous work on the relationship between parenting and psychopathic or callous-unemotional traits, which can be due to measurement variance, as most previous work related to self-report or parent-reported psychopathy measures.

In terms of manifest variable associations in the current study, there were some differences regarding how the MOPS scales for the mother and father were correlated with the PCL-R scales, which could be due to measurement error. However, in terms of the SEM results, which account for such error, the findings suggested a stronger impact of mothers' abusive/indifferent parenting style on the offenders' psychopathic traits compared to this same negative style in fathers'. Most studies on parenting and psychopathy do not separate the parenting effects of mother versus father. Nevertheless, assuming the current results are replicable, they suggest female offenders' psychopathic traits were positively associated more so to their perceptions of negative parenting by their mothers, relative to their fathers.

Taking the FFM and MOPS results together, one might speculate as to whether there is a directed pattern in the developmental expression of 'normative' (basic) personality and pathological personality? Lynam and Miller (2015) would likely assert that basic personality is all that is needed for articulating the larger construct of psychopathy. However, another perspective to consider is that psychopathic personality traits emerge, in part, from an association with basic (normal-range) traits which is not static. For instance, Warner et al. (2004) found that personality disorder symptoms and normative personality traits were reciprocally related across time (Warner et al., 2004). Based on these findings, Hare and Neumann (2008) highlighted that "normal-range traits are reciprocally related to pathological personality traits. If this assumption is correct, then normal range traits may contribute to the development of personality disorder traits, but additional factors, such as pathological interactions with parents or peers (e.g., Frick, Cornell, Barry, Bodin, & Dane, 2003; Pardini, Lochman, & Powell, 2007), may be necessary for the development of personality disorder traits, including those that define psychopathy" (p. 237), and might also contribute to changes in personality traits and disorders over time. Looking at the latent associations between the MOPS and FFM factors in Figure 1, the MOPS factor for mothers'

is not associated with the FFM factor, though it has a relatively robust positive association with the PCL-R factor across both SEMs. In contrast, the MOPS factor for fathers' is meaningfully inversely linked with the FFM trait factor. This pattern of associations is consistent with the speculation by Hare and Neumann (2008). That is, the results suggest parenting behavior of mothers and fathers may play differential roles in the expression of disordered versus basic personality traits and attachment disturbances for females.

Keeping in mind the cross-sectional nature of the current study, the findings from the alternative equivalent models are worth some consideration. In Figure 2A, the model results highlight that the female offenders level of psychopathic traits were robustly positively linked to parenting across both parents. To the extent that psychopathic traits have developmental origins, these findings highlight the effect such traits may have on parenting style. On the other hand, in Figure 2B, which controls for the shared variance among the parenting and FFM factors, the MOPS factor for mothers positively predicted psychopathic traits more so than did the fathers MOPS factor. In contrast, the MOPS factor for fathers had an indirect effect on psychopathic traits via the FFM factor. Overall, the findings are in-line with developmental research showing that parenting style predicts child temperament and personality characteristics, but also, that child temperamental/personality influences parenting style (e.g., Prinzie et al., 2003; Rothbart, 2007). At the same time, the current results suggest that research on the combination of normal-range and psychopathic personality traits in conjunction with parenting style may provide a fruitful future avenue to pursue.

In terms of study limitations, caution is warranted given the sample for the current study was moderate in size. Also, most of PCL-R psychopathy total scores were primarily at a moderate level (PCL-R total between 19–29), and thus additional research is needed with larger female samples with a greater range of scores. The limited sample used in the current study may have played a role in influencing the estimated parameters, especially the item-to-factor loadings. Nevertheless, given the strong psychometric characteristics evidence by each of the PCL-based assessments (Neumann et al., 2015), the current results provide a stepping stone for additional psychopathy research with diverse female samples. We would note low alpha values for some of the PCL-R scales, which some may see as a limitation. However, as we have highlighted, alpha is strongly influenced by scale length, and the PCL-R scales are very brief (4–5 item) scales. Thus, we relied upon empirical research that has demonstrated mean inter-item correlations (MICs) provide a sound method for assessing scale homogeneity and unidimensionality (Schmitt, 1996). In this case, the MICs were good for all PCL-R scales. Another limitation involves the retrospective reports of parenting styles. While there was no incentive for the offenders to bias such reports, caution should be used when interpreting the current MOPS findings. In addition, effect sizes for the relationship with MOPS scales are rather small, which could be due to measurement variance involving different assessment approaches, and/or potentially the unique nature of the current sample, thus results should be interpreted carefully.

In sum, the current study replicates previous findings on the validity of the four-factor model of psychopathy in females and extends it to a specifically Hispanic offender sample. The results were also consistent with established inverse relationships between psychopathy and

the general personality traits of Conscientiousness and Agreeableness. Similarly, as expected, psychopathic traits were positively linked with negative parenting styles. Finally, the equivalent SEMs indicated that psychopathic factors were linked with personality (inversely) and negative parenting (positively), and personality and parenting predicting the psychopathy factor. Lastly, the results suggest stronger impact of mothers' negative parenting style on expression of psychopathic traits for the current sample of female Hispanic offenders.

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Highlights

- Psychopathy measurement in female diverse samples was under-investigated
- Four-factor model provides an adequate fit for the PCL-R in a female Hispanic prisoner sample
- SEM including Big Five and parenting variables provide additional evidence for validity of PCL-R structure

Figure 1.
Standardized coefficients for the four-factor model

(A)

(B)

Figure 2.
Alternative equivalent structural equation models (SEMs) with standardized parameters

Table 1

Descriptive statistics for the PCL-R total and sum factor scores

	<i>M</i>	<i>SD</i>	Alpha	MIC
Affective	2.96	1.84	0.64	0.30
Interpersonal	1.79	1.36	0.42	0.17
Lifestyle	5.60	2.07	0.57	0.21
Antisocial	6.62	2.26	0.61	0.22
PCL-R	18.83	6.14	0.78	0.15

Note. *N* = 155; PCL-R = Psychopathy Checklist Revised sum score

Table 2

Manifest variable Pearson correlations between PCL-R total and factors

	PCL-R	Affective	Interpersonal	Lifestyle	Antisocial
PCL-R	1				
Affective	.65***	1			
Interpersonal	.63***	.41***	1		
Lifestyle	.79***	.35***	.38***	1	
Antisocial	.78***	.34***	.32***	.50***	1

Note: $N = 155$;

 $p < .001$

Table 3

Manifest variable correlations between MOPS, FFM, and PCL-R scales

	Interpersonal	Affective	Lifestyle	Antisocial	PCL-R Total
Mother Indifferent (MOPS)	.01	.03	.13	.22**	.15*
Mother Abusive (MOPS)	.01	.11	.17*	.13	.16*
Mother Overcontrolling (MOPS)	-.03	.13	.02	-.13	.01
Father Indifferent (MOPS)	-.01	-.04	.13	.14*	.10
Father Abusive (MOPS)	.09	-.02	.09	.18*	.13
Father Overcontrolling (MOPS)	-.03	-.04	.02	.07	.05
Neuroticism (N; FFM)	-.19**	-.06	.11	.04	.00
Extroversion (E; FFM)	.16*	-.04	.08	.02	.11
Openness (O; FFM)	.11	-.08	-.06	.09	.03
Agreeableness (A; FFM)	-.14*	-.12	-.12	-.22**	-.22**
Conscientiousness (C; FFM)	.00	-.13	-.27***	-.19*	-.21**

Note. p-value set to one-tail.

*

p < .05,

**

p < .01,

p < .001.

Significant correlations between Mother MOPS and FFM scales were: Indifferent, Overcontrolling with Neuroticism, r 's = .16*, .14*; Abusive, Overcontrolling with Agreeableness, r 's = -.14*, -.14*; Father MOPS and FFM scales were: Indifferent with Neuroticism, r = .19*; Abusive with Agreeableness, r = -.17*,