

## ORIGINAL ARTICLE

# The construct of psychopathy in a Chilean prison population

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**Objective:** To test the four-factor model of the Hare Psychopathy Checklist - Revised (PCL-R) empirical construct of psychopathy in a Chilean prison population by using instruments that supply different types of data.

**Methods:** Two hundred and nine male inmates of the Prison of Los Andes, Chile, were evaluated. Confirmatory factor analysis was carried out with the PCL-R and the Self-Report of Psychopathy - III - Short Form (SRP-III-SF).

**Results:** The distributions of total PCL-R and SRP-III-SF scores were normal (Kolmogorov-Smirnov [K-S] = 1.04,  $p = 0.230$ ; K-S = 0.812,  $p = 0.525$ , respectively), with means of  $20.9 \pm 6.8$  for the former and  $61.6 \pm 15.2$  for the latter. Model fit was good for the PCL-R (Tucker Lewis index [TLI] = 0.96; root mean square error of approximation [RMSEA] = 0.04) and for the SRP-SF (TLI = 0.94, RMSEA = 0.04).

**Conclusions:** The results obtained with the PCL-R and the SRP-SF showed adequate fit to the empirical four-factor model of psychopathy and support this model. As foreseeable, fit was better for the PCL-R, which combines several sources of information.

**Keywords:** Psychopathy; assessment; self-reported tool; confirmatory factor analysis; latent variable model

## Introduction

The concept of psychopathy has evolved from its traditional clinical descriptions<sup>1,2</sup> and has been operationalized in several assessment instruments, among which the Psychopathy Checklist - Revised (PCL-R)<sup>3,4</sup> and its derivatives, the Psychopathy Checklist: Screening Version (PCL:SV)<sup>5</sup> and the Psychopathy Checklist: Youth Version (PCL:YV),<sup>6</sup> stand out. Recent work with the Self-Report Psychopathy Scale (SRPS), which was designed to resemble the PCL scales, has also shown excellent promise.<sup>7,8</sup>

In Latin America, several descriptive studies have assessed the prevalence of psychopathy in prison populations and the psychometric properties of the PCL-R.<sup>9-12</sup> Nevertheless, the PCL scales, which provide a valid and reliable assessment of the larger psychopathy construct, have not been extensively examined via sophisticated modeling in diverse cultural samples outside of North America, where most PCL-R research has been conducted.<sup>7</sup>

On the other hand, besides the evidence that could be supplied by testing this construct with the PCL-R, additional evidence might be obtained by doing the same

with other instruments that provide different information, such as the SRPS.<sup>13</sup> Trying to obtain equivalent results based on two types of information, one coming from a professional assessment of an individual and the other coming solely from the individual's self-report, is an even more rigorous examination of the larger construct.

The structure of psychopathy, as that of most concepts in psychology and in science, makes reference to a latent variable that is not directly observable. The development of confirmatory factor analysis (CFA) and other measures for latent variable analysis made it possible to go further than exploratory factor analysis (EFA) and propose specific model hypotheses that can be statistically tested (e.g., item-to-factor associations as well as correlations between factors).<sup>14</sup> If the latent variable model receives support based on different samples of individuals that have been assessed in diverse ways, the sustainability of the model increases as a viable representation of a theoretical construct, because the latent variables allow generalization of associations. Recent studies based on latent variables analysis support the four-factor model of psychopathy.<sup>15,16</sup> This model represents four highly correlated dimensions of psychopathy: interpersonal, affective, impulsive lifestyle, and different antisocial externalization trends.

The objective of this study was to test the four-factor empirical model of the construct of psychopathy in a Chilean prison population by conducting CFA using the PCL-R<sup>4</sup> and the Self-Report of Psychopathy - III - Short Form (SRP-III-SF).<sup>13</sup>

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Submitted Aug 12 2014, accepted Oct 02 2014.

### *The construct of psychopathy, measurements, and its factors*

The construct of psychopathy is socially relevant because of its relation with transgression and crime.<sup>4,9,12,17,18</sup> The long history of scientific development on this construct has been enriched by multiple authors,<sup>1,2,19,20</sup> and there is still much to say.

Currently, the main assessment tool available for the evaluation of psychopathy is the Hare PCL-R.<sup>4</sup> The first version of the scale was developed in 1980. Since then, there have been multiple revisions of the instrument and more than a thousand published articles supporting its reliability and validity in numerous parts of the world.<sup>11,20-23</sup>

The PCL-R is a forensic instrument consisting of 20 items. To be scored, these items require data obtained through a semi-structured interview and additional collateral information obtained from institutional files and records, as well as from persons closely related to the subject. The PCL-R has proven, significant reliability and validity, and, at present, it is considered the gold standard for evaluation of psychopathy.<sup>10,24-28</sup>

In 1991, Hare published the two-factor scale. Factor 1 described emotional and interpersonal characteristics and factor 2 described behavioral externalizations.<sup>3</sup> In 2003, the second edition of the technical manual was published with modifications to factor 1 and factor 2. Factor 1 was divided in two facets representing the interpersonal style and the affective style; factor 2 was also divided in two facets that include the behavioral style and the antisocial style. Items 11 and 17 did not load in neither of the two factors, but did make an important contribution to the test in general.<sup>4</sup> Recent studies have shown that a four-factor structure has the best statistical fit for the PCL-R<sup>15,16</sup> and that it also exhibits good fit for derivatives of the PCL-R, such as the Psychopathy Checklist: Youth Version (PCL:YV).<sup>29</sup>

Other recent studies of the factor structure of the PCL-R using multidimensional scaling, a non-linear alternative to factor analysis, have demonstrated that the emergent structure of the PCL-R may be interpreted in more than one way and in different levels of specificity, and this will be consistent both with the two-factor and with the four-factor solutions.<sup>4</sup> The four-factor structure is further supported through the use of a confirmatory parcel model that involves aggregates of subsets of items (i.e., parcels) for each factor and, therefore, for the larger construct of psychopathy as well.<sup>21</sup> The four primary factors of the model as discussed by Hare in the revised PCL-R Manual are tested in this study and described below.

Factor 1 assesses the interpersonal style of the individual. It is formed by the following four items: 1) Glibness and superficial charm, which evaluates loquacity and superficiality in the communication style of the person; 2) Grandiose sense of worth, which evaluates the level of narcissism and egocentric behavior shown by the subject; 4) Pathological lying, which should be distinguished from instrumental lying; and 5) Conning/manipulative, which mainly assesses the need for control and manipulation of other people (to do this, the individual will not hesitate to use any manipulative strategy, both with unknown

persons and with family, friends, or acquaintances, in order to obtain benefits from his actions).

Factor 2 evaluates the emotional responses of the individual and the quality of his bonds with others. It consists of four items: 6) Lack of remorse or guilt; 7) Shallow affect, which assesses whether the subject can have strong relationships with other persons and inability to express a normal depth of emotions; 8) Callous/lack of empathy; and 16) Failure to accept responsibility for own actions (this item evaluates the attributional style of the subject, which, in psychopaths, is external).

Factor 3 includes historical information that allows the evaluator to assess life events since childhood. Additional information, such as school and medical reports and institutional files, is very important for scoring these items, as is collateral information rendered by the family. Factor 3 has five items: 3) Need for stimulation/proneness to boredom, which evaluates whether the individual can carry out normal activities and the need for strong emotions, including illegal drug consumption and high-risk behaviors that endanger his life and that of others; 9) Parasitic lifestyle; 13) Lack of realistic, long-term goals (is the person able to make a life project for the future in a normal, healthy way or is he grandiose?); 14) Impulsivity; and 15) Irresponsibility, which assesses whether the individual fulfills his commitments or fails to do so.

Factor 4 includes five items that evaluate antisocial externalizations: 10) Poor behavioral controls, which refers to an individual who reacts aggressively when he becomes frustrated or angry, has a bad temper, and lacks control over his behavior; 12) Early behavioral problems (psychopaths normally create many problems during childhood; this is a historical item that evaluates whether the problems created during childhood were more frequent and severe than those created by a normal child); 18) Juvenile delinquency; 19) Revocation of conditional release, evaluating violations to benefits obtained in the prison system that involve early release; and 20) Criminal versatility.

Two items are not included in the four factor structure of the PCL-R, but are included in the total PCL-R score (no-factor items): 11) Promiscuous sexual behavior; and 17) Many short-term marital relations. They refer to the affective life of the individual, but from a sexual standpoint.

The different derivatives of the PCL – PCL-R, PCL:SV, and PCL:YV – have been considered the “golden rule” for the assessment of psychopathy.<sup>30</sup> Nevertheless, relatively few research studies have used the PCL scales in the general community,<sup>31</sup> in part due to the difficulty involved in application of the instrument, including the interview and collection of the additional information required, the lack of community norms, and the training required for its use. Thus, in 1985, considering the potential advantages of self-report inventories, Robert Hare created the SRPS.<sup>32</sup> According to Williams & Paulhus, the theoretical nearness of the SRPS and the PCL-R is an advantage over all other self-reported inventories in psychopathy.<sup>31</sup>

Subsequently, Hare created a group of 60 items that gave birth to the SRP-II, followed by the SRP-III and,

**Table 1** Psychopathy Checklist - Revised (PCL-R) scores (n=209)

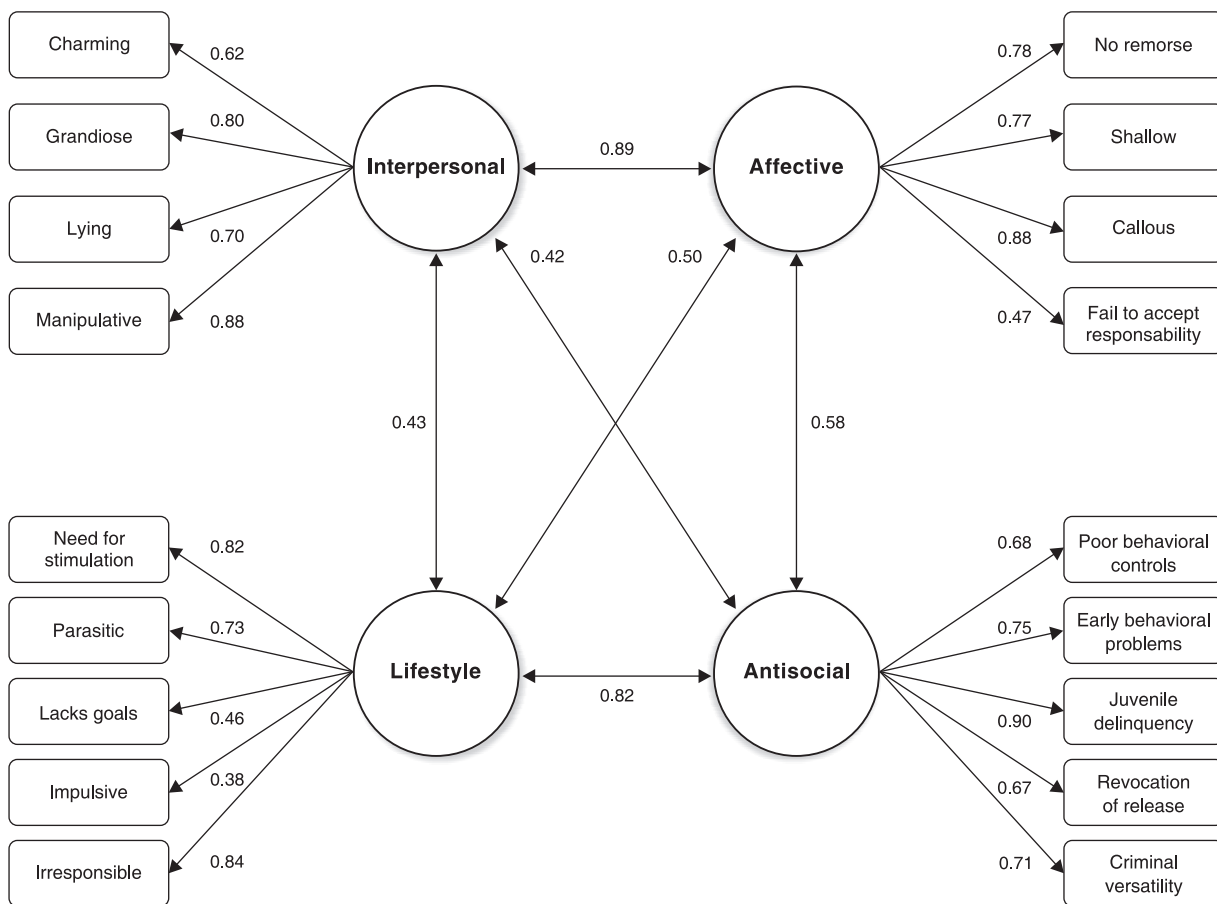
|          | Minimum | Maximum | Mean ± standard deviation |
|----------|---------|---------|---------------------------|
| Factor 1 | 0.00    | 8.00    | 3.63±2.14                 |
| Factor 2 | 0.00    | 8.00    | 4.74±1.79                 |
| Factor 3 | 1.00    | 10.00   | 6.34±1.99                 |
| Factor 4 | 0.00    | 10.00   | 4.91±2.70                 |
| Total    | 4.00    | 35.00   | 20.92±6.83                |

finally, the SRP-III-SF,<sup>13</sup> which is used in this study. Much of the validation research for these self-reported instruments has been carried out with clinical or forensic samples. In 1991, Hare<sup>18</sup> reported a correlation of 0.54 between the SRP-II and the PCL-R in a sample of 100 inmates; Williams & Paulhus<sup>31</sup> reported similar correlations with other self-report inventories (0.56). These same authors report that the SRP-II has proven its power to discriminate subclinical psychopaths, also called successful psychopaths by Cleckley,<sup>2</sup> as well as other personality disorders such as narcissistic personality disorder and/or machiavellism.<sup>31</sup>

The SRP-III-SF comprises 29 items that are distributed across four factors derived from the PCL-R. Factor 1 of the SRP-SF is compatible with the indicators of interpersonal functioning and it is formed by items 7, 9, 10, 15,

19, 23 and 26. Factor 2 evaluates Affective Style and is formed by items 3, 8, 13, 16, 18, 24 and 28. Factor 3 corresponds to Behavioral Style and includes items 1, 4, 11, 14, 17, 21 and 27. Factor 4 is consistent with the Antisocial Style and is formed by items 2, 5, 6, 12, 20, 22, 25 and 29. It is scored on a five-point scale from 1 (completely disagree) to 5 (completely agree). A previous study of the SRP-SF showed good convergence with the PCL-R, although individuals tend to present themselves in a more favorable way regarding those obtained with other instruments, which is not surprising for self-report questionnaires.<sup>31</sup>

This study is part of a more comprehensive project that had the approval of the Faculty of Medical Sciences of Universidad Nacional de La Plata and of the Penitentiary



**Figure 1** Psychopathy Checklist - Revised (PCL-R) four-factor model confirmatory factor analysis (n=206). Tucker index = 0.96; root mean square error of approximation = 0.04.

**Table 2** Self-Report Psychopathy - Short Form (SRP-SF) scores (n=208)

|          | Minimum | Maximum | Mean $\pm$ standard deviation |
|----------|---------|---------|-------------------------------|
| Factor 1 | 6       | 32      | 13.34 $\pm$ 4.65              |
| Factor 2 | 7       | 28      | 15.33 $\pm$ 4.20              |
| Factor 3 | 7       | 29      | 15.24 $\pm$ 5.90              |
| Factor 4 | 8       | 40      | 17.80 $\pm$ 5.32              |
| Total    | 30      | 125     | 61.62 $\pm$ 15.22             |

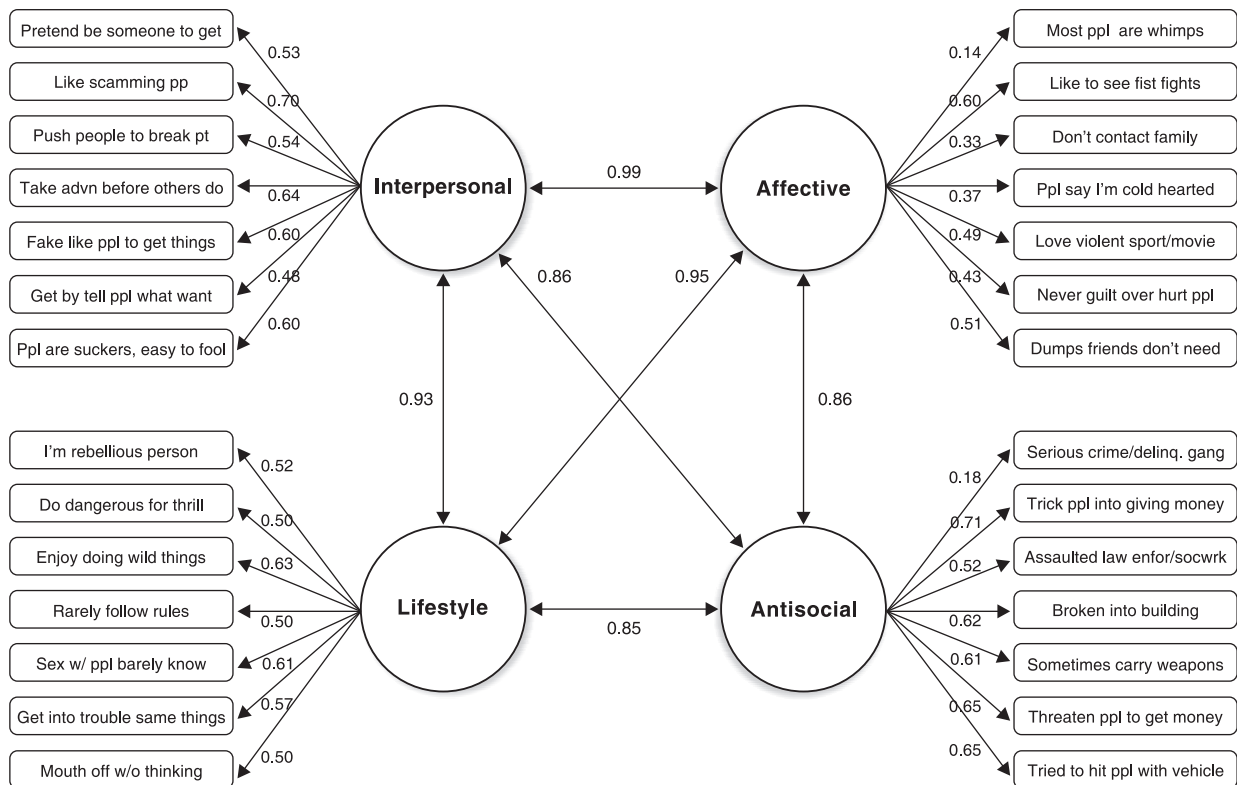
System of Chile (Gendarmería de Chile). All ethical considerations were carefully taken into account.

## Methods

The sample comprised 209 male offenders. The inclusion criteria were to be convicted and imprisoned at the Penitentiary Center of Los Andes in the Province of Los Andes, Chile, as of October 2009. From a total universe of 239 eligible subjects, 30 were excluded due to the following criteria: a) refusal to participate; b) not enough additional or collateral information to enable instrument scoring (such as psychological and social reports and files as well as interviews with relatives, family members, and prison staff). Once the information was confirmed as available, written voluntary consent for the interview itself, video recording of the interview, and review of the aforementioned files was obtained. Interviews were double-checked through review of the corresponding video

footage. For an extensive description of the population, see León-Mayer et al.<sup>12</sup>

All information was entered and analyzed in SPSS using the double-entry method.<sup>33</sup> All model analyses were conducted with Mplus,<sup>34</sup> using the robust weighted least-squares estimation procedure, given the ordinal nature of the scales described above. As recommended by Hu & Bentler,<sup>35</sup> a two-index strategy was used to assess model fit. For the index of relative model fit (i.e., how well the structured model fit relative to an unstructured model), we used the Tucker-Lewis index (TLI). To report absolute model fit (i.e., how well the structured model reproduces the observed data), we used the root mean square error of approximation (RMSEA). Generally, a relative index  $\geq 0.90$  and an absolute index  $\leq 0.08$  are considered acceptable indicators of model fit.<sup>36</sup> Although Hu & Bentler<sup>35</sup> suggested a comparative fit index (CFI) of 0.95 or higher as indicative of good model fit, subsequent modeling research suggests these fit indices may be too



**Figure 2** Self-Report Psychopathy - Short Form (SRP-SF) four-factor model confirmatory factor analysis (n=206). Tucker index = 0.94; root mean square error of approximation = 0.04.

strict and can be questioned in terms of both practical and substantive significance.<sup>37</sup>

The reliability of PCL-R was addressed by estimating the intraclass correlation coefficient (ICC) for two interviewers in a subsample of 54 inmates. ICCs were excellent (total PCL-R, 0.932; factor 1, 0.862; factor 2, 0.823; factor 3, 0.805; factor 4, 0.919).

## Results

The studied population has a mean age at interview of  $35.5 \pm 10.4$  years. Thirty-eight percent were single; 53.6% were married or in-laws; and 7.7% were separated or divorced.

The total distribution of the PCL-R values was normal (Kolmogorov-Smirnov [K-S] = 1.04;  $p = 0.230$ ). Table 1 shows the distribution by factor and by total score.

A CFA was carried out using the four-factor model (Figure 1). All items make an important contribution to the model. The items that have the lowest factor loadings are impulsivity and lack of realistic, long term goals. The items callous/lack of empathy, conning/manipulative, irresponsibility, and juvenile delinquency have outstanding factor loadings, revealing that these items are particularly good indicators for detecting highly psychopathic individuals. Strong latent correlations were also obtained among the factors, in particular between factor 1 and factor 2 and between factor 3 and factor 4.

The model fit was very good as measured with the TLI and RMSEA. The TLI was in the excellent range, whereas the RMSEA value was indicative of good model fit.

The distribution of the total SRP-SF scores was also normal (K-S = 0.812;  $p = 0.525$ ). Descriptive statistics for the total score as well as for the factors are shown in Table 2. The correlation between the total values of both instruments was 0.373 ( $p < 0.001$ ), a moderate value, as anticipated, due to the fact that the SRP-SF is a self-reported test.

CFA of the SRP-III-SF was carried out using the same four-factor model. Though factor loadings were lower than those of the PCL-R, global statistics also indicated good model fit (Figure 2).

## Discussion

This study tested the four-factor empirical model of the construct of psychopathy in a Chilean prison population by conducting CFA of the PCL-R<sup>4</sup> and SRP-III-SF instruments. The results support global model fit both for the PCL-R and for the SRP-III-SF.

Fit for the PCL-R model was excellent. These results are consistent with the formulation of the construct of psychopathy and with a wide variety of international studies with different samples.<sup>15,38</sup> The relation pattern between the factors and the individual items found in our analysis was similar to those found in the Canadian and U.S. samples, thus providing additional evidence to support the universality of the construct.<sup>14</sup>

As expected for a self-reported instrument, CFA of the model with the SRP-SF showed a pattern of slightly lower

item-to-factor loadings compared to the item loadings for the PCL-R. Nevertheless, the SRP-SF items also had significant factor loadings and acceptable model fit.

The finding of strong inter-correlations among the SRP-SF and PCL-R factors warrants some commentary. As discussed by Hare & Neumann,<sup>14</sup> the PCL-R conceptualization of psychopathy involves a superordinate construct underpinned by four first-order factors or dimensions: interpersonal, affective, lifestyle, and antisocial. More specifically, previous research has shown that the correlated first-order PCL-R factors can be accounted for by a second-order (superordinate) psychopathy factor.<sup>15</sup> Similarly, the strong inter-correlations among the SRPS factors are to be expected, given that each of the first-order factors can also be accounted for a superordinate (second-order) factor which represents the syndrome of psychopathy. These findings for the PCL-R and SRP-SF are in line with behavioral genetic studies, which also find that first-order psychopathic traits can be accounted for by a superordinate (common) genetic factor.<sup>14</sup> Taken together, the evidence indicates that both the covert (interpersonal, affective) and overt (antisocial, impulsive externalizing lifestyle) features are all expressions of the psychopathy construct.

Though the PCL-R and its derivatives are not exactly equivalent to the construct of psychopathy, the findings reported herein attest the robustness of the four-factor model and demonstrate that the measure is highly compatible both with the clinical tradition and with the modern empirical conceptualization of psychopathy. These psychopathic personality dimensions empirically based on the PCL-R reflect a personality disposition that is highly antisocial and undercontrolled, that includes the deceitful presentation of oneself, pathological lying, lack of remorse and guilt, and irresponsibility, as well as criminal versatility.

It should be noted that some studies sustain a three-factor hierarchical model.<sup>39</sup> Nevertheless, several authors have stated that this model has severe conceptual and statistical problems.<sup>30</sup> Thus, the present study only tested the four-factor model, in view of its wide acceptance, leaving the testing of other models as an avenue for future research.

The modeling approach used in this study gives important methodological consistency and contributes to obtaining evidence in favor of construct validity. Although using EFA provides a way of understanding the correlation pattern between large groups of variables, there is discrepancy among researchers regarding its use, as there are different criteria and the resulting EFA structure would only constitute one of the possible solutions derived from the data. Thus, it is probable that the same structure will be confirmed in another sample extracted from the same population. If there were different criteria among researchers, however, there might also be different answers with respect to the number of factors that should be retained. On the other hand, the use of CFA has comparative advantages when the hypothesis states that several factors have a certain meaning, because it proves fit to a model that has individualized a specific number of theoretical or empirical relevant factors.

It is important to mention that good statistical fit to a latent variable model does not prove the existence of contributory latent variables.<sup>14</sup> What is stated in the present study is that a good model fit constitutes evidence to support the tested hypothesis. Latent variables allow generalization of associations; in this study, as the latent variable model is sustained on the basis of a sample of individuals assessed in different ways, the likelihood of the model as a viable representation of a theoretical construct is strengthened.

Finally, we must address the usefulness of these findings beyond the forensic field. The construct of psychopathy is relevant for mental health in general, because its evaluation is of paramount importance when a decision must be made regarding commitment or discharge of a patient from a mental health institution due to a potential risk of violence. This risk should also be considered in cases of domestic violence, as well as mobbing or violence in the workplace. Psychopathy has been recognized since its first descriptions as being a personality condition that greatly affects interpersonal relations. The information present in this study will be useful not only in the forensic field but also in the clinical field because it provides clinicians with tools to make reliable evaluations in their respective fields.

## Disclosure

RDH is the author of Hare PCL-R and receives royalties from the publication. The other authors report no conflicts of interest.

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