

Running head: Portuguese validation of the APSD-SR

Validation of a Portuguese version of the Antisocial Process Screening Device
self-report with a focus on delinquent behavior and behavior problems

Abstract

The main objectives of the present study were to validate a Portuguese version of the Antisocial Process Screening Device self-report (APSD-SR) and to evaluate the predictive importance of some constructs in discriminating between inmate delinquent youth and community youth. With a total of 760 participants, male ($n = 543$) and female ($n = 217$), divided in an inmate forensic sample ($n = 250$) and a community sample ($n = 510$) we were able to demonstrate psychometric properties that justify its use with the Portuguese juvenile population, in terms of factor structure, internal consistency, temporal stability, convergent validity, divergent validity, concurrent validity, and cutoff score. The predictive importance of psychopathic traits, self-reported delinquent behavior, and behavior problems on the prediction of sample membership (forensic versus community) was established by binary logistic regression.

Keywords: Assessment, Antisocial Process Screening Device Self-report, APSD-SR; Juvenile psychopathy; Validation

The notion that some youth transiently engage in criminal activities while others persistently make it a way of life into adulthood has been known for some time (Moffitt, 1993). Studies have systematically demonstrated that a small minority of youths are responsible for most of the serious and violent crimes (e.g., Baron, 1995) and that early offenders have significantly increased probabilities of becoming lifelong offenders (e.g., Farrington, Loeber & Kalb, 2001). Such knowledge has led researchers to identify important variables that can help explain the phenomena of serious and persistent juvenile delinquency. One such variable is juvenile psychopathy, which until recently was almost ignored by psychopathologists and forensic psychologists (Verona, Sadeh & Javdani, 2010). Borrowing from the established nomological network of psychopathy in adult male offenders, researchers have modified adult psychopathy assessment instruments to make them developmentally appropriate for use with youth (Frick & Hare, 2001; Hare, 1991). The presence or absence of psychopathic traits may help to identify unique etiological pathways in the development of antisocial behavior (Kotler & McMahon, 2005), and the importance of psychopathic traits in distinguishing serious and persistent antisocial youths has been gaining increasing support. Research suggests that juveniles with psychopathic-like traits begin their criminal activities earlier in life and commit more violent and non-violent crimes (Caputo, Frick & Brodsky, 1999; Forth, 1995; Kruh, Frick & Clements, 2005). They also present with more severe conduct problems (Frick, O'Brien, Wootton & McBurnett, 1994) and higher levels of narcissism (Barry, Grafeman, Adler & Pickard, 2007). The main purpose of the present study is to validate a Portuguese version of one of the most commonly used youth psychopathic traits assessment instruments (Patrick, 2010), namely the Antisocial Process Screening Device (APSD; Frick & Hare, 2001), to facilitate and promote the investigation of this important construct in the Portuguese ethnic/cultural reality.

The Antisocial Process Screening Device (APSD; Frick & Hare, 2001) is a measure specifically designed to evaluate psychopathic traits in children and adolescents. The self-report version (APSD-SR) is only used with adolescents. It was originally modeled after the Psychopathy Checklist - Revised (PCL-R; Hare, 2003) as a screening measure. There has, however, been some disagreement regarding the factor structure of the measure. While some authors (e.g., Frick, O'Brien, Wootton & McBurnett, 1994; Pardini, Lochman & Frick, 2003) argue for a bi-dimensional structure constituted by callous-unemotional (CU) traits and impulsivity/conduct problems (I-CP), studies undertaken with larger samples (e.g., Frick, Barry & Bodin, 2000; Frick, Bodin & Barry, 2000; Dadds, Fraser, Frost & Hawes, 2005; Fung, Gao & Raine, 2010) show the APSD can also be conceptualized as having a tri-dimensional structure composed of callous-unemotional (CU) traits, impulsivity (Imp), and narcissism (Nar). Other authors (e.g., Fite, Greening, Stoppelbein & Fabiano, 2009) found evidence that could support both a bi-dimensional and a tri-dimensional structure.

One of the first studies to report a three-factor structure was undertaken by Frick, Bodin and Barry (2000). Utilizing a large community sample ($n = 1136$) and a clinical sample ($n = 160$) confirmatory factor analysis provided some support for the tri-dimensional model ($\chi^2 = 198.42$, $p \leq .001$, CFI = .92, NNFI = .91). However, support for the three factor model is far from unanimous. Fritz, Ruchkin, Kaposov and Klinteberg's (2008) study, which involved a Russian youth inmate sample ($n = 250$) who voluntarily completed the APSD-SR, found poor fit for both the three factor ($\chi^2 = 547.8$ (149), NFI=.681, CFI=.742, RMSEA=.076 (.069-.083)) and two factor ($\chi^2 = 599.4$ (103), NFI=.526, CFI=.566, RMSEA=.102 (.094-.110)) models. As a second option these authors used a principal component analysis (PCA) that offered some support for the three factor model.

Muñoz and Frick (2007) assessed other psychometric properties of the APSD-SR. While the internal consistency of the total APSD scale ranged from .78 to .81, the internal consistency of the subscales was generally below acceptable values for confirmatory research (.50 to .68). The stability of the APSD-SR was also assessed in their study. For the total score, one year stability was .70 to .72, and the two year stability was .64. The subscales of the APSD showed less stability, ranging from .49 to .63 across one year, and .43 to .48 across two years. These authors also found associations between the APSD and other measures of anti-social behavior, both concurrently and predictively, such as Self-report of Delinquency Scale (Elliott & Ageton, 1980), in particular on the impulsivity dimension.

Frick, Barry and Bodin (2000) found that the association between the APSD and Conduct Disorder symptoms was .48 for the total score, .65 for narcissism, .58 for impulsivity, and .52 for the callous unemotional factor. According to Frick, Barry and Bodin these correlations with conduct disorder provide good evidence regarding the concurrent validity of the APSD-SR. In another study, Lee, Vincent, Hart and Corrado (2003) examined the concurrent validity of the APSD-SR and PCL:YV (Hare, 2003). They reported a moderate, significant correlation between the two measures. However, a low predictive efficiency for the APSD-SR predicting the PCL:YV was found using a cut score of 25. The authors reexamined their results using a median split for age and found the predictive efficiency for the 17-19 age group to be good, and for the 14-16 age group to be no different than chance.

It is unquestionable that the concept of juvenile psychopathy has progressively been gaining importance in forensic theory and practice (Salekin & Lynam, 2010). The research effort which has been put into developing measures that tap the psychopathy construct in children and adolescents is worthwhile if we have in mind the possibilities

of early identification and treatment (Salekin, 2010). However, the use of the psychopathy construct, originally developed for adult male populations, still spawns some controversies when considered in children and adolescents (Seagrave & Grisso, 2002), so further investigation is needed. The purposes of the present study, integrated in a larger exploratory investigation with the aim of researching Portuguese institutionalized juvenile delinquents, were multiple: to validate a Portuguese version of the APSD-SR; to promote the investigation of the generalizability of the construct of psychopathy to the Portuguese ethnic/cultural reality; and to evaluate the predictive importance of some constructs, namely psychopathic traits, self-reported delinquent behavior, and behavior problems in discriminating between inmate delinquent youth and community youth.

Method

Participants

The forensic sample was recruited from inmates of six nation-wide juvenile detention centers belonging to the Portuguese Ministry of Justice. Two hundred and fifty participants (age range = 13-20 years; mean age = 15.81 years; SD = 1.32 years), male ($n = 221$; age range = 13-20 years; mean age = 15.86 years; SD = 1.31 years) and female ($n = 29$; age range = 13-18 years; mean age = 15.45 years; SD = 1.35 years), agreed to voluntarily participate in the study. They were detained by the court's decision.

The community sample was randomly recruited from public schools. Five hundred and ten subjects (age range = 12-20 years; mean age = 15.92 years; SD = 1.48 years), male ($n = 322$; age range = 12-20 years; mean age = 16.03 years; SD = 1.62 years) and female ($n = 188$; age range = 13-20 years; mean age = 15.87 years; SD =

1.41 years), agreed to participate after being informed that it was voluntary and completely confidential.

The forensic and community participants statistically differed on some moderator variables. The forensic sample had fewer females ($\chi^2 = 5.484, p \leq .001$), fewer white-Europeans ($\chi^2 = 38.776, p \leq .001$), fewer urban background participants ($\chi^2 = 18.580, p \leq .001$), fewer years of education ($F = 1194.506, p \leq .001$), lower parent's socio-economic status ($U = 33514, p \leq .001$), and more divorced or deceased parents ($\chi^2 = 127.898, p \leq .001$). No statistical differences between the forensic and community participants were found regarding age and nationality.

Measures

The Antisocial Process Screening Device-Self-report (APSD-SR; Frick & Hare, 2001) is a 20-item measure designed to assess psychopathic-like traits in adolescents. Originally called the Psychopathy Screening Device (PSD), it was modeled after the Psychopathy Checklist - Revised (PCL-R; Hare, 2003). Each item is scored on a 3-point ordinal scale labeled 0 (not at all true), 1 (sometimes true) or 2 (definitely true). Higher scores signify an increased presence of the traits in question. The total score, as well as each dimension score, is obtained by adding the respective items. Some studies (e.g., Frick, O'Brien, Wootton & McBurnett, 1994) report two main factors: a callous-unemotional (CU) factor comprised of six items (tapping interpersonal and affective dimensions of psychopathy such as lack of guilt and absence of empathy) and an impulsivity-conduct problems (I-CP) factor (containing 10 items tapping overt behavioral dimensions of conduct problems and poor impulse control). Other studies (e.g., Frick, Barry & Bodin, 2000) report three main factors: the CU factor (which remained almost the same), whereas the I-CP factor appeared to subdivide into two further factors: narcissistic (Nar) and impulsive (Imp) traits. Higher scores indicate an

increased presence of the characteristics associated with each factor. Internal consistency reliability for the present study was Cronbach's alpha was: APSD total = .75; I-CP = .77, CU = .56, Nar = .68, and Imp = .47.

The Adapted Self-reported Delinquency Scale (ASDS; Carroll, Durkin, Houghton & Hattie, 1996) is a 38-item measure that assesses juvenile criminal behaviors scored on a three point scale 0 (never), 1 (sometimes) or 2 (frequently). The total score is obtained by adding the items. Higher scores mean higher frequency of criminal activity. Internal consistency reliability for the present study, estimated by Cronbach's alpha, was a very high at .96.

The Strengths and Difficulties Questionnaire (SDQ; Goodman, Meltzer & Bailey, 1998) self-response version is a short behavioral problems questionnaire that assesses children and adolescents aged between 11 and 16 years. The 25 ordinal items reflect five dimensions: Emotional Symptoms (ES), Conduct Problems (CP), Hyperactivity (H), Peer Problems (PP) and Prosocial Behaviour (P). Responses are scored as 0 (not at all true), 1 (sometimes true) or 2 (definitely true). Each dimension score is obtained by adding the respective items. Internal consistency reliability for the present study, estimated by Cronbach's alpha, was: ES = .51; CP = .46; H .52; PP .43; P = .61. These values are low, but still acceptable for research purposes (DeVellis, 1991).

The Marlowe-Crowne Social Desirability Scale - Short Form (MCSDS-SF; Ballard, 1992) was developed from the original MCSDS (Crowne & Marlowe, 1960) scale and is used to assess the tendency to give socially desirable responses on self-reports. It has 13 items scored either 0 (No) or Yes (1) with the total score obtained by adding the items. Higher scores reflect the tendency to provide more socially desirable

responses. Internal consistency for the present study, estimated by Kuder-Richardson, was .60.

The Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1979; 1989; Corcoran & Fischer, 2000) is a self-report one-dimensional measure that assesses self-esteem in adolescents and adults. The RSES has 10 items scored on a four-point ordinal scale on a range from 0 (strongly disagree) to 3 (strongly agree). The total score is obtained by adding the items with higher scores reflecting higher levels of self-esteem. Internal consistency reliability for the present study, estimated by Cronbach's alpha, was .79.

The Child and Adolescent Taxon Scale (CATS; Harris, Rice & Quinsey, 1994; Quinsey, Harris, Rice & Cormier, 2006) is an actuarial rating scale developed from variables related to childhood and adolescent anti-social and aggressive characteristics (e.g., childhood aggression problem; arrested under the age of 16). This scale has 8 items scored either 0 (No) or 1 (Yes). The total score is obtained by adding the items. Higher scores mean higher psychopathic characteristics. Since this is an actuarial scale no internal consistency reliability was estimated.

Procedure

Authorization to translate and validate the APSD-SR for a Portuguese population was obtained from the first author of the scale. Appropriate procedures (Van de Vijver & Hambleton, 1996; Hambleton, 2001) were followed during the translation and retroversion. The study was approved by the ethics committee of the Portuguese Ministry of Justice. The forensic sample was recruited from six nation-wide juvenile detention centers under the management of the Portuguese Ministry of Justice. The measures were administered by means of individual face-to-face interviews in an appropriate setting. The community sample was randomly recruited from schools in

Lisbon (Portugal). Participants who were unable or unwilling to complete the measures were excluded.

Results

The first step when attempting to validate the APSD-SR in a different culture is to confirm the factor structure obtained by Frick et al. (2000) in previous studies. So the initial attempt to replicate the factor structure of the APSD-SR was undertaken using EQS 6.1 (Bentler, 2004). However, no support was found for either the original two-factor ($\chi^2 = 865.12, p \leq .001; \chi^2/df = 5.12; GFI = .88; CFI = .72; RMSEA = .074 (.069 - .079)$) or the more recent three-factor structure ($\chi^2 = 552.85, p \leq .001; \chi^2/df = 4.19; GFI = .92; CFI = .77; RMSEA = .065 (.059 - .070)$) by means of confirmatory factor analysis (CFA) due to poor fits, although the fit regarding the three-factor structure was much more tolerable. The removal of participants who scored higher on social desirability had virtually no effect on the factor structure. Since the confirmatory approach was not viable using the present sample, it was then decided to use IBM SPSS v19 (IBM SPSS, 2010) principal component analysis (CPA) to explore the empirical dimensions of the present sample. The use of an exploratory procedure was also considered appropriate because of the different factor structures obtained by Frick et al. (1994, 2000).

The Kaiser-Meyer-Olkin measure of sampling adequacy (.83) and Bartlett test of sphericity ($p \leq .001$) indicated the suitability of the data for factor analysis. Preliminary principal components analysis (PCA) without rotation was undertaken using a criterion of greater than or equal to .30 as the level of loading significance (Nunnally & Bernstein, 1994). The PCA suggested a two-factor solution by both the eigenvalue and scree test criteria. A two-component solution was subsequently forced with the components accounting for 28.13% of the common variance in scale items. Loadings

for each component are set out in Table 1. The correlation matrix regarding these factors revealed positive correlations, some of which were strong (see Table 2).

Reliability and validity

The next step was the estimation of Cronbach's alpha, mean inter-item correlation and corrected item-total correlation range (see Table 3). The three-month stability for the forensic sample revealed a strong ($r = .80$; $p \leq .01$) statistically significant correlation. Only 88 participants completed the survey at time two, mostly due to many being transferred to detention centers located elsewhere in the country or completed their detention sentence. The convergent validity of the APSD-SR and its dimensions with CATS revealed moderately low correlations which were statistically significant; the divergent validity of the APSD-SR and its dimensions with RSES revealed mostly very weak or non-existing associations (see Table 4). The concurrent validity of the APSD with a DSM-IV Conduct Disorder diagnosis (American Psychiatric Association, 2000) revealed the existence of some moderately statistically significant positive point-biserial correlations (see Table 5). The presence of the Conduct Disorder diagnosis was coded as 1 and its absence as 0. The diagnosis of conduct disorder was made by the first author of this manuscript. The known-groups validity of the APSD-SR and its factors was calculated using Wilks' Lambda. Statistically significant differences were found between the forensic sample and the community sample (Wilks' $\Lambda = .639$; $\chi^2 = 338.05$ (4); $p \leq .001$).

The optimum cutoff score was estimated using logistic regression from which sensitivity, specificity and ROC area were estimated for different cutoffs (see Table 6). These three parameters were used simultaneously to improve classification efficiency. The chosen cutoff score was 12, which has the best values on these three parameters.

Using a binary logistic regression model we analyzed the importance of some predictive variables –psychopathic traits, behavioral problems, self-reported delinquent behaviors, social desirability, and sex – in distinguishing between members of the forensic group and the community group. This was done as a part of the Portuguese validation of the instruments which measure these constructs, and to analyze their potential value to the current psychometric assessment being done at the Portuguese youth detention centers. The dependent variable (DV) Group was coded 0 (community group) or 1 (forensic group). The predictive variable Gender was coded 0 (female) or 1 (male). Table 7 shows the independent variables which were statistically significant in the predictive model. Multicollinearity was checked with VIF. Only the SDQ Hyperactivity and the MCSDS-SF (social desirability) failed to reach statistical significance. The model was also used to classify the participants, and an overall correct classification rate of 90.6% was reached. The model had 80% sensitivity and 95.8% specificity. Sensitivity and specificity were calculated as a part of the binary logistic regression procedures.

Due to the predictive variable Gender being statistically significant it was decided to perform an additional binary logistic regression for males only, given the small sample size of the female forensic group ($n = 29$) which puts into question the accuracy of the results (Leech, Barrett & Morgan, 2008). Table 8 shows the independent variables which were statistically significant in the predictive model. Only the SDQ Hyperactivity, the SDQ Peer Problems, and the MCSDS-SF (social desirability) failed to reach statistical significance. The model had an overall correct classification rate of 90.2%, 83.7% sensitivity, and 94.7% specificity.

Discussion

The present study had as its first purpose analysis of the psychometric properties of the APSD-SR with a sample of Portuguese youths, a measure that has been used in several past studies to assess traits associated with psychopathy (e.g., Caputo, Frick & Brodsky, 1999; Muñoz & Frick, 2007). Principal component analysis (PCA) revealed a two-factor structure that was somewhat similar, albeit not identical (all the items in our sample loaded on at least one of the two factors), to the one found by Frick et al. (1994). The issue of factor structure is important due to the ongoing process of how best to define psychopathy (e.g., categorically versus dimensionally) and measure it. Evidence obtained in our study shows that the two-factor model seems to be the most acceptable one for the Portuguese version of the APSD-SR.

The first factor found was a mixed one similar to the Poor Impulse Control-Conduct Problems (I-CP). The mixed factor (items 1, 2, 4, 5, 6, 8, 9, 10, 11, 13, 14, 15, 16 and 17) can be further separated into Narcissism (items 5, 8, 10, 11, 14, 15 and 16) and Impulsivity (items 1, 4, 9, 13 and 17). Item 2 and item 6, which originally did not load on any of the APSD factors (Muñoz & Frick, 2007), did load on the mixed factor. The second factor (items 3, 7, 12, 18, 19 and 20) was similar to the Callous-Unemotional traits factor also reported by Frick et al. (1994). Other authors (e.g., Fite, Greening, Stoppelbein & Fabiano, 2009; Pardini, Lochman & Frick, 2003) have found supporting evidences for the two-dimensional nature of psychopathy in youths as the best and more parsimonious option, and this seems to apply also to the Portuguese cultural/ethnic reality.

Some psychometric problems were found. Analysis of the internal consistency revealed exceedingly low values (Cortina, 1993) for the Callous-Unemotional factor and the Impulsivity factor, similar to those found by Muñoz and Frick (2007). Such low values put in to question the fidelity of measurements for these two factors when taken

separately. Regarding the mean inter-item correlations, some problems were also found that reveal item heterogeneity. The APSD total score did not reach the recommended minimum value of .15 (Clark & Watson, 1995) in most of the samples, despite the fact that APSD factors did reach it. Regarding the corrected item-total correlation range, the APSD total score and its factors did not reach, in most of the samples, the minimum recommended value of .20 (Nunnally & Bernstein, 1994) which indicates some weak associations between the items.

There were also some more positive findings. The three months stability reached a statistically significant value of .80, which is considered a good result (Kline, 2000). This result is even better than the one obtained by Muñoz e Frick (2007) in their study of the stability of the APSD-SR. The convergent validity of the APSD and its factors with CATS revealed moderate correlations, always statistically significant; the strongest correlation was obtained with the APSD Total score, demonstrating the expected construct overlap (DeVellis, 1991; Kline, 2000). The divergent validity with the RSES showed mostly non-existing or very weak associations, with the exception of the Impulsivity factor.

The concurrent validity of the APSD and its factors with DSM-IV's Conduct Disorders diagnosis showed modest statistically significant correlations; the strongest correlation was also obtained with the APSD Total score. These correlations fell somewhat short of those obtained by Frick, Barry and Bodin (2000), which while higher than what we observed were non the less similar to the ones obtained by other authors (e.g., Fung, Gao & Raine, 2010). The discriminant validity revealed that the APSD and its factors could significantly discriminate between the forensic group and the community group, conceptualized as structurally different and mutually exclusive (Maroco, 2010). The appraisal of the most balanced cutoff score took into account three

criteria: sensitivity, specificity and ROC area; the chosen cutoff score was 12, due to the best balance of the three parameters.

Another purpose of this study was to evaluate the importance of some variables in discriminating between inmate delinquent youth and community youth. The first regression model (for both the male and female genders) offered support for the importance of research variables such as psychopathic traits (e.g., Kruh, Frick & Clements, 2005), delinquent behavior (e.g., Forth, 1995), and behavior problems (e.g., Frick, O'Brien, Wootton & McBurnett, 1994) in predicting group membership of delinquent youths and community youths. The second regression model (for the male gender only) reached almost the same results. The fact that the social desirability predictive variable didn't reach statistical significance indicates that it didn't influence the participant's responses in a significant manner.

Overall, these findings provide some additional support for the extension of the psychopathy construct to adolescents and its potential generalization across different cultures and ethnic groups. We must conclude it was possible to demonstrate some appropriate psychometric properties that justify the future use of the APSD-SR with the Portuguese youth population. Some nuances in the factor structure were detected, but these are consistent with the argument of some authors (e.g., Fritz, Ruchkin, Kaposov & Klinteberg, 2008) that the factor structure of the APSD-SR may vary somewhat between cultures. To our knowledge this is the first study that attempts to extend the validation of the APSD to the Portuguese language and society.

Conclusions

We were able to demonstrate the utility of the APSD-SR as a screening measure generalizable to the Portuguese cultural/ethnic reality. It that can serve as a means of early identification of children and adolescents with high psychopathic traits and thus promote a basis for effective interventions that can save expenses on future rehabilitation. Still some further validation procedures are recommended and should be done in the future (e.g., cross-validation using other samples; concurrent validity with the PCL:YV).

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Table 1

APSD-SR item loadings

		Factor 1	Factor 2
Item 1	Blames others for mistakes	.57	
Item 2	Engages in illegal activities	.54	
Item 3	Concerned about school work (R)		.35
Item 4	Acts without thinking	.35	
Item 5	Shallow emotions	.45	
Item 6	Lies easily and skillfully	.53	
Item 7	Keeps promises (R)		.54
Item 8	Braggs about accomplishments	.52	
Item 9	Gets bored easily	.36	
Item 10	Uses or cons others	.74	
Item 11	Teases other people	.59	
Item 12	Feels bad or guilty (R)		.59
Item 13	Risky and dangerous behaviors	.55	
Item 14	Charming in insincere ways	.56	
Item 15	Becomes angry when corrected	.30	
Item 16	Thinks he is more important	.56	
Item 17	Doesn't plan ahead	.46	
Item 18	Concerned about feelings of others (R)		.59
Item 19	Shows emotions (R)		.32
Item 20	Keeps same friends (R)		.55
<i>Eigenvalue</i>		3.90	1.73
<i>Variance</i>		19.50%	8.63%

Note. Loadings absent if < .30; (R) = Portuguese version reversible items

Table 2

Correlation matrix

	APSD Total	N-I	CU	Nar	Imp
APSD Total	1				
N-I	.91**	1			
CU	.57**	.18**	1		
Nar	.77**	.87**	.10**	1	
Imp	.75**	.83**	.14**	.52**	1

Note. **Significant at .01 level Pearson r ; N-I = Narcissism-Impulsivity; CU = Callous-Unemotional; Nar = Narcissism; Imp = Impulsivity.

Table 3

Cronbach's Alpha, Mean inter-item correlation, and Corrected item-total correlation range

	Full sample	Forensic sample	Community sample
APSD Total			
Cronbach α	.75	.70	.71
MIIC	.13	.11	.12
CITCR	-.03-.55	-.06-.48	-.09-.59
N-I			
Cronbach α	.77	.75	.77
MIIC	.20	.19	.21
CITCR	.23-.57	.15-.52	.24-.61
CU			
Cronbach α	.56	.54	.46
MIIC	.17	.16	.13
CITCR	.20-.42	.07-.43	.10-.30
Nar			
Cronbach α	.68	.67	.67
MIIC	.24	.24	.24
CITCR	.21-.54	.17-.53	.22-.58
Imp			
Cronbach α	.47	.40	.52
MIIC	.15	.12	.18
CITCR	.16-.35	.09-.25	.25-.34

Note. Cronbach α = Cronbach's alpha; MIIC = Mean inter-item correlation; CITCR = Corrected item-total correlation range; N-I = Narcissism-Impulsivity; CU = Callous-Unemotional; Nar = Narcissism; Imp = Impulsivity

Table 4

Convergent validity with CATS and divergent validity with RSES

Pearson <i>r</i>	CATS	<i>p</i> value	RSES	<i>p</i> value
APSD Total	.34	$p \leq .01$	-.16	$p \leq .01$
N-I	.28	$p \leq .01$	-.12	$p \leq .01$
CU	.23	$p \leq .01$	-.15	$p \leq .01$
Nar	.20	$p \leq .01$	-.00	<i>ns</i>
Imp	.22	$p \leq .01$	-.23	$p \leq .01$

Note. Pearson *r* = Pearson correlation; N-I = Narcissism-Impulsivity; CU = Callous-Unemotional; Nar = Narcissism; Imp = Impulsivity; *ns* = not significant

Table 5

Concurrent validity of the APSD with DSM-IV-TR Conduct Disorder (CD) diagnosis

<i>r_{pb}</i>	DSM-IV CD	<i>p</i> value
APSD Total	.33	<i>p</i> ≤ .01
N-I	.29	<i>p</i> ≤ .01
CU	.18	<i>p</i> ≤ .01
Nar	.22	<i>p</i> ≤ .01
Imp	.23	<i>p</i> ≤ .01

Note. *r_{pb}* = Point biserial correlation; N-I = Narcissism-Impulsivity; CU = Callous-Unemotional; Nar = Narcissism; Imp = Impulsivity

Table 6

Sensitivity, specificity and ROC area for the APSD-SR

	Sensitivity	Specificity	ROC area	<i>p</i> value*
CS 7	0%	100%	.60	$p \leq .001$
CS 8	0%	99.6%	.63	$p \leq .001$
CS 9	0%	100%	.66	$p \leq .001$
CS 10	0%	99.8%	.69	$p \leq .001$
CS 11	0%	99.8%	.71	$p \leq .001$
CS 12	74.4%	68.8%	.72	$p \leq .001$
CS 13	62.4%	75.9%	.69	$p \leq .001$
CS 14	0.4%	99.6%	.68	$p \leq .001$
CS 15	49.6%	85.1%	.67	$p \leq .001$
CS 16	43.2%	89.6%	.66	$p \leq .001$
CS 17	35.6%	92.7%	.64	$p \leq .001$
CS 18	29.6%	94.7%	.62	$p \leq .001$
CS 19	24%	95.9%	.60	$p \leq .001$

Note. CS = Cutoff score; *Null hypothesis: true area = .5

Table 7

Binary logistic regression coefficients for the forensic and community groups

Variables	<i>B</i>	SE	Wald	Exp(B)	<i>p</i> value
APSD N-I	-.195	.045	18.374	.822	$p \leq .001$
APSD CU	.372	.073	25.838	1.451	$p \leq .001$
SDQ ES	.230	.089	6.628	1.259	$p \leq .01$
SDQ CP	.441	.092	22.726	1.555	$p \leq .001$
SDQ H	.001	.068	.000	1.001	$p = .983$
SDQ PP	.237	.086	7.512	1.268	$p \leq .01$
SDQ P	.355	.092	14.834	1.426	$p \leq .001$
ASDS	.181	.018	101.297	1.199	$p \leq .001$
MCSDS-SF	.107	.061	3.082	1.113	$p = .079$
Gender	.784	.339	5.352	2.190	$p \leq .05$
Constant	-11.646	1.591	53.536	.000	$p \leq .001$

Note. APSD = Antisocial Process Screening Device; APSD N-I = Narcissism-Impulsivity; APSD CU = Callous-Unemotional; SDQ = Strengths and Difficulties Questionnaire; SDQ ES = Emotional symptoms; SDQ CP = Conduct problems; SDQ H = Hyperactivity; SDQ PP = Peer problems; SDQ P = Prosocial behavior; ASDS = Adapted Self-report Delinquency Scale; MCSDS-SF = Marlowe-Crowne Social Desirability Scale – Short Form

Table 8

Binary logistic regression coefficients for the male forensic and community groups

Variables	<i>B</i>	SE	Wald	Exp(B)	<i>p</i> value
APSD N-I	-.239	.051	21.777	.786	$p \leq .001$
APSD CU	.424	.083	26.088	1.529	$p \leq .001$
SDQ ES	.397	.114	11.998	1.487	$p \leq .001$
SDQ CP	.468	.108	18.632	1.597	$p \leq .001$
SDQ H	.007	.076	.010	1.007	$p = .919$
SDQ PP	.160	.098	2.653	1.174	$p = .103$
SDQ P	.315	.101	9.757	1.371	$p \leq .01$
ASDS	.168	.018	83.846	1.183	$p \leq .001$
MCSDS-SF	.095	.070	1.830	1.099	$p = .176$
Constant	-10.393	1.788	33.767	.000	$p \leq .001$

Note. APSD = Antisocial Process Screening Device; APSD N-I = Narcissism-Impulsivity; APSD CU = Callous-Unemotional; SDQ = Strengths and Difficulties Questionnaire; SDQ ES = Emotional symptoms; SDQ CP = Conduct problems; SDQ H = Hyperactivity; SDQ PP = Peer problems; SDQ P = Prosocial behavior; ASDS = Adapted Self-report Delinquency Scale; MCSDS-SF = Marlowe-Crowne Social Desirability Scale – Short Form

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