**Structural equation modeling of psychopathic traits in Chilean female offenders using the Self-Report Psychopathy-Short Form (SRP-SF) Scale:**

**A comparison of gender-based item modifications versus standard items**

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## Abstract

**Introduction:** This study aims to check the utility of the SRP-SF to assess psychopathy in female offenders and to test a gender-based version.

**Method:** ASouth American sample of female offenders (N = 210) was assessed with the PCL-R; 110 subjects also completed the standard SRP-SF, while 109 completed a version with items rewritten to be more relevant for females. The underlying latent structure of the PCL-R and both versions of the SRP-SF were examined.

**Results:** Most of the modified items showed higher average item responses. The PCL-R showed a stronger association with the modified SRP-SF than with the standard SRP-SF.

The four-factor model showed very good fit in accounting for the PCL-R data, consistent with previous research (1). For both SRP-SF versions, the results indicated good model fit. Structural equation models were tested separately, in which a super-ordinate SRP-SF factor was set to predict a broad factor reflecting chronic misconduct. With both versions, a very good model fit was found, and the SRP-SF super-ordinate factor significantly predicted a chronic misconduct factor.

**Conclusions**

Both versions of the SRP-SF were able to adequately reflect psychopathic features in this sample. The modified items added robustness to representation of psychopathic features in this female sample.

**Keywords**

Personality Disorders - Cluster B (Antisocial-Borderline-Histrionic-Narcissistic). Diagnosis And Classification. Female offender. Gender Differences. Test/Psychometric

**Disclosure**

The authors disclose no potential conflicts of interest, except that Craig Neumann receives royalties from the sale of the SRP Manual.

## Introduction

The relevance of the construct of psychopathy calls for greater efforts to improve its evaluation, to discover its correlates and the particularities based on gender. Among those efforts we can highlight the development and validation of self-reported instruments in the measurement of psychopathic traits. This is a scientific trend that although it has several years of international tradition (1,2) it has only recently started to develop in South America (3,4).

The self-reported approach for the evaluation of psychopathy has been questioned mainly due to its dependence on truthful information and risk of impression management by psychopathic individuals. Nevertheless, its usefulness has also been demonstrated in different circumstances and with different instruments (5,6). The advances of self-report assessment in psychopathy have been reported by Neumann and Pardini (7), and modeled to either assess normal range personality variants or PCL-based traits.

In addition to developments in the diagnosis of psychopathy with self-report instruments, the scientific community has also sought to increase understanding of psychopathy in women. Research with male samples continues to be predominant, but at present there is information on women psychopaths with regards to its prevalence; comorbidity with other disorders; recidivism risk; assessment tools; influence of cultural effects; and differences in the manifestation of antisocial behavior among others (8–11). While most of this information comes from North America and Europe, psychopathy research with females in South America is emerging.

The integration of both areas of research, knowledge of psychopathy in women using self-report assessment, is a non-explored field in South America. Inquiry at the intersection of these two areas can help address many questions regarding the peculiarities in the manifestation of psychopathy in convicted women in the region and to the usefulness of the self-report instruments to evaluate it. We should also ask ourselves if the information obtained in such a way corresponds with the PCL based model, especially if we take into account the higher scores on psychopathy measures in males (12) and that the symptoms of psychopathy may not factor together in women in the same way as they do in men (13).

This study has the aim of contributing to the search for answers to the questions posed above. We specifically propose to add evidence on the utility of a self-report instrument in measuring psychopathy in Latin American female offenders, the integrity of its underlying factor structure, and further, to test a gender based modification of items contained in the Self-reported Psychopathy Short Form -SRP-SF- (14) .

### The SRP-SF

The Self-reported Psychopathy Scale Short Form (14) is a 29-item scale designed to measure psychopathic features. The SRP-SF assesses psychopathic traits, organized in four facets —interpersonal, affective, lifestyle, and antisocial—consistent with research on the PCL-R (15). Items are scored on a 5-point Likert scale (from 1 “Disagree Strongly” to 5 “Agree Strongly”).

The SRP and SRP-SF both have been shown to have a clear latent structure and good construct validity (16) (17); to be strongly positively correlated with the PCL-R (1) and the Youth Psychopathic Traits Inventory (7). Across a wide diversity of samples, the SRP traits are associated in the expected theoretical directions with relevant external correlates, such as criminal offenses and externalizing psychopathology (18), moral reasoning (19), amygdala activation to fearful faces (20), or emotional cues (21), and lower amygdala volume (22).

The Spanish version of SRP-SF was initially used in a sample of 208 male offenders housed at the “Centro de Cumplimiento Penal”, a detention center in the Province of Los Andes, Chile (3); the findings were as follows: SRP-SF total score distribution was normal, with a mean of 61.6; the Cronbach’s Alpha coeﬃcient for the total was 0.8, and 0.7, 0.4, 0.7 and 0.5 for the 1st, 2nd, 3rd, and 4th factors respectively; the manifest variable correlation with PCL-R was 0.4 (*p* = 0.01). A latent confirmatory factor analysis was carried out and model fit to the empirical four-factor model of psychopathy was good (Incremental fit = 0.94, Absolute fit = 0.04) (4).

## Methods

The current sample was composed of female offenders (N = 210) housed in the Centro Penitenciario Femenino of Santiago de Chile -CPF-. This penitentiary has a large number of convicted woman in the country. The sample was randomized and it constituted 36,8% of the total population of the CPF in June 2014. Mean age was 32 years (SD 10; min. 19 y max. 77 years). The data for all study variables were complete for all offenders.

All offenders were assessed with the PCL-R (15), which is scored on a 0 (not present), 1 (somewhat present), 2 (trait present) scale. Approximately one half of the sample (N = 110) also completed a Spanish version (23) of the standard SRP-SF (14), while a similar number of cases (N = 109) completed a modified form of the SRP-SF with several items that were written to be more relevant for females with psychopathic traits. Also, 10 cases completed both the standard and modified SRP-SF. The specific items that were modified were, 2, 6, 8, 12, 16, 18, 20, and 29. The SRP items are scored on a 1-5 scale (1=strongly disagree, 5=strongly agree).

The underlying latent structure of the PCL-R and both forms of the SRP-SF were examined. Mplus was used for all model analyses, using standard robust weighted least squares (WLSMV), given the ordinal nature of the item-level data (1). The Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA) were used to evaluate incremental and absolute fit, respectively.

The study had the authorization of the Metropolitan Regional Director of Gendarmería de Chile, respected the ethical principles of research in vulnerable population (24) and was approved by the Ethical Committee of the University of Valparaiso. An informed consent was obtained from each interviewed person.

## Results

The mean of the PCL-R total score was 19.3 (SD 7.6), with means for the Interpersonal Factor 3.3 (SD 2), Affective Factor 4.5 (SD 1.9), Behavioral Lifestyle Factor 5.6 (SD 2.3) and the Antisocial Factor 4.4 (SD 2.9). The average of the summed total and scale scores for the standard SRP-SF were 54.72 (SD 16.88); 11.34 (SD 5.25); 13.59 (SD 4.5); 13.47 (SD 5.33); 16.33 (SD 5.72), for the total and the Interpersonal, Affective; Behavioral Lifestyle and Antisocial scales, respectively. The means for the modified SRP-SF were 54.68 (SD 16.95); 11.38 (SD 5.26); 13.50 (SD 4.43); 13.44 (SD 5.34); 16.37 (SD 5.74) for the total and the Interpersonal, Affective; Behavioral Style and Antisocial scales, respectively.

For ease of interpretation, in Figure 1 below, mean item responses are displayed (i.e., average response choice by item) for both the “standard” and “modified” SRP-SF sub-samples. In this way, readers can immediate know the average item endorsement (i.e., strongly disagree – strongly agree) for each item. All of the modified items, except 6 and 8, showed higher average item responses, which suggested that the modified items were endorsed in the direction of higher psychopathic features.

FIGURE 1 AROUND HERE

The SRP-SF has been shown to be significantly associated with the PCL-R (1). As expected, for the current sample these measures were significantly correlated at the manifest variable level, though the PCL-R showed a stronger association with the modified SRP-SF (*r* = .69, p < .001), compared to this same association with the standard SRP-SF (*r* = .39, p < .001). Also, for the 10 cases that completed both the standard and modified SRP-SF measures, a Pearson correlation of *r* = .74 (p < .001) was found (non-parametric Spearman’s *rho* = .54, p < .054), providing evidence concurrent validity (--note that corresponding SRP scale correlations provided evidence of convergent validity, r’s range .66 [Interpersonal scales] to .84 [Antisocial scales]).

Next, the underlying latent structure of the PCL-R and both forms of the SRP-SF were examined. Previous research has demonstrated that a four-factor model can be used to account for both the PCL-R and SRP-SF items (1), which provides a viable representation of psychopathic personality (25). Consistent with previous research, the items were set to load on their respective psychopathy factors and the factors were allowed to freely correlate. With respect to the total sample, the four-factor model showed very good fit in accounting for the PCL-R data (CFI = .97, RMSEA = .04), consistent with previous research. Figure 2 below displays the standardized parameters (factor loadings and correlations). All factor loadings were generally strong and significant (*p*’s < .01 - .001), indicating that they were able to discriminate non-psychopathic from psychopathic individuals. However, three items (9, 16, & 19) showed relatively weaker loadings, suggesting they were less effective in discriminating psychopathic from non-psychopathic females. Specifically, the items tapping parasitic orientation -item 9-, failing to accept responsibility -item 16-, and revocation of conditional release -item 19- may represent domains where female offenders are rated at threshold for reasons other than psychopathic personality. Finally, the four factors were strongly correlated, indicating the together they severe as indicators for the super-ordinate syndrome of psychopathic personality (26).

FIGURE 2 AROUND HERE

For the SRP-SF, each version (standard & modified) was modeled separately to determine how well the four-factor model applied in representing self-reported psychopathic traits. For the standard SRP-SF, the results indicated good model fit (CFI = .92, RMSEA = .05), suggesting that it was able to adequately reflect psychopathic features in this South American female sample. While most items loaded strongly and significantly on their respective factors, it should be noted that some items showed suboptimal factor loadings (items 3 “Most people are wimps”; 16 “People sometime say I am cold-hearted” ), or could not be modeled due to limited variance (20 “I was convicted of a serious crime”; 22 “Every now and then I carry a weapon (knife or gun) for protection”, 25 “I have threatened people into giving me money, clothes, or makeup”, 29 “I have purposely tried to hit someone with the vehicle I was driving”). Figure 3 below displays the standardized model parameters.

FIGURE 3 AROUND HERE

For the modified SRP-SF, the results again revealed adequate fit (CFI = .92, RMSEA = .06), even though in this sub-sample several items were modified from their original form (Fig. 4). Notably, there were fewer problems with limited variance for these SRP-SF items, and all but item 20 could be included in the model. Thus, it appears the modified items added robustness to the assessment of psychopathic traits in this female sample.

FIGURE 4 AROUND HERE

For both versions of the SRP-SF, the factors were strongly correlated, as with the PCL-R factors. Thus, there is empirical support to suggest that the four SRP-SF factors also serve as indicators for a super-ordinate psychopathy factor—i.e., the syndrome of psychopathic personality.

For the final set of analyses, a structural equation model -SEM- was tested in which a super-ordinate SRP-SF factor was set to predict a broad factor reflecting chronic misconduct. Two SEMs were tested separately for each version of the SRP. With respect to the standard SRP-SF, the SEM showed very good model fit (CFI = .94, RMSEA = .08) and the SRP-SF super-ordinate factor significantly predicted the chronic misconduct factor (beta = .50). For the modified SRP-SF, the SEM also showed good fit (CFI = .96, RMSEA = .06) and the SRP-SF super-ordinate factor significantly predicted the chronic misconduct factor to a larger extent than the previous SEM (beta = .72). Thus, it appears that the modified SRP-SF was able to predict chronic misconducted to a greater extent than the standard SRP-SF, providing additional support for the modified items to represent psychopathic features in females. See Figures 5 and 6 for a graphic representation of the two SEMs.

FIGURE 5 AROUND HERE

FIGURE 6 AROUND HERE

## Discussion

This research was aimed at obtaining evidence of the utility of self-reported instruments in assessing psychopathic traits in a Latin American female offender sample, and to test a gender-based modified version of the Self-reported Psychopathy Short Form. As was found in previous research with convicted males in Latin American (3), the findings support the construct validity of the four factor model of the PCL-R (1). With respect to the total sample, the four-factor model showed very good fit with the PCL-R data (CFI = .97; RMSEA = .04) consistent with previous research.

Results suggest that the SRP-SF and its gender based modified version could be used to assess psychopathic features in this South American female sample. Based on higher item response rates, it appears the modified items added robustness to the assessment of psychopathic features in this female sample. Moreover, the modified SRP-SF was able to predict chronic misconduct to a greater extent than the standard SRP-SF, providing additional support for the modified items to represent psychopathic features in females.

Self-reported questionnaires might be considered of limited use in the assessment of psychopathy, given that such reports may be influenced by social desirability. The findings of the present study show that the information collected with the SRP-SF is of value in diagnostic considerations, given its significant correlation with the PCL-R. In a previous South American study it was found that the results obtained with this instrument were also very promising (3). The present research contributes to and extends this previous research by providing evidence for a modification of the SRP-SF items in terms of how psychopathic traits are expressed in females. At the same time, caution is warranted in the interpretation of the results, given the sample size of female offenders was somewhat small for conducting SEM. In addition, indicators used for the chronic misconduct factor reflect a range of external correlates that were available in the current study, and the relatively smaller subsamples used for our SEMs may have influenced the precision of the loadings on this factor. Nevertheless, our modeling results for the PCL-R and SRP are consistent with previous large sample research, supporting their validity (1), and similarly, the SEM results are in-line with other research that has examined a related set of external correlates (7).

The Latin American studies with the SRP-SF conducted thus far are based on convicted samples, both men and women. As such, there remains an important avenue for future research with non-convicted, general population, samples. In this context, the use of a self-reported instrument, such as the SRP-SF, may facilitate the collection of data in community samples because it would not require intensive assessment efforts as is required for a diagnostic tool like the PCL-R. By no means are we advocating that the PCL-R can be replaced given its central role in forensic assessment, however, when information on psychopathic traits in large community samples is required, priority should be given to an assessment tool, such as the SRP-SF, that is reliable and valid, is less time consuming and requires less professional qualifications to administer. Finally, it is important to highlight that the first development of this type of research carried out comparing convicted and non-convicted populations originated recently in the Province of Salta, Argentina; so, an interesting line of research is growing in Latin American countries (27).

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Figure 1. Standard and modified SRP-SF and mean item responses



**Figure 2.** Standardized parametersfor the four factor PCL-R model



**Figure 3.** Standardized parametersfor the four factor SRP-SF model (Standard version)

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Figure 4. Standardized parametersfor the four factor SRP-SF model (Modified version)



**Figure 5.** Structural equation model for standard SRP-SF and chronic misconduct



**Figure 6.** Structural equation model for modified SRP-SF and chronic misconduct