Assessing the validity of self-report of psychopathy short-form (SRP-SF) in incarcerated offenders from Chile and Uruguay

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A B S T R A C T

Psychopathy remains a relatively unexplored concept in Latin America. The abbreviated Self-Report Psychopathy Scale (SRP-SF) seems promising in this under-resourced context. However, the SRP-SF should be tested for measurement invariance to achieve meaningful comparison across countries in Latin America. Therefore the aims of this study were to examine the underlying factor structure of the SRP-SF in incarcerated adult male offenders from Uruguay ($n = 331$) and Chile ($n = 208$), to examine the measurement invariance of the SRP-SF across countries, and to assess the utility of SRP-SF to classify first time offenders from offenders with criminal history. Findings showed a good fit for the four-factor model in Uruguay, and both Chile and Uruguay showed invariance. Conversely, the Interpersonal and Affective factors were not associated with criminal history in the Uruguayan sample. Therefore, more studies are needed before using the SRP-SF as screening tool to classify first-time offenders and reoffenders in different countries in Latin America.

1. Introduction

The relevance of psychopathy in crime is widely recognized. Psychopathic offenders are responsible for a large number of violent crimes (Hare, 2003; Porter & Woodworth, 2006) and psychopathy is associated with not only violent crimes, but also non-violent crimes, recidivism, corporate misbehavior and ethical misconduct in leaders (see Miller & Lynam, 2015). Some authors argue that psychopathy is superior to alternative social, psychological and criminological explanations because it constitutes a unified crime theory that captures the essence of antisocial behavior (DeLisi, 2009; see also Fox, Jennings, & Farrington, 2015; Hare & Neumann, 2008). Surprisingly, psychopathy remains relatively unexplored in one of the most violent regions of the world, Latin America (UNODC, 2019).

Several instruments measure levels of psychopathy, but the most widely used is the Psychopathy Checklist – Revised (PCL-R; Hare, 2003), including versions for screening (PCL: SV; Hart, Cox, & Hare, 1995), youth (PCL: YV; Forth, Kosson, & Hare, 2003), self-report (SRP-III;

Paulhus, Neumann, & Hare, 2015) as well as an abbreviated version (SRP-SF; Paulhus et al., 2015). Although these self-report versions (SRP-III and SRP-SF) were developed to be administered in the general population (Gordts, Uzieblo, Neumann, Van den Bussche, & Rossi, 2017), they might be useful as screening tool in prison settings, especially in Latin America, because they are brief, easy to administer, and do not require extensive training. The SRP-SF showed a good fit with the 4-factor structure validity in different countries from North, Central and South America, Europe, Asia and Africa (Neumann, Schmitt, Carter, Embley, & Hare, 2012; see also Neumann, Hare, & Pardini, 2015). However, the empirical evidence is mostly concentrated in regions (e.g., North America and Europe) where violence rates are relatively low compared to other regions such as Latin America (UNODC, 2019). The SRP-SF has been tested in one Latin American country, Chile, among general and offending populations (León-Mayer, Folino, Neumann, & Hare, 2015). Therefore it is still unknown whether SRP-SF is valid in other Latin American countries such as Uruguay; and whether the SRP-SF is cross-culturally invariant across Latin American countries (i.e.,

Chile and Uruguay). If this is the case, prison systems across Latin American countries might benefit from this easy, valid and reliable measure to improve classification and management of offenders for cognitive behavioral programs in the region.

1.1. Psychopathy

Psychopathy is characterized by interpersonal, affective, behavioral, and antisocial problems. It is estimated that 1% of the general population (Coid, Yang, Ullrich, Roberts, & Hare, 2009; Hare, 1991) and between 10 and 15% of the offender population (Hare, 2003) meet the criteria for psychopathy. In Latin America, the prevalence is generally unknown. Results from a single study in Chile found that the prevalence of psychopathy was 13% among a sample of male offenders in custody (León-Mayer, Cortés, & Folino, 2014) and 12% among female offenders in custody (Rocuant-Salinas, León-Mayer, Folino, & Hare, 2019) using the PCL-R.

Despite of the current debate on the construct of psychopathy (see Miller & Lynam, 2015; Skeem & Cooke, 2010), an important advance is the utility of structural models of personality for understanding psychopathy (Miller & Lynam, 2015). The construct of psychopathy was originally defined by Hare (1991, 2003) as a 4-factor model whose factors (also known as facets) are: F1) *Interpersonal,* which includes charming, grandiose, lying and manipulative traits; F2) *Affective,* which includes lack of remorse, shallow affect, callous, failure to accept responsibility traits; F3) *Lifestyle,* which includes need for stimulation, parasitic lifestyle, lack of realistic goals, impulsivity, irresponsibility traits; and finally F4) *Antisocial,* which includes poor behavioral controls, early behavior problems, juvenile delinquency, revocation of conditional release, criminal versatility traits (Hare, 1991, 2003). A reduced version of the model is the 2-higher order factor model (2-factor model), which emerged because F1 correlates with F2 (*Interpersonal/ Affective*), and F3 correlates with F4 (*Lifestyle/Antisocial*) (Hare, 1991, 2003).

A large number of studies have confirmed the 4-factor model in different countries with different populations, using different PCL versions, including the self-report derivatives (Neumann et al., 2015). Regarding the SRP-SF, a limited number of studies have shown good convergence with the PCL-R (Paulhus et al., 2015), as well as adequate psychometric properties including good construct validity, structural and external validity (i.e., convergent and divergent validity), internal consistency, and reliability among non-offender and offender samples from Belgium, Chile, North America, and Portugal (e.g., Declercq, Carter, & Neumann, 2015; Gordts et al., 2017; León-Mayer et al., 2015; Neumann et al., 2015; Seara-Cardoso, Queirós, Fernandes, Coutinho, & Neumann, 2020). Furthermore, a recent review showed that the 4-factor model of the SRP-SF is a good factorial solution in five studies, but these studies used different number of items, undermining the generalizability of results and the reliability of the measure (Boduszek & Debowska, 2016). However, a growing body of evidence suggests that antisocial and criminal tendencies should not be regarded as central to the conceptualization of the construct of psychopathy (Boduszek & Debowska, 2016), but a consequence of psychopathy (Skeem & Cooke, 2010).

1.2. Psychopathy and recidivism among adults

Although PCR and its derivates were originally developed as a diagnostic tool to measure the construct of psychopathy, there is a large body of studies showing its association with criminal trajectories and recidivism (Frick & White, 2008; Gendreau, Goggin, & Smith, 2002; Hemphill, Hare, & Wong, 1998; Kahn, Byrd, & Pardini, 2013; Walters, 2003). Thus the PCL-R is frequently administered as a risk assessment tool to inform criminal justice practitioners about the risk of non-violent and violent recidivism. Several meta-analyses have examined the predictive validity of the PCL-R, which showed that the predictive validity

was similar or lower than other risk assessment tools (Singh, Grann, & Fazel, 2011; Yang, Wong, & Coid, 2010). Evidence suggests that the prediction of crime and violence is affected by Factor 2, whereas Factor 1, which assesses the core psychopathic personality features, yielded no prediction of crime and violence (Olver & Wong, 2015; Salekin, Rogers, & Sewell, 1996; Walters, 2003; Yang et al., 2010).

Additionally, the PCL-R has broadly shown cross-cultural generalizability (Hare, Clark, Grann, & Thornton, 2000). However, the utility of this measure has been called into question because of the inadequate reliability and validity in prison and hospital settings (Jeandarme et al., 2017). As such, an alternative to a rater-based measure is the self-reported measure of psychopathy derived from the PCL-R.

While the research on predictive validity is extensive for the PCL-R among adults, research on the self-report derivatives is very limited. Vitacco, Neumann, and Pardini (2014) reported that the SRP-III was a promising tool in the prediction of violent offenses, however as of yet no study has retrospectively examined the utility of the SPR-SF predicting criminal behavior among male adult offenders from two different countries.

1.3. Psychopathy in Latin America

While there is robust evidence showing that psychopathy is a significant predictor of criminality, violence and persistent offending (Blais, Solodukhin, & Forth, 2014; Douglas, Vincent, & Edens, 2006; McCuish, Corrado, Hart, & DeLisi, 2015; Vaughn, Howard, & DeLisi, 2008), research in Latin America mainly focuses on predictors such as narcotraffic, poverty, inequality, and police violence (for review see Imbusch, Misse, & Carrión, 2011). Thus the PCL-R and its derivatives have hardly been applied in Latin America (Flores-Mendoza, Silva, Herrero, & Abad, 2008; León-Mayer, 2012; for a review, see Folino, 2015). To the best of our knowledge, only two studies using adult male and female offenders in custody have been conducted in Chile (León-Mayer et al., 2015; León-Mayer, Rocuant-Salinas, Eisenbarth, Folino, & Neumann, 2019, respectively). Both studies reported a good fit for the 4-factor model (León-Mayer et al., 2015; León-Mayer et al., 2019). Additionally, the study on female offenders found that the modified version of the SRP-SF predicted chronic misconduct (i.e., juvenile delinquency, juvenile disorders, recidivism, violent behavior in prison) to a greater extent than the standard SRP-SF version (for male offenders) (León-Mayer et al., 2019).

This self-report instrument is needed in the Latin American region for two main reasons: first, to better understand the role of individual factors such as psychopathy in explaining violent behaviors. Second, the prison systems in this region show many constraints, including limited human and financial resources, and under-trained staff in overcrowded prisons. The administration of a validated self-report instrument to measure psychopathy would save time and resources in correctional institutions because it requires few professional qualifications to administer, it is less time-consuming, and several offenders can be assessed at the same time (León-Mayer et al., 2019). A study in the UK using incarcerated offenders showed that the SRP-SF can be used in some situations due to its brevity (Tew, Harkins, & Dixon, 2015).

1.4. Measurement invariance in psychopathy

Examining the equivalence of measures has recently become an important issue in cross-cultural research because studies may yield unreliable results due to measurement bias (Lai, Richardson, & Mak, 2019; Milfont & Fischer, 2010). Psychopathy has been assessed across the world (Neumann et al., 2015), but few studies have examined whether individuals from different countries ascribe the same meanings to the scale items. Measurement invariance of psychopathy has mostly been assessed across ethnic groups, cultures, gender and sample type. Studies assessing the invariance of the PCL-R showed no ethnic differences (i.e., African Americans and Whites populations) (for meta-

analysis, see Skeem, Edens, Camp, & Colwell, 2004). One of the few studies comparing the invariance of the PCL-R in offenders from two countries (i.e., Germany and U.S.) showed factorial invariance of the interpersonal, affective and lifestyle factors, but not for antisocial, nor for the four-factor model of PCL-R (Mokros et al., 2011). A study using network analysis and comparison of Spearman rho correlations between two large U.S. offender samples and one large forensic psychiatric Dutch sample found that callousness/lack of empathy was the main PCL-R item in the two U.S. samples, whereas irresponsibility and parasitic lifestyle were more central in the Dutch sample. These findings raised the issue of cross-cultural differences across countries (Verschuere et al., 2018). Finally, a study using the International Sexuality Description Project-2 (ISDP-2) assessed the invariance of the SRP scale, which found invariance across males and females, and across females from sixcountries in different world regions (Neumann et al., 2012).

With regard to the SRP-SF, measurement invariance has only been examined across gender and type of sample (offenders vs non-offenders). Findings yielded weak invariance (i.e., lack of scalar invariance) across males and females (Dotterer et al., 2017), and factorial invariance was not supported between incarcerated offenders and university students, probably due to the antisocial factor (Debowska et al., 2018). However, a cross-cultural study testing the measurement invariance of the SRP-SF among offenders has not been done yet. Thus it is necessary to test the 4-factor model of psychopathy across other Latin American countries (e.g., Uruguay), while ensuring that the measures used to assess it are valid, reliable, and transportable.

1.5. Aims and hypotheses

The main aims of the current study are: first, to examine the psychometric properties of the four-factor model using the SRP-SF in a new Latin American country, that is, Uruguay, and compare it with Chile (León-Mayer et al., 2015). Apart from the fact that the SRP-SF has not been tested in other Latin-American countries, Chile and Uruguay are heterogeneous in terms of poverty, unemployment, human development and violence levels compared to other countries in the region (ECLAC, 2022; UNDP, 2022; UNODC, 2019). Second, we aim to evaluate the degree to which the four-factor model of SRP-SF has similar underlying measurement structure in both countries. Finally, we aim to analyze the association between SRP-SF scores and criminal history within both samples of offenders from Uruguay and Chile.

Based on previous findings, we expect to find an acceptable model fit for the four-factor structure of the SRP-SF in Uruguay and for the joint sample analysis. We also expect to observe invariance in the four-factor model across both samples when factor loadings and item thresholds are constrained (Scalar Invariance). Finally, we expect that SRP-SF score will be associated significantly with criminal history and will show acceptable levels of accuracy for the classification of recidivists and first time offenders in both countries.

2. Method

2.1. Participants and procedure

The data used in this paper come from two independent studies conducted in Chile and Uruguay among male offenders in custody. The Chilean sample was composed of 209 male adult offenders imprisoned at the detention centre 'Centro de Cumplimiento Penal' in the Province of Los Andes. The sample was selected in October 2009 from a total pool of 239 eligible respondents. Subjects were excluded if they had cognitive impairments, they did not want to participate or because there was not enough additional or collateral information. This sample was part of a more comprehensive study of the Faculty of Medical Sciences of Universidad Nacional de La Plata and of the Penitentiary System of Chile (for a detailed description, see León-Mayer et al., 2015). The Uruguayan sample involved 331 male adult offenders from five detention centres of

the Uruguayan Prison Service across the country. The sample was selected between August and October of 2017 from a pool of 382 eligible inmates. Subjects were excluded if they declined to participate, they did not speak and read Spanish, and if they were illiterate. This sample was part of a larger study focused on risk factors associated with criminal offending history and prison conflict within Uruguayan penitentiary institutions (for more details, see Trajtenberg & Sanchez de Ribera, 2018).

Participants from the Chilean sample ranged in age from 18 to 67 years (M = 35.5; SD = 10.4), and 53.6% reported being married or in a relationship. <3% of the prison inmates had university or tertiary degrees. With regard to their offense index, 55.5% committed offenses against property, 25.4% committed offenses against persons, and 19.1% committed drug related offenses. The mean age of Uruguayan participants was 31.27 (SD = 9.06) ranging from 19 to 65 years of age. Sixty-four percent of the respondents were not in a relationship or married, and <5% had completed tertiary studies. With regard to their offense index, 64.2% of Uruguayan inmates were serving their sentence for offenses against persons, 27.2% for offenses against property, and 8.6% for drug related offenses. Regarding criminal history, 63% of the Chilean sample were recidivists, whereas less than half (48%) of the Uruguayan sample were recidivists (Table 1).

This study has been conducted according to the Declaration of Helsinki for experiments involving humans. The research protocols were approved by the ethical committees of La Plata National University, and by the Uruguayan Prison Service, respectively. All respondents were informed about confidentiality, anonymity, and provided written informed consent. Participants from Chile and Uruguay did not receive any reward for their participation. The assessment was conducted in the visiting room and a separate room inside the prison in in Uruguay and Chile, respectively. In Chile, a participant was illiterate, so the questionnaire was read to him by the researcher.

2.2. Measures

2.2.1. Psychopathy

The SRP – SF (Paulhus et al., 2015; Paulhus, Neumann, & Hare, 2009) is a 29-item self-reported inventory designed to measure psychopathy subdivided into 4 facets of psychopathy: *Interpersonal Manipulation* (IM), *Callous Affect* (CA), *Erratic Lifestyle* (EL), and *Criminal Tendencies* (CT). Responses were measured using a five-point Likert scale (1 = *disagree strongly* to 5 = *agree strongly*). Scores range from 1 to 5, with higher scores indicating increased levels of psychopathy. In this study

Table 1
Descriptive Characteristics of Chilean and Uruguayan Male Offenders.

Variables	Chile (n = 208)	Uruguay (n = 331)
Mean Age *(SD)*	35.5 (10.4)	31 (9.11)
Education [1]	*n (%)*	*n (%)*
Primary school	82 (38.3%)	99 (33%)
Secondary school	121 (57.9%)	188 (62.6%)
University & tertiary studies	5 (2.4%)	13 (4.3%)
Civil status	*n (%)*	*n (%)*
Married or in relationship	111 (53.6%)	97 (36.1%)
Divorced, separated or widow	16 (7.7%)	55 (20.5%)
Single	81 (38.8%)	117 (43.5%)
Index of offense	*n (%)*	*n (%)*
Offenses against property	116 (55.5%)	89 (27.2%)
Offenses against persons	53 (25.4%)	210 (64.2%)
Drug related offenses & Others	40 (19.1%)	28 (8.6%)
Recidivist (Yes)	132 (63.2%)	146 (48.8%)

Note. Offenses against property includes property crimes (e.g. theft, robbery), fraud (e.g. falsification of public and private documents, falsification of vehicle identification). Offenses against persons includes violent crimes (e.g. homicide, sexual assault). Drug related offenses (e.g. drug trafficking, drug use) and Others referred to kidnapping and arms carriage.

[1] The Chilean sample had one illiterate individual.

the Spanish version of the SRP – SF-III was administered in both samples. The scale was translated using the back translation method (translated to Spanish and then back to English) for the Chilean study by the fourth author, who is a qualified translator. This Spanish scale was used for the Uruguayan study but a few words were changed to Uruguayan Spanish.

2.2.2. Demographic characteristics and criminality

Basic demographic data (i.e., age, level of education, civil status) were collected from inmates in both samples using a questionnaire. Moreover, inmates from both samples were asked about their offense history. *2.2.3. Criminal history.*

Criminal history was assessed retrospectively using the computerized case file system from Chilean and Uruguayan Prison Systems. Offenders without a previous criminal conviction were classified as first-time offenders, whereas offenders convicted for two or more crimes during their adulthood were classified as recidivists.

2.3. Statistical analyses

As a first step, we conducted descriptive statistics, Cronbach's α coefficients for internal consistency, and *t*-tests for the psychopathy scores and the four factors comparing samples from Chile and Uruguay. The second step involved conducting a Confirmatory Factor Analysis (CFA) to evaluate the model fit for the Uruguayan sample. These results from Uruguay were then compared with the previously results reported from Chile (León-Mayer et al., 2015). As a third step, we conducted Multi-Group Confirmatory Factor Analysis (MG-CFA) to assess the measurement invariance between the Uruguayan and Chilean samples (van de Schoot, Lugtig, & Hox, 2012; Vandenberg & Lance, 2000).

With regard to the invariance analyses, the weakest level of invariance evaluated whether the same pattern of factor loadings hold across Uruguayan and Chilean inmates (*configural invariance*). A second more severe level of invariance involved constraining item/factor loading to be equivalent between both samples (*metric or weak invariance*). The third level implies evaluating whether both item loadings and item intercepts were equal in both Uruguayan and Chilean samples (*scalar or strong invariance*). A final, even more severe level assessed whether factor loadings, intercepts and residuals were equivalent between both samples (*strict invariance*). As previously suggested, assessment of measurement invariance was conducted through nested models wherein the more strict levels of invariance are built on the less strict levels (Putnick & Bornstein, 2016If at least the scalar invariance assumption is obtained, observed mean differences in psychopathy scores between Uruguayan and Chilean groups can be interpreted as illuminating differences on the latent factors across countries (Brown, Harris, O'Quin, & Lane, 2017).

The assessment of model fit and change in fit between nested models were conducted using an absolute index (Root Mean Square Error of Approximation, RMSEA) and incremental indexes (Comparative Fit Index, CFI; Tucker Lewis Index, TLI; Goodness of Fit, GFI; Standardized Root Mean Square Residual, SRMR). Given the ordered and not normally distributed nature of items used in this study, we used the maximum likelihood (ML) estimation with polychoric correlations, and the diagonally weighted least squares (DWLS) estimation (Flora & Curran, 2004; Li, 2016). Given that not all fit indices are stable across different model specifications, we reported multiple fit indices and considered the following cut off for model fit for CFI (0.95), RMSEA (0.07), TLI (0.95), GFI (0.95), SRMR (0.08) (Hu & Bentler, 1999; Kline, 2015). With regard to the change in fit between models, we mostly focused on one absolute test (RMSEA) and two relative fit indexes (RMSEA, CFI). Invariance model can be accepted if differences between less and more restrictive models in CFI are smaller than 0.01 and smaller than 0.015 for RMSEA (Chen, 2007; Cheung & Rensvold, 2002). However, some MG-CFA simulation studies suggest the use of less severe threshold for metric invariance (0.02 for CFI and 0.03 for RMSEA) (Rutkowski & Svetina, 2014), so we will base our assessment decisions in the latter.

Finally, we assessed the association between psychopathy and criminal history for both samples together and for each sample separately using *t*-test - and AUC (Area under The Curve) ROC (Receiving Operator Characteristic) curve. When AUC is near to 1, the instrument has excellent discrimination validity, but when AUC is 0.5 means that the instrument has no capacity to distinguish between reoffenders and first-time offenders. Analyses were performed in R version 4.1.0 (R Core Team, 2021) using the *lavaan* package (Rosseel, 2012).

3. Results

3.1. Reliability and CFI

As Table 2 shows, the reliability for the global score was acceptable both in the Uruguayan sample ($\alpha = 0.89$) and the Chilean sample ($\alpha = 0.85$), in line with previously reported community samples (Declercq et al., 2015; Gordts et al., 2017). However, the Affective factor showed an unacceptable score in both countries (Uruguay: $\alpha = 0.53$ and Chile: $\alpha = 0.47$).

The four-factor model of psychopathy in the total sample and by country is summarized in Table 3. The overall level of fit of the four-factor model for the Uruguayan sample was acceptable on absolute level (RMSEA = 0.069) and on incremental level (CFI = 0.970, GFI = 0.965) confirming our first expectation. However, the model fit for the Chilean sample was slightly better both in terms of the absolute level (RMSEA = 0.038) and incremental indexes (CFI = 0.982, GFI = 0.965) as previously reported in León-Mayer et al. (2015). The model fit of the joint group analysis also showed adequate levels of fit in both types of indexes.

Fig. 1 displays the model parameters for the samples from both countries without the specification of measurement invariance. The model for Uruguay showed that the item-to-factor loadings of the four factors also corroborate our first hypothesis. The *Interpersonal* and *Lifestyle* factors include loadings that were significant and oscillate between 0.53 and 0.78, and the *Affective* and *Antisocial* factors showed a significant and high item-to-factor loading, except for three items that load below 0.3: '*I am not interested to be in touch with my family*' (SRP13), '*I never committed crimes with someone else*' (SRP2) and '*I am/was convicted for a crime with a sentence of more than 5 years*' (SRP20). The Chilean model (León-Mayer et al., 2015) showed similar item-to-factor loadings with only five items that load below 0.4 which include the three aforementioned items and '*I am rebel*' (SRP1), and '*Most people are shy/fearful*' (SRP3).

3.2. Measurement invariance

Table 4 displays the results of MG-CFA testing the four-factorial solution including the baseline, configural, metric and scalar invariance models across Uruguay and Chile. Results confirm our second expectation of measurement invariance across both countries. The fit indices suggested that the configural model showed a good fit of the data with a difference in CFI and RMSEA of <0.01 in relation to the baseline model. Constraining factor loadings did not lead to a significant deterioration of the model fit providing support for metric invariance. The difference between the metric model and the configural model is <0.015 in RMSEA, and is slightly higher than 0.01 in CFI, but still lower than the less conservative cut off 0.02. Finally, the fit of the model was acceptable when we constrained the loadings and intercepts (scalar model) with no differences in CFI and a very small difference in RMSEA of 0.003. Therefore, results showed that the sample of Uruguay and Chile were invariant at the level of latent variables for the four-factor model of psychopathy.

3.3. Differences between first time offenders and recidivists

One final step was using *t*-test and AUC – ROC to evaluate the

Table 2

SRP – SF III Scores from the Uruguayan and Chilean Male Offenders: Scale Descriptive Statistics, Cronbach's α, Independent-Samples t-Test, Effect Size.

	Mean (SD)	Mean (SD)	Mean inter item correlation	α	t (df)	Cohen's d
SRP – SF III	Uruguay n = 331	Chile n = 209	Uruguay / Chile	Uruguay / Chile		
Interpersonal	13.71 (5.84)	13.26 (4.58)	0.35 / 0.23	0.79 /0.68	0.937(538)	0.08
Affective	16.51 (5.05)	15.28 (4.29)	0.14 / 0.10	0.53 / 0.47	2.915(538)	0.26**
Lifestyle	19.38 (7.25)	15.13 (5.17)	0.31 / 0.22	0.76 / 0.67	7.377(538)	0.65***
Antisocial	18.59 (6.74)	17.64 (5.26)	0.21 / 0.15	0.68 / 0.58	1.723(538)	0.15[(.)]
Total	65.83 (20.28)	61.27 (15.26)	0.23 / 0.16	0.89 / 0.85	2.787 (538)	0.25**

Note. [(.)]$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 3

Four – Factor Confirmatory Factor Analysis: Uruguay, Chile and Combined Data Set without Specification of Measurement Invariance.

	χ^2	df	χ^2 / df	CFI	RMSEA	SRMR	GFI	TLI
Uruguay sample	862.661***	371	2.33	0.970	0.069	0.084	0.965	0.967
Chile sample	482.307***	371	1.30	0.982	0.038	0.078	0.965	0.981
Total sample	881.796***	371	2.38	0.976	0.053	0.067	0.976	0.973

Note. [(.)]$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

df = degrees of freedom; CFI = Comparative Fix Index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; GFI = goodness of fit; TLI = Tucker Lewis Index.

association between self-reported psychopathy and retrospective offending behavior in the two samples. Table 5 shows that there are statistically significant differences in the total psychopathy score between first time offenders and those that have criminal history in both countries. However, the effect size of the total psychopathy score of the sample in Chile ($d = -1.296$) was considerable higher compared to the sample in Uruguay ($d = -0.537$). Moreover, effect sizes were higher in the Chilean sample for the four factors, whereas in the Uruguayan sample two factors (Interpersonal and Affective) did not show statistically significant differences between recidivists and non-recidivists. Finally, the SRP-SF in the Chilean sample had very good levels of accuracy classifying inmates as recidivists or first-time offenders with an AUC of 0.82 (95% CI [0.76, 0.89]), whereas the Uruguayan sample, instead, showed a less than acceptable AUC of 0.65. (95% CI [0.58, 0.71]) (for detail, see Appendix A, Table A1).

Taking into consideration the criticism regarding the inadequacy of including the antisocial facet in the measurement of psychopathy, we reanalyzed the association between past offending behavior and the psychopathy score excluding antisocial items. The new psychopathy score showed that, while the Chilean sample still had similar very good levels accuracy classification (0.82), the Uruguayan sample showed still less than acceptable and even lower levels of accuracy classification (0.61) (see Appendix B, Table B2). An alternative classification analysis using violent versus non-violent offenders and single versus living-in-a-relationship comparison groups revealed worse accuracy levels: The Chilean sample showed an AUC of 0.72 (95% CI [0.64, 0.79]) for violent offenses and an AUC of 0.54 (95% CI [0.46, 0.62]) for civil status. Likewise, the Uruguayan sample showed an AUC of 0.56 (95% CI [0.51, 0.61]) for violent offenses and an AUC of 0.53 (95% CI [0.47, 0.59]) for civil status. Therefore, these findings partially support the third expectation. Although SRP-SF was significantly associated with history of offending in both samples, it only showed adequate levels of accuracy when classifying first time offenders and recidivists in the Chilean sample of inmates, even after excluding the antisocial facet items.

4. Discussion

In the current study, we aimed to examine three issues related to psychopathy in Latin America. First, we examined the psychometric properties, and second, the measurement invariance of the SRP-SF in a sample of Uruguayan and Chilean incarcerated male adult offenders. Third, we retrospectively examined the relationship between a self-reported measure of psychopathy and criminal history across these

two samples. As expected, the four-factor model of the SRP-SF fit the data for the Uruguayan sample as well as for the Chilean sample. In addition, the factor structure of the SRP-SF was equivalent in both countries, providing empirical support for the second expectation. Finally, our third hypothesis was partially corroborated since on the one hand, the total score of SRP-SF differed between recidivists and first-time offenders in both countries, although the accuracy was higher in Chile than in Uruguay. On the other hand, the Interpersonal and Affective factors were not associated with criminal history in Uruguay.

The 4-factor model fit the data well with most of the 29 items of the SRP-SF in both countries. In line with findings from Belgian and Portuguese community samples (Declercq et al., 2015; Gordts et al., 2017; Seara-Cardoso et al., 2020) and offender samples (León-Mayer et al., 2019; León-Mayer et al., 2015; Neumann et al., 2015), our results provide further support for the latent 4-factor structure of the incarcerated male adults in Uruguay. As previously mentioned, the main limitation is that previous studies used a different number of items precluding direct comparisons with our study (Boduszek & Debowska, 2016). Bearing in mind this limitation, our findings were in line with the three studies that included the 29-item scale (Declercq et al., 2015; León-Mayer et al., 2015, 2019), which supported the 4-factor model.

Our findings suggest that the SRP-SF provides evidence for scalar measurement invariance in both countries, that is, that cross-cultural comparisons on latent level of psychopathy (assessed using a self-report measure) can be made. This is an interesting result since previous studies have reported absence of invariance for the Antisocial factor (Bolt, Hare, & Neumann, 2007; Mokros et al., 2011), suggesting that cultural or environmental variables between countries may have an impact on the expression of the items within the Antisocial factor (Mokros et al., 2011). However, these studies are not comparable between each other, nor with the present study because Mokros et al. (2011) used the PCL-R in North American and German samples, while Bolt et al. (2007) used the item response theory approach in the United Kingdom and North American samples. Therefore, further studies should explore this issue using the PCL-R and the SRP-SF in different Latin American countries to corroborate our preliminary findings.

Finally, our results showed that the utility of the SRP-SF in classifying recidivists and first-time offenders is more adequate for the Chilean sample, but has limitations for the Uruguayan sample. In other words, the current results do not provide support for the use of the SRP-SF to assess psychopathy as screening tool among Uruguayan offenders. These differences may be due to the characteristics of the samples. For instance, Chilean offenders committed more offenses against property
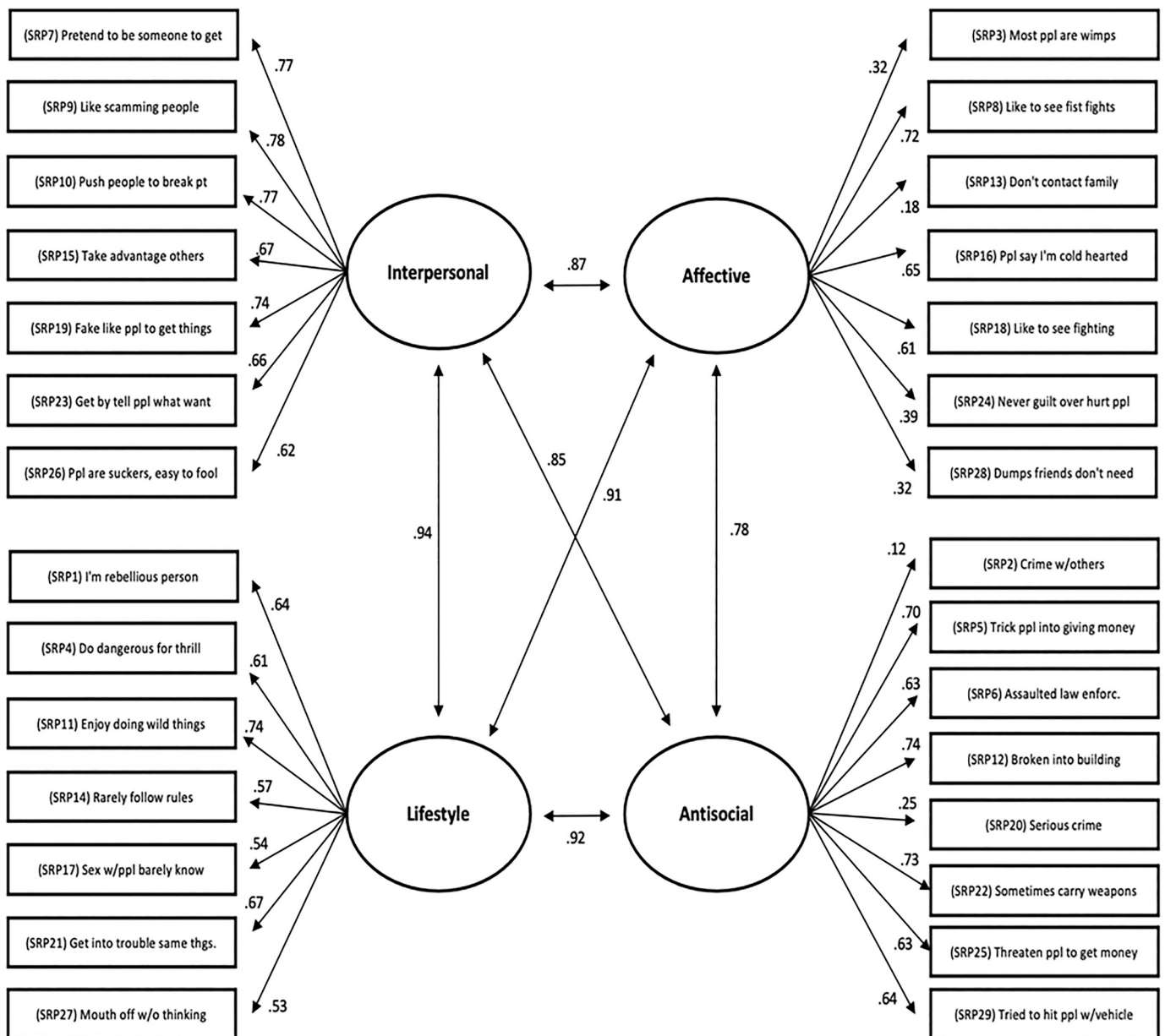
Fig. 1. *Standardized Parameters for the Four-Factor Psychopathy SRP – SF III Model (Uruguayan Sample).*
Note: The four-factor model for the Chilean sample is available at León-Mayer et al. (2015).

Table 4
Measurement Invariance Test for SRP-SF comparing Uruguay and Chile.

	χ^2 (df)	χ^2 / df	RMSEA	CFI	SRMR	GFI	TLI	Δ CFI	Δ RMSEA
Baseline	881.80 (371)***	2.38	0.053	0.976	0.067	0.976	0.973	–	–
Configural model	1344.97 (742)***	1.81	0.058	0.973	0.082	0.965	0.971	0.001	0.05
Metric model	1637.78 (767)***	2.14	0.068	0.961	0.091	0.957	0.959	0.012	0.01
Scalar Model	1721.13 (850)***	2.02	0.065	0.961	0.085	0.954	0.963	0	0.003

Note. $^{(\cdot)}p < .10.$ $*p < .05.$ $**p < .01.$ $***p < .001.$
CFI = Comparative Fix Index; RMSEA = root mean square error of approximation; SRMR = standardized root.
mean square residual; GFI = goodness of fit; TLI = Tucker Lewis Index.

and reoffended more than the Uruguayan sample. If the sample characteristics were significant, it would be difficult to interpret any of the cross-country differences. However, a previous study using the same Uruguayan sample showed that the Self-Appraisal Questionnaire (SAQ, Loza, 2005), a self-report risk assessment tool, classified first-time offenders and recidivist offenders adequately, and all facets of the SRP-SF were significantly associated with SAQ subscales (Trajtenberg, Sánchez de Ribera, Andreu Rodríguez, León-Mayer & Loza, 2021). Additionally, a previous version of the scale (SRP-III) was found to be predictive of violent and serious behaviors (Vitacco et al., 2014).

Table 5

Comparison of SRP – SF Total and Factor Scores across first time offenders and Offenders with criminal history in Uruguay and Chile.

	Uruguay				Chile			
	First time offenders (n = 153)	Recidivists (n = 146)			First time offenders (n = 77)	Recidivists (n = 132)		
SRP – SF	Mean (SD)	Mean (SD)	t	Cohen's d	Mean (SD)	Mean (SD)	t	Cohen's d
Interpersonal	13.01 (0.44)	14.71 (0.52)	−2.50*	−0.29	10.45 (3.57)	14.90 (4.32)	−7.64***	−1.09
Affective	15.98 (0.38)	17.34 (0.43)	−2.36*	−0.27	12.94 (3.77)	16.65 (3.97)	−6.64***	−0.95
Lifestyle	17.71 (0.57)	21.33 (0.59)	−4.41***	−0.51	11.91 (4.31)	17.01 (4.70)	−7.79***	−1.11
Antisocial	16.47(0.47)	21.18 (0.56)	−6.43***	−0.74	15.35 (5.13)	18.98 (4.87)	−5.10***	−0.73
Total	61.22 (1.50)	71.79 (1.72)	−4.63***	−0.53	50.68 (13.19)	67.46 (12.82)	−9.03***	−1.29

Note. $^{(.)}p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

An alternative explanation for these differences is that the self-report measures are susceptible to manipulation, especially among participants with high psychopathy and when there are consequences for them (i.e., early release or participation in programs). A meta-analysis using self-report scales to measure psychopathy in the community found response bias and underscore the validity of self-report psychopathy scales (Ray et al., 2013). A recent study has reported that SRP scores were more susceptible to overreporting than underreporting, and that overreporting affected the convergent validity (Knack, Blais, Baglole, & Stevenson, 2021). The authors suggest that future evaluations should include validity indices to detect response distortion in self-report psychopathy scales (Knack et al., 2021).

Additionally, the Interpersonal and Affective factors in the Uruguayan sample were not significantly associated with criminal history. This finding corroborates previous studies showing that these two factors of the PCL-R are not predictive of violence or criminality (Wong & Olver, 2015, for meta-analysis see Yang et al., 2010). The Uruguayan sample scored higher in Factor 2 (Lifestyle/Antisocial), which correlates moderately to highly with the antisocial personality disorder symptoms in offenders (Hare, 2003), whereas the interpersonal facet is the core of psychopathy and distinguishes psychopathy from antisocial personality disorder (Venables, Hall, & Patrick, 2014). Furthermore, some research has shown that, while the *Lifestyle* facet is associated with both instrumental and reactive violent behaviors, Factor 2 (*Lifestyle/Antisocial*) is more relevant for reactive violence and the Interpersonal facet predicts better instrumental violence (Blais et al., 2014). Unfortunately, we did not measure the type of violent behaviors in our samples. Future studies should follow the sample to obtain a better estimation of recidivism and distinguish between types of violence.

Understanding the construct of psychopathy has important implications for legal and psychological treatment (Gonzalez-Tapia, Obsuth, & Heeds, 2017; Tew et al., 2015). For instance, based on an ongoing debate around the concept of psychopathy some investigators recommend that psychopathy inventories should only assess relevant psychological traits rather than criminal/antisocial behaviors, which they view as the outcomes of the disorder (Boduszek & Debowska, 2016). At the same time, the empirical data indicate that structural models, longitudinal models, and behavior genetic models all show that overt antisociality (e.g., aggression) is a core component along with covert antisocial psychopathic traits, such as deception, manipulation, and callous use of others (Hare & Neumann, 2008), and these components are relevant treatment targets (e.g., Ribeiro da Silva et al., 2021). On a practical level, it has been suggested that self-report measures might be useful in forensic settings where information is needed to make decisions but sometimes is not available (for detail, see Tew et al., 2015; Vitacco et al., 2014). Therefore, we hope to encourage Latin American researchers and practitioners to further investigate this important construct in relation to violence and criminality. However, it is important to avoid confusing prognosis with diagnosis and consider that PCL-R was initially developed as a diagnosis tool to evaluate psychopathy rather than to predict criminality or recidivism.

The current study has some limitations. First, we used a non-representative sample of male offenders from two Latin American countries. Thus, it is unknown whether the current results will generalize to the rest of the offender population in both countries, as well as to the offender populations in other Latin American countries. It is important that future studies replicate these results in other samples (e. g., female and adolescent offenders), as well as in other Latin American countries. Second, data were collected in Uruguay and Chile in two different time periods, meaning there might be cohort effects. Future analyses should involve a more recent sample of Chilean offenders. Third, our study did not administer the PCL-R to check whether the latent structure of psychopathy differed or not with the rater-based versions. Future cross-cultural research comparing samples of offenders from Latin American countries should combine both types of measures of psychopathy. Third, some subscales did not demonstrate high reliability, and so should be interpreted with caution. Finally, we were unable to examine the external validity nor the predictive validity because we did not administer other measures, and offenders were not followed up in the community for recidivism. Future comparative research should include prospective design and incorporate other measures of risk assessment instruments (e.g. Self-Appraisal Questionnaire, Offender Assessment System).

5. Conclusions

The results of the present study indicate good fit for the four-model factor model of the SRP-SF in the sample of adult offenders in Chile and Uruguay. Furthermore, the four-model factor was invariant across both samples. The overall reliability of the SRP-SF was very good in both samples but borderline for the Affective factor. The utility of the SRP-SF to classify first-time offenders and offenders with a criminal history was very good for Chilean inmates but limited for the Uruguayan sample. Therefore, more studies are needed to examine the use of the SRP-SF as screening tool among offender samples in this region.

Declaration of Competing Interest

None.

help collecting data.

Appendix A

Table A1
SRP – SF Total Score Cut-off Points for criminal history in Uruguay and Chile.

Uruguay			Chile		
Different cut off points	Sensitivity	1 – specificity	Different cut off points	Sensitivity	1 – specificity
67	0.56	0.33	54	0.87	0.35
68	0.55	0.30	55	0.86	0.34
69	0.54	0.28	56	0.84	0.30
70	0.53	0.28	57	0.80	0.29
71	0.50	0.27	58	0.78	0.29

Appendix B

Table B2
SRP – SF without antisocial facet Total Score Cut-off Points for criminal history in Uruguay and Chile.

Uruguay			Chile		
Different cut off points	Sensitivity	1 – specificity	Different cut off points	Sensitivity	1 – specificity
47	0.55	0.73	36	0.90	0.44
48	0.54	0.69	37	0.90	0.40
49	0.52	0.66	38	0.88	0.38
50	0.50	0.65	39	0.85	0.34
51	0.47	0.64	40	0.81	0.32

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