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The Brief Self-Control Scale and Its Refined Version among Incarcerated and Community Youths: Psychometrics and Measurement Invariance

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ABSTRACT

Self-control refers to the ability to override impulses and behave in accordance with societal norms, and deficits in self-control are strongly associated with conduct problems, externalizing disorders, crime, and violence. Here, we examine the psychometric properties of the Brief Self-Control Scale (BSCS) and its refined version (BSCS-R) among a forensic sample ($n = 131$) of incarcerated male youth and a school sample of male ($n = 257$) and female ($n = 213$) youth from Portugal. Confirmatory factor analysis indicated that the original one-factor structure of the BSCS and the refined two-factor structure of the BSCS-R obtained adequate fits. The BSCS demonstrated strong measurement invariance across gender and setting (forensic versus school), while the BSCS-R only revealed gender measurement invariance. The BSCS also tended to perform better that the BSCS-R in terms of other psychometric properties, including internal consistency measured by Alpha and Omega coefficients, discriminant and convergent validities, criterion validity, and known-groups validity. Findings support the use of the BSCS among justice-involved and community youth, but caution is advised regarding the use of its refined version in forensic settings.

Introduction

Spanning numerous disciplinary, theoretical, and methodological frameworks, self-control and the valid and reliable measurement of it have attracted tremendous scholarly attention (Duckworth and Kern 2011; Hay and Meldrum 2015; Jones 2017; Walters 2016; Ward, Ray, and Fox 2018; Weng and Chui 2018). Self-control attracts research attention because of its broad association with divergent conduct, externalizing, antisocial, and criminal behaviors (e.g., Audiffren and André 2015; DeLisi 2011, 2013; DeLisi et al. 2018; de Ridder et al. 2012; Gottfredson and Hirschi 1990; Hay and Meldrum 2015; Moffitt et al. 2011; Thaler and Shefrin 1981; Vaughn et al. 2009) and these effects are seen among clinical, correctional, and community samples. Irrespective of the way that it is conceptualized or the study group of interest (e.g., children, adolescents, or adults) (Hay and Meldrum 2015; Vazsonyi and Jiskrova 2018), self-control is a necessary and requisite condition for behavioral and social functioning and persons with significant deficits in self-control face hardships across multiple life domains.

Given the intuitive and scholarly linkages between self-control and various conduct problems, an enormous research literature has developed, one that has facilitated meta-analytic review. Indeed, multiple meta-analyses shown that self-control is significantly associated with delinquency, crime, antisocial behavior, externalizing behaviors, and victimization (de Ridder et al. 2012; Pratt et al.

2014; Vazsonyi, Mikuška, and Kelley 2017; Walters 2001, 2016) rendering it one of the most important correlates of crime. It is important to note that these relationships remain across different self-control measures spanning attitudinal and behavioral items (Duckworth and Kern 2011; Walters 2016). To illustrate, Duckworth and Kern (2011) meta-analyzed self-control measures among 282 samples and 33,564 participants and reported moderate convergent validity and the mean effect size was $r = .27$.

Despite convergent validity across measures, a variety of measurement issues remain for self-control instruments. One controversial area in the self-control criminological literature centers on whether and to what degree gender moderates the effects of self-control on antisocial behavior and whether self-control is expressed differentially for males and females. Gender differences in self-control have been investigated during the last decades, with most studies demonstrating that females usually have stronger self-control than males (Duckworth et al. 2015; Larson, Vaughn, Salas-Wright, and DeLisi 2015). For instance, Gottfredson and Hirschi (1990) argued in their seminal work that females develop stronger self-control than males which manifests in sex differences in antisocial behavior, but that the effects of self-control on behavior were invariant across gender. Studies supported their thesis (Botchkovar et al. 2015; Burton et al. 1998; Cho and Wooldredge 2018; Flexon, Meldrum, and Piquero 2016; Ivert, Andersson, Svensson, Pauwels, and Tortensson Levander 2018; Marcum et al. 2014). For example, Bembenutty (2007) investigated the relationship between college students' motivation for learning, concluding that female students tend to have higher levels of self-control than male students. Shekarkhar and Gibson (2011) conducted an investigation in order to examine the relationship between gender, self-control and offending behaviors in a large group of Latino youth, obtaining similar results. In their analysis of more than 35,000 youth selected from the International Self-Report Delinquency 2 Study, Muftić and Updegrove (2018) found that associations between parenting, self-control development, and delinquency were similar for females and males. Drawing on data from the National Longitudinal Study of Adolescent to Adult Health, Turanovic, Reisig, and Pratt (2015) found that low self-control was significantly associated with violent victimization for both females and males suggesting an invariant effect of self-control on victimization.

In contrast, other studies reported that self-control operates differently across gender (Chui and Chan 2016; DeLisi et al. 2010; Koon-Magnin et al. 2016; Li, Liberska, Salcuni, and Delvecchio 2019), develops differently across gender (Shulman et al. 2015), and that self-control measures operate differently across gender (Higgins 2007; Ward, Ray, and Fox 2018). For example, Chui and Chan (2016) studied a community sample of 1,377 adolescents in Hong Kong and found that self-control and the various components of self-control in Gottfredson and Hirschi's (1990) model are differentially associated with theft and violence. For theft and among males, impulsivity, simple tasks, risk-seeking, and self-centeredness were significantly associated whereas among females, only risk-seeking and physical activities were linked to theft. For violent crime, risk-seeking and self-centeredness were significant among both males and females while simple tasks was linked to violent crime only among males.

Gibson et al. (2010) used a Rasch rating scale analysis to examine the item functioning in the Grasmick et al. 24-item self-control scale and found that 33% of the items showed differential functioning or item bias by gender (also see, Higgins 2007; Ward, Ray, and Fox 2018) suggesting that self-control works differently by gender. Other studies consider that the effect of adverse childhood experiences (ACEs) on low self-control might be gendered, and suggest that future research might investigate the extent to which low self-control mediates the association between ACEs and delinquency/crime (Wolff and Baglivio 2017). Hoyle et al. (2018) recently found that low self-control was associated with drinking and driving among female but not male undergraduate students. In short, the role of self-control and antisocial conduct vis-à-vis gender remains open empirically.

Measuring self-control and its associated behaviors has been a challenging task for many researchers because there is a scarcity of well-validated and generalizable measures of self-control (Maloney, Grawitch, and Barber 2012). Self-report questionnaires appear to be the most consistent and reliable form of

measurement of self-control currently and much of the current literature relies on self-report measures to determine an individual's level of self-control (Duckworth and Kern 2011). These measures include a general measure of the construct that is widely disseminated: the Self-Control Scale developed by Tangney, Baumeister, and Boone (2004). These authors developed the 36-item Self-Control Scale (SCS) and a reduced 13-item Brief Self-Control Scale (BSCS). The SCS and the BSCS have been used in over 60 studies with most researchers opting for the BSCS. Shorter measures like the BSCS are particularly useful in real-world settings, where time and resources are often limited. The BSCS has been translated and psychometrically validated among an array of samples from different languages and cultures (e.g., Bertrams and Dickhauser 2009; Kuijer et al. 2008; Li, Nie, Boardley, Situ, and Dou 2014; Nebioglu, Konuk, Akbaba, and Eroglu 2012; Ozaki et al. 2016).

Tangney, Baumeister, and Boone (2004) did not provide substantial empirical justification for the unidimensionality of the BSCS and the debate regarding its factor structure and validity is ongoing (Ferrari, Stevens, and Jason 2009). Alternative empirically-based views suggesting alternative multi-factor structures for this measure have since emerged. For example, Maloney, Grawitch, and Barber (2012) applied EFA and confirmatory factor analysis (CFA) to the BSCS items and also identified two factors: Restraint (4 items) described as related to self-discipline and resisting temptation, and Impulsivity (4 items) described as acting on spontaneous thoughts and feelings; the remaining items were excluded and the authors presented their version of the instrument as a refined bi-factor measure (BSCS-R).

Current focus

To date, self-control and various forms of antisocial behavior are seen data from Austria, Belgium, and Slovenia (Hirtenlehner, Pauwels, and Mesko 2015), China (Cheung 2014), El Salvador (Olate, Salas-Wright, Vaughn, and Yu 2015), Hungary, the Netherlands, Switzerland, and the United States (Vazsonyi et al. 2001), Saudi Arabia (Sacarellos et al. 2016; Wright et al. 2017), across 25 nations (Vazsonyi and Belliston 2007), and in a comparative study across 30 nations (Botchkovar et al. 2015). To our knowledge, no study compared the BSCS and its refined two-factor version (BSCS-R) among forensic and community samples of male and female youth while testing for measurement invariance. It was predicted that the BSCS/BSCS-R would show: 1) the presumed latent factor structures and measurement invariance; 2) adequate internal consistency measured by Cronbach´s alpha and Omega coefficient; 3) discriminant validity (e.g., with measures of youth delinquency, aggression) and convergent validity; 4) criterion validity (e.g., with a crime seriousness index); and 5) known-groups validity (e.g., forensic versus school groups).

Method

Participants

A school sample of 470 participants (M = 15.89 years, SD = 1.00 years, age range = 14–18 years), subdivided into males (n = 257, M = 15.97 years, SD = .98 years, age range = 14–18 years) and females (n = 213, M = 15.79 years, SD = 1.03 years, age range = 14–18 years), agreed participate in the study voluntarily. This sample was recruited from public schools managed by the Portuguese Ministry of Education. The participants were mostly Portuguese nationals (88.3%) from an urban/semi-urban background, having completed an average of 9 years of education (M = 8.96, SD = .95). No differences were found between males and females regarding age (F = 7.786, p = .052), years of education (F = .534, p = .465) or socioeconomic status (U = 26336, p = .45).

A forensic sample of 131 male participants (M = 16.09 years, SD = 1.14 years, age range = 13–18 years) from the juvenile detention centers managed by the Portuguese Ministry of Justice agreed to participate in the study. These participants were detained by the court's decision, with most of them having been found guilty of committing serious and/or violent crimes (e.g., assault, homicide, rape, robbery). Most

were Portuguese nationals (87%) from an urban/semi-urban background, having completed an average of 6 years of education ($M = 6.49$, $SD = 1.42$). The mean age of their first problem with the law was 12.82 years ($SD = 1.17$), and the mean age of first institutionalization (not necessarily in a juvenile detention center) was 13.40 years ($SD = 1.14$). Males from the forensic sample, when compared to males from the school sample, had fewer years of education ($F = 425.226$, $p < .001$) and lower SES ($U = 9724.5$, $p < .001$), but no differences were found in terms of age ($F = 1.223$, $p = .27$).

Measures

The Brief Self-Control Scale (BSCS; Tangney, Baumeister, and Boone 2004) is a short self-report measure of general self-control. The BSCS was created from the original Self-Control Scale (SCS; Tangney, Baumeister, and Boone 2004), a 36-item measure, constructed using both rational and empirical methods, composed of five dimensions: Self-Discipline (11 items), Deliberate/Non-impulsive action (10 items), Healthy Habits (7 items), Work Ethic (5 items), and Reliability (5 items). Tangney, Baumeister, and Boone (2004) subsequently developed the BSCS as a 13-item unidimensional measure of self-control, tapping the same range of content as the SCS (it includes items from the five dimensions reported above). The BSCS can be scored, after reverse scoring the appropriate items (see Table 2), by adding the items rated on a 5-point scale, anchored from 1 = *Not at all like me*, to 5 = *Very much like me*. More recently, a shorter 8-item refined version of the BSCS (i.e., BSCS-R) was developed by Maloney, Grawitch, and Barber (2012), arguing it is composed of two factors: Restraint (4 items), and Impulsivity (4 items). Self-control deficits are commonly comorbid with other antisocial features and externalizing psychopathology (Caspi et al. 2017; DeLisi et al. 2018; Hay and Meldrum 2015; Jonason and Tost 2010), as such, it is important to include allied covariates (e.g. impulsivity, psychopathic traits, Dark Triad traits) when examining such associations. Internal consistency values are given below in the Results section.

The SUPPS-P Impulsive Behavior scale (SUPSS-P; Lynam 2013) is a short self-report questionnaire derived from the original UPPS-P designed to measure impulsivity. The SUPPS-P contains five factors with four items each: Negative urgency ("When I am upset I often act without thinking."), Lack of perseverance ("I generally like to see things through to the end."), Lack of premeditation ("I usually think carefully before doing anything."), Sensation seeking ("I quite enjoy taking risks."), and Positive urgency ("I tend to act without thinking when I am really excited."). The 20 items are scored on a 4-point ordinal Likert scale (1 = S*trongly agree*, 2 = *Agree somewhat*, 3 = *Disagree somewhat*, 4 = S*trongly disagree*). The total score, as well as each dimension score, is obtained by adding the respective items after reverse scoring the appropriate items so that higher scores indicate higher impulsivity. Previous studies report adequate psychometric properties, including internal consistency (e.g., Cyders et al. 2014). The Portuguese version of the SUPPS-P was used in the current study (Pechorro, Revilla, Palma, Gonçalves, and Cyders submitted). This Portuguese version of the SUPPS-P was previously validated among a school sample of male and female youth, and demonstrated adequate validity and reliability results; CFA confirmed the presence of the five factors, which showed adequate to good internal consistency values, and strong measurement invariance demonstrated across sex. Internal consistency for the current study, estimated by Cronbach's alpha (α), was SUPPS-P total = .93, Negative urgency = .70, Lack of perseverance = .74, Lack of premeditation = .77, Sensation seeking = .65, and Positive urgency = .73.

The Youth Psychopathic Traits Inventory – Triarchic – Short (YPI-Tri-S; Pechorro, DeLisi, Alberto, Ray, and Simões 2019) is a 21-item brief measure derived from Drislane et al.'s (2015) YPI-Triarchic scales measured with distinct relevance to constructs of the Triarchic model of psychopathy (Patrick et al. 2009). The YPI-Tri-S was designed using a refinement phase and a psychometric evaluation phase. The YPI-Tri-S consists of three scales with seven items each, namely: Boldness (e.g., "I like to do things just for the thrill of it."), Disinhibition (e.g., "It often happens that I talk first and think later."), and Meanness (e.g., "When other people have problems, it is often their own fault, therefore, one should not help them."). Each item is scored on an ordinal 4-point Likert scale (ranging from 0 = *Does not apply at all*, to 3 = *Applies very well*). Scores for each seven-item group

are summed to create the three subscales of the YPI-Tri-S and a total score can also be used. Higher scores reflect an increased presence of the associated characteristics, namely triarchic psychopathic traits. The YPI-Tri-S was previously examined among a forensic sample of male youth (Pechorro, DeLisi et al. 2019a) and a school sample of male and female youth (Pechorro, DeLisi, Ray, Alberto, and Simões 2019) from Portugal, having demonstrated adequate validity and reliability results. CFAs supported the theoretically expected three-factor structure, which showed adequate to good internal consistency values, and measurement invariance across sex (males versus females) and setting (forensic versus school) was established. Internal consistency for the current study was: YPI-Tri-S total = .95, Boldness = .83, Disinhibition = .87, and Meanness = .91.

The Dirty Dozen (DD; Jonason and Webster 2010) is a brief 12-item measure of the Dark Triad construct of personality, describing a cluster of independent but related undesirable personality traits commonly associated with socially malevolent character and nefarious behaviors (e.g., manipulation, self-promotion). The DD composed by the Machiavellianism (e.g., 1. "I tend to manipulate others to get my way"), Psychopathy (6. "I tend to be unconcerned with the morality of my actions"), and Narcissism (12. "I tend to expect special favors from others") factors. Originally designed for adults, it has also been used successfully with adolescents (Klimstra et al. 2014). The DD can be scored by adding the items of each factor on an ordinal Likert scale (ranging from *Strongly Disagree*, to *Strongly Agree*). A total score has also be used. Higher scores indicate higher levels of dark triad traits of personality. The Portuguese version of the DD, especially adapted to be used with the adolescent population, was used in the current study (Pechorro et al. In press) with a 5-point ordinal scale. The Portuguese version of the DD was previously validated among at-risk for delinquency male and female youth, and revealed the expected three-factor latent structure which showed sufficient to good internal consistency values. Cross-sex measurement invariance was also demonstrated. Internal consistency for the current study was DD total = .93, Machiavellianism = .86, Psychopathy = .94, and Narcissism = .86.

The Peer Conflict Scale-20 (Russell 2014) is brief version of the original PCS developed by Marsee et al. (2011). The PCS-20 consists of four subscales that assess combinatory constructs of form and function of aggression. Ten items assess proactive aggression, with five proactive relational items (e.g., "I gossip about others to become popular.") and five proactive overt items (e.g., "I start fights to get what I want"), while the remaining ten assess reactive aggression, subdivided as reactive relational (e.g., "If others make me mad, I tell their secrets") and reactive overt (e.g., "When someone hurts me, I end up getting into a fight."). Responses are made along a 4-point Likert ordinal scale (0 = *Not at all true*, 1 = *Somewhat true*, 2 = *Very true*, 3 = *Definitely true)*. Scores for each five-item group are summed to create the four subscales of the PCS-20. Previous studies found that the PCS-20 total score and its subscales have good internal consistency (e.g., Russell 2014). The Portuguese version of the PCS-20 was used in the current study (Pechorro et al. 2018). This Portuguese PCS-20 was previously examined among a forensic sample of male youth (Pechorro et al. 2018) and a school sample of male and female youth (Pechorro, Hayes, Gonçalves, Palma, Gonçalves, and Marsee submitted). CFAs confirmed the presence of the three-factor structure, which showed good internal consistency values, and measurement invariance across sex (males versus females from a school setting) was established. Internal consistency for the current study was: PCS-20 total = .96, Reactive Relational = .82, Proactive Relational = .87, Reactive Overt = .95, and Proactive Overt = .95.

The Add Health Self-Report Delinquency (AHSRD) was designed for the National Longitudinal Study of Adolescent Health (Add Health), a prospective study of American adolescents in the seventh through the twelfth grade (Udry 2003). The 17-item version includes ten items evaluating nonviolent delinquency (e.g., 1. "Paint graffiti or signs on someone else's property or in a public place", 5. "Steal something worth more than €50", 7. "Sell marijuana or other drugs") and seven items evaluating violent and aggressive delinquency (e.g., 11. "Get into a serious physical fight", 15. "Pull a knife or a gun on someone", 16. "Shot or stabbed someone") occurring during the last 12 months before the assessment. For both dimensions, the items range from low to high seriousness. The AHSRD can be scored by adding the items of each dimension on a 4-point ordinal scale (ranging from 0 = *None*, to 3 = *Five or more times*), and a total score can also be used. Higher scores indicate higher levels of juvenile delinquency. The Portuguese version of the

AHSRD was used in the current study (Pechorro et al. 2019c). This Portuguese version of the AHSRD was previously validated among at-risk for delinquency male and female youth, and revealed the expected two-factor latent structure; internal consistency values were considered good. Internal consistency for the current study was AHSRD total = .97, Nonviolent = .93, and Violent = .97.

The Conduct Disorder Screener (CDS; Lewinsohn, Rohde, and Farrington 2000) of the Oregon Adolescent Depression Project is a brief self-report screener created to identify adolescents with conduct disorder and predict future cases of antisocial personality disorder in young adulthood. The CDS consists of 6 items representative of a diagnosis of Conduct Disorder according to the DSM-IV (APA, 1994). It includes items such as "I broke rules at school", "I got into fights", "I got in trouble for lying or stealing". The CDS can be scored by adding the six items on a 4-point ordinal Likert scale (ranging from 1 = *Rarely or none of the time*, to 4 = *Most or all of the time*). Higher scores indicate higher levels of conduct disorder. The Portuguese version of the CDS was used in the current study (Palma, Pechorro, Jesus, and Nunes submitted). This Portuguese version of the CDS was previously validated among a school sample male and female youth, and revealed the expected unidimensional latent factor structure with good internal consistency values. Internal consistency for the current study was CDS total = .92.

The Motivation for School Learning (EMAE; Siqueira and Wechsler 2006) scale is a 43-item measure originally created to assess motivation for school learning among Brazilian youth, considering that motivation is essential for students to obtain good academic results and to ensure a decrease in the rates of indiscipline and avoid school dropout. The Portuguese adaptation of a short form of the EMAE (Imaginário et al. 2014) consists of 14 items that tap a unidimensional factor structure with a good internal consistency (Cronbach's Alpha = .82). The EMAE includes items such as "I have good grades because I study hard", "In the classroom I like to carry out the proposed tasks". The EMAE can be scored by adding the items on a 6-point ordinal Likert scale after reverse-scoring the appropriate items. The Portuguese short version of the EMAE was used in the current study (Imaginário et al. 2014). The Portuguese version of the EMAE was previously validated among a school sample male and female youth, and revealed the expected unidimensional latent factor structure. Internal consistency values were considered good. The internal consistency for the current study was EMAE total = .92.

A version of the General Delinquency Seriousness Classification (GDSC; Loeber, Farrington, Stouthamer-Loeber, and van Kammen 1998) was used to classify the seriousness of the criminal acts self-reported by the participants. Level 0 consists of no delinquency. Level 1 consists of minor delinquency committed in a home setting such as stealing small amounts of money. Level 2 consists of minor delinquency outside the home such as shoplifting things worth less than 5 euros, vandalism, and minor fraud (e.g., not paying train fare). Level 3 consists of moderately serious delinquency such as any theft over 5 euros, gang fighting, carrying weapons, and joy-riding. Level 4 consists of serious delinquency such as car theft and breaking and entering. Level 5 consists of having performed at least two of each of the behaviors in previous level.

A questionnaire was constructed to describe the participants' sociodemographic characteristics, including variables such as age, sex, nationality, years of education, and parents' socioeconomic status. Socioeconomic status (SES) was assessed by considering the parents' level of education and respective professional activities, a methodology that is in accordance with the social context in Portugal (see Simões 2000).

Procedures

Authorization to assess the psychometric properties of the Portuguese version of the BSCS was obtained from the first author of the scale (Tangney, Baumeister, and Boone 2004). The classically recommended procedure of back-translation was used (Van de Vijver 2016). The translation from English into Portuguese was completed by the first and last authors, with the back-translation into English being completed by a professional native English speaker translator. Discrepancies were

revised until no semantic differences were detected between the English version and the Portuguese version of the BSCS. Then the Portuguese translation was piloted tested on a group of juveniles that were not included in the present analysis to make sure the Portuguese adolescents would be able to properly understand the meaning of the items (i.e., that the wording of the items was adequate to their comprehension and reading level). The results of the pilot test were considered satisfactory and no additional changes to the translation had to be done.

Permission to assess detained youth was obtained from the General Directorate of Reintegration and Prison Services – Ministry of Justice (DGRSP-MJ). The detainees, from the six existing Portuguese Juvenile Detention Centers that admit male youth, were informed about the nature of the study and asked to participate. Only male participants were approached to participate on account of the small number of females admitted to the Portuguese juvenile detention centers. Permission to assess the youth coming from public schools of the Lisbon, Alentejo and Algarve regions was granted by the General Directorate of Education of the Portuguese Ministry of Education (DGE-ME). Parental authorization was mandatory according to the DGE-ME ethics committee and was previously obtained. Participants were informed about the nature of the study and asked to voluntarily collaborate. The participation rate was 90% for the forensic sample and 92% for the school sample. Some youth did not agree to collaborate or were able to collaborate (e.g., some refused to participate and some did not have authorization from their parents/legal tutors). The measures were administered in small group settings.

IBM SPSS Statistics v26 (IBM SPSS 2019) and EQS v6.4 (Bentler and Wu 2018) were used to analyze the data. Confirmatory factor analyses (CFAs) were conducted using Maximum Likelihood (ML) covariance matrixes and robust methods (that perform the best with small samples, non-normal data, and/or models with large degrees of freedom; see e.g., Bryant and Satorra 2012). The following goodness of fit indices were used to evaluate the models: Satorra-Bentler chi-square/degrees of freedom ($SB\chi^2/df$), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), Incremental Fit Index (IFI), and Akaike Information Criterion (AIC). The following criteria were considered for an adequate fit: $SB\chi^2/df$ <3, CFI and IFI > .90, RMSEA <.08, and lowest AIC; and for a good fit: $SB\chi^2/df$ <2, CFI and IFI > .95, RMSEA <.06, and lowest AIC. Items with standardized loading above .30 were retained (Blunch 2016). Modification indexes (MI) were checked and used to improve model fit if necessary. Multiple group CFAs were carried out across gender in order to test the measurement invariance of the instrument. Changes less than .01 in CFI (ΔCFI < .01), changes less than .015 in RMSEA (ΔRMSEA< .015), and non-significant $SB\chi^2$ difference tests were used as criteria for the presence of invariance across groups (Putnick and Bornstein 2016).

Pearson and Spearman correlations were used to analyze associations between scale and ordinal variables respectively, being considered low if below .20, moderate if between .20 and .50, and high if above .50 (Ferguson 2009). Intercorrelations between the total scale and its factors were also examined to further assess its construct validity. To compare the male and female groups ANOVAs were used (Field 2013) with effect size (partial Eta squared – η_p^2). Cronbach's alpha and omega coefficients (considered adequate if above .70), mean inter-item correlations (MIIC; considered good if within the .15-.50 range), and corrected item-total correlation ranges (CITCR; considered adequate if above .20) were used to examine reliability (Finch, Immekus, and French 2016). The omega coefficient was used due to the fact it is considered a better estimator of reliability that does not underestimate reliability like alpha does (Dunn, Baguley, and Brunsden 2014).

Results

We began our analysis of the psychometric properties of the BSCS and BSCS-R by examining its latent factor structures. Table 1 displays the different goodness of fit indices were obtained regarding the several CFA models. The BSCS one-factor model and the BSCS-R two-factor model were considered the best fitting models and were used in all the subsequent psychometric analysis procedures.

Table 1. Goodness of fit indexes.

Models	SBχ^2/df	IFI	CFI	RMSEA (90% CI)	AIC
Total sample					
1-factor (13 items)	4.19	.99	.98	.07(.06-.08)	142.19
1-factor (8 items)	2.25	.99	.99	.05(.03-.06)	4.94
2-factor (8 items)	1.46	.99	.99	.03(.00-.05)	−10.21
2-factor 2nd order (8 items)	2.16	.99	.99	.04(.02-.06)	2.86
Male school sample					
1-factor (13 items)	2.35	.98	.98	.07(.06-.09)	23.63
1-factor (8 items)	1.99	.99	.99	.06(.03-.09)	−0.14
2-factor (8 items)	1.44	.99	.99	.04(.00-.07)	-20.57
2-factor 2nd order (8 items)	1.81	.99	.99	.06(.02-.09)	−13.67
Female school sample					
1-factor (13 items)	1.78	.99	.98	.06(.04-.08)	-14.41
1-factor (8 items)	1.08	.99	.99	.02(.00-.06)	−18.46
2-factor (8 items)	1.96	.99	.99	.00(.00-.02)	-20.38
2-factor 2nd order (8 items)	1.76	.98	.98	.06(.02-.10)	−3.96
Male forensic sample					
1-factor (13 items)	1.28	.96	.96	.05(.00-.07)	-46.60
1-factor (8 items)	1.39	.95	.95	.05(.00-.10)	−12.36
2-factor (8 items)	1.41	.95	.95	.06(.00-.10)	-11.29
2-factor 2nd order (8 items)	1.48	.94	.93	.06(.00-.10)	-10.17

BSCS-R = Brief Self-Control Scale – Refined; SBχ^2/df = Satorra-Bentler chi-square/degrees of freedom; IFI = Incremental Fit Index; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; C.I. = confidence interval; AIC = Akaike Information Criteria

Table 2. Loadings for the confirmatory one- and two-factor structures among the total sample.

	BSCS	BSCS-R factor 1	BSCS-R factor 2
1. I have a hard time breaking bad habits.[R]	.70		.73
2. I am lazy.[R]	.68	−	−
3. I say inappropriate things.[R]	.80	−	−
4. I do certain things that are bad for me, if they are fun.[R]	.85	.85	
5. I refuse things that are bad for me.	.85	−	−
6. I wish I had more self-discipline.[R]	.73		.64
7. I am good at resisting temptation.	.84		.87
8. People would say that I have iron self-discipline.	.74		.75
9. Pleasure and fun sometimes keep me from getting work done.[R]	.67	.68	
10. I have trouble concentrating.[R]	.72	−	−
11. I am able to work effectively toward long-term goals.	.79	−	−
12. Sometimes I can't stop myself from doing something […].[R]	.88	.91	
13. I often act without thinking through all the alternatives.[R]	.77	.76	

BSCS = Brief Self-Control Scale; BSCS-R = BSCS-Refined; BSCS-R factor 1 = Impulsivity; BSCS-R factor 2 = Restraint; R = Reversible items; − = items not included in the two-factor refined structure

Table 2 displays the item loadings for the one-factor model of the BSCS and the two-factor model of the BSCS-R for the total sample. All items had loadings above the recommended .30 value.

Next, we tested for measurement invariance of the BSCS and BSCS-R across gender (males versus females) and setting (forensic versus school) (Table 3). In the first three cases tested strong invariance did hold because the ΔCFIs between the models were below the .01 cutoff and the ΔRMSEAs were below the .015 cutoff. This indicates that the constraints specified do hold in these three cases and that there is equivalence across gender and setting. However, in the final case (i.e., BSCS-R School vs. Forensic male) strong measurement invariance did not hold because the ΔRMSEA was clearly above the .015 cutoff and the ΔSBχ^2(df) value was significant corroborating it.

The correlations between the BSCS total, the BSCS-R total, the Impulsivity factor (reversed scored, i.e., Impulsivity control factor) and the Restraint factor were always positive and high (i.e., above .50) among the male and female school samples. These strong correlations were in line with what was expected.

Table 3. Invariance tests.

Model	SBχ²(df)	ΔSBχ²(df)	CFI	RMSEA
BSCS Male vs. Female school				
Configural model (no constrains)	240.38(108)	–	.99	.07(.06-.08
Scalar (strong) invariance	246.33(120)	12.94(12)^{ns}	.99	.07(.06-.08)
BSCS School vs. Forensic male				
Configural model (no constrains)	222.23(108)	–	.98	.07(.06-.09)
Scalar (strong) invariance	235.49(120)	21.53(12)*	.98	.07(.06-.08)
BSCS-R Male vs. Female school				
Configural model (no constrains)	49.01(26)	–	.99	.06(.04-.09)
Scalar (strong) invariance	56.62(34)	7.97(8)^{ns}	.99	.05(.03-.08)
BSCS-R School vs. Forensic male				
Configural model (no constrains)	52.37(26)	–	.99	.07(.04-.10)
Scalar (strong) invariance	96.19(34)	32.13(08)*	.98	.10(.07-.12)

SBχ²(df) = Satorra-Bentler chi-square (degrees of freedom); CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation .90 confidence interval; *$p < .05$

However, among the forensic sample the correlations tended to be weaker, with the correlation between the two factors dropping to a moderate level below .50 (see Table 4).

Table 5 presents the internal consistency of the BSCS and BSCS-R estimated using several methods, namely Cronbach's alphas, Omega coefficients, mean inter-item correlations, and corrected item-total correlations. These values ranged from adequate to good for both measures regarding the male and female school samples. However, the BSCS-R total and its 2 factors failed to reach adequate values (e.g. Alpha and Omega below .70) among the forensic sample.

Table 6 presents the discriminant, criterion-related and convergent validities of the BSCS and BSCS-R. The discriminant validity with impulsivity (SUPPS-P), triarchic psychopathic traits (YPI-Tri-S), dark triad traits of personality (DD), aggression (PCS-20), self-reported delinquency (AHSRD), and conduct disorder

Table 4. Pearson correlation matrixes.

	BSCS	BSCS-R	Impulsivity	Restraint
Male/Female school				
BSCS	1			
BSCS-R	.98***/.97***	1		
Impulsivity	.95***/.92***	.96***/.93***	1	
Restraint	.91***/.86***	.94***/.90***	.80***/.68***	1
Male forensic				
BSCS	1			
BSCS-R	.94***	1		
Impulsivity	.73***	.80***	1	
Restraint	.83***	.86***	.38***	1

BSCS = Brief Self-Control Scale; BSCS-R = BSCS-Refined
*** $p < .001$

Table 5. Internal consistency.

	BSCS	BSCS-R	Impulsivity	Restraint
Male/Female school				
Alpha	.94/.91	.92/.86	.88/.80	.84/.75
Omega	.95/.92	.93/.87	.88/.83	.86/.78
MIIC	.56/.43	.59/.43	.64/.49	.57/.43
CITCR	.41-.84/.49-.73	.62-.82/.58-.71	.69-.82/.55-.70	.66-.73/.42-.63
Male forensic				
Alpha	.75	.67	.58	.61
Omega	.76	.68	.59	.63
MIIC	.19	.17	.19	.24
CITCR	.21-.66	.21-56	.20-.39	.25-.48

BSCS = Brief Self-Control Scale; BSCS-R = BSCS-Refined; Alpha = Cronbach´s alpha; Omega = Omega coefficient; MIIC = Mean inter-item correlation; CITCR = Corrected item-total correlation range

Table 6. Discriminant, criterion-related and convergent validities.

	BSCS	BSCS-R	Impulsivity	Restraint
Male/Female school				
SUPPS-P total	−.88***/−.78***	−.86***/−.76***	−.85***/−.74***	−.77***/−.64***
Negative urgency	-.79***/-.61***	-.79***/-.58***	-.78***/-.60***	-.71***/-.46***
Lack of perseverance	-.61***/-.56***	-.57***/-.53***	-.58***/-.50***	-.51***/-.47***
Lack of premeditation	-.82***/-.71***	-.80***/-.69***	-.79***/-.67***	-.72***/-.58***
Sensation seeking	-.63***/-.51***	-.62***/-.50***	-.60***/-.47***	-.57***/-.45***
Positive urgency	-.82***/-.67***	-.81***/-.65***	-.80***/-.68***	-.73***/-.51***
YPI-Tri-S total	-.83***/-.68***	-.82***/-.67***	-.81***/-.67***	-.74***/-.55***
Boldness	-.76***/-.63***	-.75***/-.63***	-.74***/-.60***	-.69***/-.54***
Disinhibition	-.79***/-.59***	-.78***/-.57***	-.77***/-.58***	-.70***/-.45***
Meanness	-.82***/-.62***	-.80***/-.62***	-.80***/-.62***	-.71***/-.50***
DD total	-.79***/-.60***	-.78***/-.59***	-.79***/-.59***	-.69***/-.48***
Machiavellianism	-.74***/-.57***	-.73***/-.57***	-.72***/-.55***	-.66***/-.49***
Psychopathy	-.83***/-.63***	-.83***/-.60***	-.83***/-.63***	-.73***/-.46***
Narcissism	-.48***/-.32***	-.48***/-.33***	-.49***/-.32***	-.42***/-.27***
PCS-20 total	-.69***/-.45***	-.68***/-.44***	-.69***/-.43***	-.61***/-.37***
Reactive-Relational	-.41***/-.35***	-.40***/-.33***	-.40***/-.32***	-.34***/-.28***
Proactive-Relational	-.58***/-.28***	-.57***/-.27***	-.57***/-.27***	-.52***/-.22**
Reactive-Overt	-.68***/-.42***	-.68***/-.43***	-.68***/-.41***	-.61***/-.38***
Proactive-Overt	-.71***/-.45***	-.70***/-.46***	-.70***/-.45***	-.62***/-.38***
AHSRD total	-.72***/-.59***	-.72***/-.55***	-.70***/-.57***	-.65***/-.44***
Nonviolent	-.75***/-.59***	-.75***/-.56***	-.73***/-.57***	-.69***/-.45***
Violent	-.56***/-.29***	-.55***/-.27***	-.56***/-.27***	-.48***/-.23**
CDS total	-.76***/-.53***	-.76***/-.55***	-.75***/-.56***	-.69***/-.44***
ICS total	-.74***/-.54***	-.74***/-.53***	-.72***/-.53***	-.69***/-.44***
EMAE total	.82***/.68***	.81***/.66***	.79***/.62***	.75***/.57***
Male forensic				
SUPPS-P total	-.56***	-.53***	-.45***	-.42***
Negative urgency	-.59***	-.57***	-.50***	-.46***
Lack of perseverance	-.03	-.07	-.04	-.06
Lack of premeditation	-.43***	-.40***	-.34***	-.32***
Sensation seeking	-.04	-.03	-.01	-.05
Positive urgency	-.51***	-.51***	-.45***	-.40***
YPI-Tri-S total	-.55***	-.57***	-.44***	-.50***
Boldness	-.44***	-.48***	-.36***	-.42***
Disinhibition	-.44***	-.44***	-.32***	-.40***
Meanness	-.59***	-.59***	-.47***	-.51***
DD total	-.54***	-.51***	-.42***	-.43***
Machiavellianism	-.37***	-.37***	-.29**	-.33***
Psychopathy	-.53***	-.49***	-.37***	-.44***
Narcissism	-.41***	-.37***	-.34***	-.27**
PCS-20 total	-.55***	-.53***	-.45***	-.43***
Reactive-Relational	-.36***	-.37***	-.37***	-.25**
Proactive-Relational	-.41***	-.39***	-.36***	-.30**
Reactive-Overt	-.55***	-.54***	-.40***	-.49***
Proactive-Overt	-.55***	-.50***	-.40***	-.42***
AHSRD total	-.50***	-.47***	-.37***	-.41***
Nonviolent	-.48***	-.45***	-.34***	-.41***
Violent	-.48***	-.43***	-.36***	-.36***
CDS total	-.57***	-.52***	-.42***	-.44***
ICS total	-.27**	-.22*	-.22*	-.14
EMAE total	.65***	.60***	.51***	.49***

BSCS = Brief Self-Control Scale; BSCS-R = BSCS-Refined; SUPPS-P = Short UPPS-P Impulsive Behavior scale; YPI-Tri-S = Youth Psychopathic Traits Inventory – Triarchic – Short; DD = Dirty Dozen; PCS-20 = Brief Peer Conflict Scale; AHSRD = Add Health Self-Report Delinquency scale; CDS = Oregon Adolescent Depression Project Conduct Disorder Screener; ICS = Index of Crime Seriousness; EMAE = Motivation Scale for School Learning
*** $p < .001$, ** $p < .01$, * $p < .05$

symptoms (CDS) mostly revealed the expected negative significant correlations. The criterion-related validity with the crime seriousness index (ICS) also revealed the expected negative significant correlations. Lastly, the convergent validity was examined with the EMAE, mostly showing the expected positive significant correlations.

Table 7. Known-groups validity.

	Male forensic M(SD)	Male school M(SD)	Female school M(SD)	F, p, η_p^2
BSCS total	36.51(4.46)	45.16(8.40)	48.54(6.52)	120.38, .000, .29
BSCS-R total	22.10(2.89)	27.83(5.24)	29.90(4.03)	130.83, .000, .30
Impulsivity	11.60(1.58)	14.54(3.05)	15.85(2.37)	113.27, .000, .28
Restraint	10.49(1.89)	13.29(2.46)	14.05(2.02)	111.28, .000, .27

BSCS = Brief Self-Control Scale; BSCS-R = BSCS-Refined; F = Anova statistic; p = p-value; η_p^2 = Partial Eta squared effect size

Finally, in Table 7 the known-groups validity is demonstrated comparing the male forensic sample, the male school sample, and the female school sample. The descriptives and ANOVA results revealed significant differences between the three groups, and all post-hoc pairwise comparisons using the Games-Howell test were significant ($p < .001$).

Discussion

The primary aim of the present study was to assess the psychometric properties of the BSCS and BSCS-R among forensic and school samples of Portuguese youth while testing for measurement invariance across gender and setting. We hypothesized that the BSCS/BSCS-R would show: 1) the presumed latent factor structures and measurement invariance; 2) adequate internal consistency; 3) discriminant validity and convergent validity; 4) criterion validity; and 5) known-groups validity.

Considering the results obtained, the two-factor model of the BSCS-R described by Maloney, Grawitch, and Barber (2012) presented the best support in terms of the goodness-of-fit indexes among the total sample, the male school sample and the female school sample. However, the one-factor model of the original BSCS developed by Tangney, Baumeister, and Boone (2004) presented the best support among the forensic sample. It is also worth mentioning that the 2-factor 2nd order model of the BSCS-R not previously examined by Maloney, Grawitch, and Barber (2012) also presented generally acceptable fits, justifying the use of a total score.

Strong measurement invariance was demonstrated regarding the two cases of the BSCS (Male vs. Female school, and School vs. Forensic male) and one case of the BSCS-R (Male vs. Female school) indicating that the models share enough similarities that allow for impartial group mean comparisons (Millsap and Olivera-Aguilar 2012). However, the BSCS-R School vs. Forensic male case failed to demonstrate strong measurement invariance, indicating that the BSCS-R should be used with caution in forensic settings when the aim is to compare groups. Our results are relevant because when reviewing previous research it is evident that very few studies tested for BSCS measurement invariance across gender (see e.g., Morean et al. 2014) and none we are aware of tested it regarding the BSCS-R. Additionally, we could not find any studies that examined measurement invariance among youth samples. Because of that our study adds to the existing literature.

As expected, the associations between the BSCS total, the BSCS-R and its factors among the male and female school samples exhibited positive high significant associations. However, among the forensic sample the correlations tended to be weaker, with the correlation between the two factors of the BSCS-R falling sharply to a mere moderate level. Even so, these results, especially the ones regarding the male and female school samples, can be considered somewhat better than previously obtained ones that found lower correlations between the two factors of the BSCS-R (e.g., Lindner, Nagy, and Retelsdorf 2015; Maloney, Grawitch, and Barber 2012).

Internal consistency values estimated by Alpha and Omega coefficients for the BSCS and the BSCS-R across the male and female school samples suggested mostly good reliability for the total scale and its dimensions (Dunn, Baguley, and Brunsden 2014). These values were consistent with previously reported values (e.g., Maloney, Grawitch, and Barber 2012). However, when considering the forensic sample the BSCS-R total and its two factors failed to reach adequate values (i.e., Alpha and Omega below .70, substantially lower mean inter-item correlations and corrected item-total

correlation ranges), suggesting that the BSCS-R may not be a reliable measure when used in a forensic setting.

The discriminant validity with measures of impulsivity, triarchic psychopathic traits, dark triad traits of personality, aggression, self-reported delinquency, and conduct disorder symptoms revealed the negative correlations that were expected consistent with previously reported findings (e.g., Baron 2003; Jonason and Tost 2010; Romer, Duckworth, Sznitman, and Park 2010; Tangney, Baumeister, and Boone 2004; Wright et al. 2017). The criterion-related validity with the crime seriousness index also revealed the expected negative correlations. Lastly, the convergent validity was examined with a motivation for school learning measure, mostly showing the expected positive significant correlations. Unfortunately, we could not use another measure of self-control because we are not aware of previous validations of such measures in Portugal. It is important to mention that the general pattern of correlations tended to be higher among the male and female school samples, the forensic sample presenting some cases of low non-significant correlations. We should have in mind that the BSCS/BSCS-R (unlike low self-control scales) measures increased levels of self-control (i.e., higher scores indicate higher levels of self-control) leading to positive correlations in terms of convergent validity with motivation for school learning, and to negative ones in terms of divergent validity with the rest of the measures mentioned above. Studies using low self-control measures would show opposite correlations with these variables.

The known-groups validity, namely comparing the male and female school youth and the forensic and school male settings, was also demonstrated because the females did indeed score higher than the males on the BSCS, the BSCS-R and its factors, and the males from the school sample also scored higher than the males from the forensic sample. These results corroborate previous research and add to the literature investigating self-control differences between males and females, and between forensic and community settings (e.g., Burton et al. 1998; DeLisi et al. 2010; Gibson et al. 2010; Higgins and Tewksbury 2006; Shekarkhar and Gibson 2011). However, technically it is important to mention that the lack of strong measurement invariance of the BSCS-R among the forensic and school male settings would preclude any such group comparisons.

Overall, findings suggest that the Portuguese translation of the BSCS/BSCS-R provides a good overall assessment of the self-control construct, mostly supporting its use across different samples, settings and cultures. The current study was the first to examine the psychometric properties of the BSCS/BSCS-R among samples of male and female youth while simultaneously testing for measurement invariance. We must conclude that the original BSCS can be considered a useful and promising instrument in assessing self-control using a self-report format. However, caution is advised when using the refined BSCS-R in a forensic setting because strong measurement invariance was not demonstrated and internal consistency was below the commonly acceptable level.

Although our current focus was on psychometrics, the findings are also relevant to practitioners particularly those who work with at-risk and adjudicated youth who exhibit self-control deficits. Self-control can be improved via evidence-based treatments and a recent study of self-control treatment among juvenile offenders in the United States indicated significant improvements that even were associated with lower recidivism after release from juvenile custody (Hay, Widdowson, and Young 2018). This means that even youth in correctional settings can benefit from self-control interventions that when successful can result in global self-regulation habilitation.

Our study was characterized by some of limitations. First, our forensic sample was somewhat small when compared with our male and female school sample. However, we considered it was important to include a forensic sample because no previous investigation compared the BSCS/BSCS-R among forensic and school samples of male and female youth while testing for measurement invariance across gender (males versus females) and setting (forensic versus school). Second, the cross-sectional nature of the current study did not allow for an examination of the stability of the features assessed over time (i.e., temporal stability). Third, the fact that the measures used in the current study where presented in the self-report format may be problematic in terms of shared methods variance (i.e., variance may be attributable to the measurement method rather than to the constructs that the measures are assumed to represent). Fourth, the convergent validity was not assessed using another measure of self-control because we are not aware of

previous validations of such measures in Portugal. Further psychometric research is needed (e.g., cross-validation using bigger forensic samples of male and female youth offenders) to arrive at more concrete and definitive conclusions.

Conclusion

Despite such limitations, the benefits in terms of using a brief measure such as the BSCS for research and real world interventions are considerable. For example, at-risk for delinquency youth who are identified as having low self-control would be good candidates for programs that emphasize self-discipline, prosocial skills and behavior management techniques. We hope our findings provide support for improved use of the BSCS with justice-involved youth when researching deviance and crime.

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References

Audiffren, Michael and André. Nathalie. 2015. "The Strength Model Of Self-Control Revisited: Linking Acute And Chronic Effects Of Exercise On Executive Functions." *Journal of Sport and Health Science* 4:30–46. doi:10.1016/j.jshs.2014.09.002.

American Psychiatric Association. 1994. Diagnostic and statistical manual of mental disorders (4th ed.). Washington, DC: Author.

Baron, Stephen. 2003. "Self-Control, Social Consequences, And Criminal Behavior: Street Youth And The General Theory Of Crime." *Journal of Research in Crime and Delinquency* 40:403–25. doi:10.1177/0022427803256071.

Bembenutty, Hefer. 2007. "Self-Regulation Of Learning And Academic Delay Of Gratification." *Journal of Advanced Academics* 18:586–616. doi: 10.4219/jaa-2007-553

Bentler, Peter and Wu. Eric. 2018. *Supplement to EQS 6.4 For Windows User's Guide*. Temple City, CA: Multivariate Software.

Bertrams, Alex and Oliver Dickhauser. 2009. "Messung Dispositioneller Selbstkontroll-Kapazität: Eine Deutsche Adaptation Der Kurzform Der Self-Control Scale (SCS-K-D) [Measuring Dispositional Self-Control Capacity. A German Adaptation Of The Short Form Of The Self-Control Scale (SCS-K-D)]." *Diagnostica* 55:2–10. doi:10.1026/0012-1924.55.1.2.

Blunch, Niels. 2016. *Introduction to Structural Equation Modeling Using IBM SPSS Statistics and EQS*. Thousand Oaks, CA: SAGE Publications.

Botchkovar, Ekaterina, Ineke Marshall, Michael Rocque, and Chad Posick. 2015. "The Importance Of Parenting In The Development Of Self-Control In Boys And Girls: Results From A Multinational Study Of Youth." *Journal of Criminal Justice* 43:133–41. doi:10.1016/j.crimjus.2015.02.001.

Bryant, Fred and Albert Satorra. 2012. "Principles And Practice Of Scaled Difference Chi-Square Testing." *Structural Equation Modeling: A Multidisciplinary Journal* 19:372–98. doi:10.1080/10705511.2012.687671.

Burton, Velmer, Francis Cullen, David Evans, Leanne Alarid, and Gregory Dunaway. 1998. "Gender, Self-Control, And Crime." *Journal of Research in Crime and Delinquency* 35:123–47. doi:10.1177/0022427898035002001.

Caspi, Avshalom, Renate Houts, Daniel Belsky, Honalee Harrington, Sean Hogan, Sandhya Ramrakha, and Terry Moffitt. 2017. "Childhood Forecasting Of A Small Segment Of The Population With Large Economic Burden." *Nature Human Behaviour* 1:0005. doi:10.1038/s41562-016-0005.

Cheung, N. 2014. "Low Self-Control And Co-Occurrence Of Gambling With Substance Use And Delinquency Among Chinese Adolescents." *Journal of Gambling Studies* 30:105–24. doi:10.1007/s10899-012-9351-8.

Cho, Sujung and John Wooldredge. 2018. "Direct And Indirect Effects Of Low Self-Control On The Personal Victimization Of South Korean Youth." *Journal of Youth Studies* 21:958–82. doi:10.1080/13676261.2018.1441527.

Chui, Wing and Heng Chan. 2016. "The Gendered Analysis Of Self-Control On Theft And Violent Delinquency: An Examination Of Hong Kong Adolescent Population." *Crime and Delinquency* 62:1648–77. doi:10.1177/0011128712470992.

Cyders, Melissa, Andrew Littlefield, Scott Coffey, and Kenny Karyadi. 2014. "Examination of a Short Version of the UPPS-P Impulsive Behavior Scale." *Addictive Behavior* 39:1372–76. doi:10.1016/j.addbeh.2014.02.013.

de Ridder, Denise, Gerly Lensvelt-Mulders, F. Catrin Finkenauer, Marijn Stok, and Roy Baumeister. 2012. "Taking Stock Of Self-Control: A Meta-Analysis Of How Trait Self-Control Relates To A Wide Range Of Behaviors." *Personality and Social Psychology Review* 16:76–99. doi:10.1177/1088868311418749.

DeLisi, Matt. 2011. "Self-control Theory: The *Tyrannosaurus Rex* of Criminology Is Poised to Devour Criminal Justice." *Journal of Criminal Justice* 39103–05. doi:10.1016/j.crimjus.2011.02.012.

DeLisi, Matt. 2013. "Pandora's Box: The Consequences of Low Self-Control into Adulthood." Pp. 261–73 in *Handbook Of Life-Course Criminology*, edited by Chris Gibson and Marvin Krohn. New York, NY: Springer,

DeLisi, Matt, Jennifer Tostlebe, Kyle Burgason, Mark Heirigs, and Michael Vaughn. 2018. "Self-Control Versus Psychopathy: A Head-To-Head Test Of General Theories Of Antisociality." *Youth Violence and Juvenile Justice* 16:53–76. doi:10.1177/1541204016682998.

DeLisi, Matt, Kevin Beaver, Michael Vaughn, Chad Trulson, Anna Kosloski, Alan Drury, and John Wright. 2010. "Personality, Gender, And Self-Control Theory Revisited: Results From A Sample Of Institutionalized Juvenile Delinquents." *Applied Psychology in Criminal Justice* 6:31–46.

Drislane, L. E., S. J. Brislin, K. S. Kendler, H. Andershed, H. Larsson, and C. J. Patrick. 2015. "A Triarchic Model Analysis of the Youth Psychopathic Traits Inventory." *Journal of Personality Disorders,* 29 (1):15–41. doi: 10.1521/pedi_2014_28_144.

Duckworth, Angela, Elizabeth Shulman, Andrew Mastronarde, Sarah Patrick, Jinghui Zhang, and Jeremy Druckman. 2015. "Will Not Want: Self-Control Rather Than Motivation Explains The Female Advantage In Report Card Grades." *Learning and Individual Differences* 39:13–23. doi:10.1016/j.lindif.2015.02.006.

Duckworth, Angela and Margaret Kern. 2011. "A Meta-Analysis Of The Convergent Validity Of Self-Control Measures." *Journal of Research in Personality* 45:259–68. doi:10.1016/j.jrp.2011.02.004.

Dunn, Thomas, Thom Baguley, and Vivienne Brunsden. 2014. "From Alpha To Omega: A Practical Solution To The Pervasive Problem Of Internal Consistency Estimation." *British Journal of Psychology* 105:399–412. doi:10.1111/bjop.12046.

Ferguson, Christopher. 2009. "An Effect Size Primer: A Guide for Clinicians and Researchers." *Professional Psychology: Research and Practice* 40:532–38. doi:10.1037/a0015808.

Ferrari, Joseph, Eduard Stevens, and Leonard Jason. 2009. "The Relationship Of Self-Control And Abstinence Maintenance: An Exploratory Analysis Of Self-Regulation." *Journal of Groups in Addiction and Recovery* 4:32–41. doi:10.1080/15560350802712371.

Field, Andy. 2013. *Discovering Statistics Using IBM SPSS Statistics*. 4th ed. London, UK: SAGE Publications Ltd.

Finch, W. Holmes, Jason Immekus, and Brian French. 2016. *Applied Psychometrics Using SPSS and AMOS*. Charlotte, NC: Information Age Publishing Inc.

Flexon, Jamie, Ryan Meldrum, and Alex Piquero. 2016. "Low Self-Control And The Victim-Offender Overlap: A Gendered Analysis." *Journal of Interpersonal Violence* 31:2052–76. doi:10.1177/0886260515572471.

Gibson, Chris, Jeffrey Ward, John Wright, Kevin Beaver, and DeLisi. Matt. 2010. "Where Does Gender Fit In The Measurement Of Self-Control?" *Criminal Justice and Behavior* 37:883–903. doi:10.1177/0093854810369082.

Gottfredson, Michael and Travis Hirschi. 1990. *A General Theory Of Crime*. Stanford, CA: Stanford University Press.

Hay, Carter, Alex Widdowson, and Brae Young. 2018. "Self-Control Stability And Change For Incarcerated Juvenile Offenders." *Journal of Criminal Justice* 56:50–59. doi:10.1016/j.jcrimjus.2017.08.008.

Hay, Carter and Ryan Meldrum. 2015. *Self-Control And Crime Over The Life Course*. Thousand Oaks, CA: Sage.

Higgins, George. 2007. "Examining The Original Grasmick Scale: A Rasch Model Approach." *Criminal Justice and Behavior* 34:157–78. doi:10.1177/0093854806290071.

Higgins, George and Richard Tewksbury. 2006. "Sex And Self-Control Theory: The Measures And Causal Model May Be Different." *Youth and Society* 37:479–503. doi:10.1177/0044118X05283423.

Hirtenlehner, Helmut, Lieven Pauwels, and Gorazd Mesko. 2015. "Is The Criminogenic Effect Of Exposure To Peer Delinquency Dependent On The Ability To Exercise Self-Control? Results From Three Countries." *Journal of Criminal Justice* 43:532–43. doi:10.1016/j.crimjus.2015.05.006.

Hoyle, Justin, Bryan Miller, John Stogner, Chad Posick, and Brenda Blackwell. 2018. "Analyzing Predictors Of Drinking And Driving Among Gender Cohorts Within A College Sample." *American Journal of Criminal Justice* 43:754–67. doi:10.1007/s12103-017-9431-5.

IBM Corp. 2019. *IBM SPSS Statistics for Windows (Version 26)*. Armonk, NY: IBM Corp.

Imaginário, Susana, Saul Jesus, Fátima Morais, Catarina Fernandes, Rita Santos, Joana Santos, and Ivete Azevedo. 2014. "Motivação Para A Aprendizagem Escolar: Adaptação De Um Instrumento De Avaliação Para O Contexto Português [Motivation For School Learning: Adaptation Of An Evaluation Instrument For The Portuguese Context]." *Revista Lusófona De Educação* 27:91–105.

Ivert, Anna-Karin, Frida Andersson, Robert Svensson, Lieven Pauwels, and Marue Levander. 2018. "An Examination Of The Interaction Between Morality And Self-Control In Offending: A Study Of Differences Between Girls And Boys." *Criminal Behaviour and Mental Health* 28:282–94. doi:10.1002/cbm.2065.

Jonason, Peter and Gregory Webster. 2010. "The Dirty Dozen: A Concise Measure Of The Dark Triad." *Psychological Assessment* 22:420–32. doi:10.1037/a0019265.

Jonason, Peter and Jeremy Tost. 2010. "I Just Cannot Control Myself: The Dark Triad And Self-Control." *Personality and Individual Differences* 49:611–15. doi:10.1016/j.paid.2010.05.031.

Jones, Shayne. 2017. "Does Choice Of Measure Matter? Assessing The Similarities And Differences Among Self-Control Scales." *Journal of Criminal Justice* 50:78–85. doi:10.1016/j.jcrimjus.2017.04.005.

Klimstra, Theo, Jelle Sijtsema, Jens Henrichs, and Maaike Cima. 2014. "The Dark Triad Of Personality In Adolescence: Psychometric Properties Of A Concise Measure And Associations With Adolescent Adjustment From A Multi-Informant Perspective." *Journal of Research in Personality* 53:84–92. doi:10.1016/j.jrp.2014.09.001.

Koon-Magnin, Sarah, David Bowers, Jennifer Langhinrichsen-Rohling, and Catalina Arata. 2016. "Social Learning, Self-Control, Gender, And Variety Of Violent Delinquency." *Deviant Behavior* 37:824–36. doi:10.1080/01639625.2016.1147798.

Kuijer, Roeline, Denise de Ridder, Carolijn Ouwehand, Bart Houx, and Ruud van den Bos. 2008. "Dieting As A Case Of Behavioral Decision Making: Does Self-Control Matter?" *Appetite* 51:506–11. doi:10.1016/j.appet.2008.03.014.

Larson, Mathew, Michael Vaughn, Christopher Salas-Wright, and DeLisi. Matt. 2015. "Narcissism, Low Self-Control, And Violence Among A Nationally Representative Sample." *Criminal Justice and Behavior* 42:644–61. doi:10.1177/0093854814553097.

Lewinsohn, Peter, Paul Rohde, and David Farrington. 2000. "The OADP-CDS: A Brief Screener For Adolescent Conduct Disorder." *Journal of the American Academy of Child and Adolescent Psychiatry* 39:888–95. doi:10.1097/00004583-200007000-00018.

Li, Jian-Bin, Hanna Liberska, Silvia Salcuni, and Elisa Delvecchio. 2019. "Aggressive Perpetration And Victimization Among Polish Male And Female Adolescents: The Role Of Attachment To Parents And Self-Control." *Crime and Delinquency* 65:401–21. doi:10.1177/0011128718787472.

Li, Jian-Bin, Yang Gang Nie, Ian Boardley, Qiao-Min Situ, and Kai Dou. 2014. "Moral Disengagement Moderates The Predicted Effect Of Trait Self-Control On Self-Reported Aggression." *Asian Journal of Social Psychology* 17:312–18. doi:10.1111/ajsp.12072.

Lindner, Christoph, Gabriel Nagy, and Jan Retelsdorf. 2015. "The Dimensionality Of The Brief Self-Control Scale - An Evaluation Of Unidimensional And Multidimensional Applications." *Personality and Individual Differences* 86:465–73. doi:10.1016/j.paid.2015.07.006.

Loeber, R., D. Farrington, M. Stouthamer-Loeber, and W. van Kammen. 1998. *Antisocial behavior and mental health problems: Explanatory factors in childhood and adolescence.* Mahwah, NJ: Lawrence Erlbaum Associates.

Lynam, Donald. 2013. *Development Of A Short Form Of The UPPS-P Impulsive Behavior Scale.* Unpublished Technical Report.

Maloney, Patrick, Matthew Grawitch, and Larissa Barber. 2012. "The Multi-Factor Structure Of The Brief Self-Control Scale: Discriminant Validity Of Restraint And Impulsivity." *Journal of Research in Personality* 46:111–15. doi:10.1016/j.jrp.2011.10.001.

Marcum, Catherine, George Higgins, Tina Freiburger, and Melissa Ricketts. 2014. "Exploration Of The Cyberbullying Victim/Offender Overlap By Sex." *American Journal of Criminal Justice* 39:538–48. doi:10.1007/s12103-013-9217-3.

Marsee, Monica, Christopher Barry, Kristina Childs, Paul Frick, Eva Kimonis, Luna Muñoz, and Katherine Lau. 2011. "Assessing The Forms And Functions Of Aggression Using Self-Report: Factor Structure And Invariance Of The Peer Conflict Scale In Youths." *Psychological Assessment* 23:792–804. doi:10.1037/a0023369.

Millsap, Roger and Margarita Olivera-Aguilar. 2012. "Investigating Measurement Invariance Using Confirmatory Factor Analysis." Pp. 380–92 in *Handbook Of Structural Equation Modeling*, edited by Rick Hoyle. New York, NY: Guilford Press,

Moffitt, Terrie, Louise Arseneault, Daniel Belsky, Nigel Dickson, Robert Hancox, HonaLee Harrington, Renate Houts, and Avshalom Caspi. 2011. "A Gradient Of Childhood Self-Control Predicts Health, Wealth, And Public Safety." *Proceedings of the National Academy of Sciences* 108:2693–98. doi:10.1073/pnas.1010076108.

Morean, Meghan, DeMartini Kelly, Robert Leeman, Godfrey Pearlson, Alan Anticevic, Suchitra Krishnan-Sarin, and Stephanie O'Malley. 2014. "Psychometrically Improved, Abbreviated Versions Of Three Classic Measures Of Impulsivity And Self-Control." *Psychological Assessment* 26:1003–20. doi:10.1037/pas0000003.

Muftić, Lisa and Alexander Updegrove. 2018. "The Mediating Effect Of Self-Control On Parenting And Delinquency: A Gendered Approach With A Multinational Sample." *International Journal of Offender Therapy and Comparative Criminology* 62:3058–76. doi:10.1177/0306624X17725732.

Nebioglu, Melike, Numan Konuk, Sirri Akbaba, and Yuksel Eroglu. 2013. "The Investigation Of Validity And Reliability Of The Turkish Version Of The Brief Self-Control Scale." *Bulletin of Clinical Psychopharmacology* 22:340–51. doi:10.5455/bcp.20120911042732.

Olate, René, Christopher Salas-Wright, Michael Vaughn, and Yu. Mansoo. 2015. "Preventing Violence Among Gang-Involved And High-Risk Youth In El Salvador: The Role Of School Motivation And Self-Control." *Deviant Behavior* 36:259–75. doi:10.1080/01639625.2014.9243644.

Ozaki, Yuka, Takayuki Goto, Mai Kobayashi, and Gaku Kutsuzawa. 2016. "Reliability And Validity Of The Japanese Translation Of Brief Self-Control Scale (BSCS-J)." *The Japanese Journal of Psychology* 87:144–54. doi:10.4992/jjpsy.87.14222.

Palma, Victor, Pedro Pechorro, Saul Jesus, and C. Cristina Nunes. submitted. "Psychometric Properties Of The Oregon Adolescent Depression Project Conduct Disorder Screener Among Portuguese Youths."

Patrick, C. J., D. C. Fowles, and R. F. Krueger. 2009. "Triarchic Conceptualization of Psychopathy: Developmental origins of Disinhibition, boldness, and meanness." *Development and Psychopathology* 21:913–938. doi: 10.1017/S0954579409000492.

Pechorro, Pedro, Matt DeLisi, Isabel Alberto, James Ray, and Simões. Mário. 2019a. "The Triarchic Model Of Psychopathy Among Incarcerated Male Youths: A Psychometric Study." Pp. 265–75 in *Routledge International Handbook of Psychopathy and Crime*, edited by Matt DeLisi. New York, NY: Routledge,

Pechorro, Pedro, Justin Russell, Lara Ayala-Nunes, Rui Gonçalves, and Cristina Nunes. 2018. "The Brief Peer Conflict Scale: Psychometric Properties Among A Sample Of Incarcerated Male Juvenile Offenders." *International Journal of Offender Therapy and Comparative Criminology* 62:2414–29. doi:10.1177/0306624X17719299.

Pechorro, Pedro, Katinea Moreira, Miguel Basto-Pereira, João Oliveira, and James Ray. 2019c. "The Self-Report Delinquency Scale From The National Longitudinal Study Of Adolescent To Adult Health Among At-Risk For Delinquency Youths." *Violence and Victims* 34:120–35. doi:10.1891/0886-6708.VV-D-17-00165.

Pechorro, Pedro, Matt DeLisi, James Ray, Isabel Alberto, and Simões. Mário. 2019b. "A Brief Measure Of The Triarchic Model Of Psychopathy Among Community Youths: Psychometrics And Measurement Invariance." *Psychology, Crime and Law* 25:977–91. doi:10.1080/1068316X.2019.1597095.

Pechorro, Pedro, Nicole Hayes, Mariana Gonçalves, Victor Palma, Rui Gonçalves, and Monica Marsee. Submitted. "Portuguese Validation Of The Brief Peer Conflict Scale: Validity, Reliability And Invariance Across Gender."

Pechorro, Pedro, Peter Jonason, Vanessa Raposo, and João Maroco. In press. "Dirty Dozen: A Concise Measure Of Dark Triad Traits Among At-Risk Youths." *Current Psychology*. doi:10.1007/s12144-019-00288-9.

Pechorro, Pedro, Rebecca Revilla, Victor Palma, Rui Gonçalves, and Melissa Cyders. Submitted. "Examination Of The SUPPS-P Impulsive Behavior Scale Among Male And Female Youth: Psychometrics And Invariance."

Pratt, Travis, Jillian Turanovic, Kathleen Fox, and Kevin Wright. 2014. "Self-Control And Victimization: A Meta-Analysis." *Criminology* 52:87–116. doi:10.1111/1745-9125.12030.

Putnick, Diane and Mark Bornstein. 2016. "Measurement Invariance Conventions And Reporting: The State Of The Art And Future Directions For Psychological Research." *Developmental Review* 41:71–90. doi:10.1016/j.dr.2016.06.004.

Romer, Dan, Angela Duckworth, Sharon Sznitman, and S. Sunhee Park. 2010. "Can Adolescents Learn Self-Control? Delay of Gratification in the Development of Control over Risk Taking." *Prevention Science* 11:319–30. doi:10.1007/s11121-010-0171-8.

Russell, Justin. 2014. *The Structure of Child and Adolescent Aggression: Validation of a Brief Peer Conflict Scale.* University of New Orleans, New Orleans, LA. Retrieved on 6 June 2019 from http://scholarworks.uno.edu/td/1892

Sacarellos, Catherine, John Wright, Nora Almosaed, Sameera Moghrabi, Fawzia Bashatah, and Mark Morgan. 2016. "Crime In The Kingdom: The Effects Of Low Self-Control In A Saudi Arabian Sample Of Youth." *Youth Violence and Juvenile Justice* 14:291–312. doi:10.1177/1541204015616663.

Shekarkhar, Zahra and Chris Gibson. 2011. "Gender, Self-Control, And Offending Behaviors Among Latino Youth." *Journal of Contemporary Criminal Justice* 27:63–80. doi:10.1177/1043986211402224.

Shulman, Elizabeth, K., Paige Harden, Jason Chein, and Laurence Steinberg. 2015. "Sex Differences In The Developmental Trajectories Of Impulse Control And Sensation-Seeking From Early Adolescence To Early Adulthood." *Journal of Youth and Adolescence* 44:1–17. doi:10.1007/s10964-014-0116-9.

Simões, M. 2000. *Investigações No Âmbito Da Aferição Nacional Do Teste Das Matrizes Progressivas Coloridas De Raven [Investigations In The Context Of The National Standardization Of The Raven Coloured Progressive Matrices Test].* Lisboa: Fundação Calouste Gulbenkian.

Siqueira, Luciana and S. Solange Wechsler. 2006. "Motivação Para A Aprendizagem Escolar: Possibilidades De Medida [Motivation For School Learning: Measurement Possibilities]." *Avaliação Psicológica* 5:21–31.

Tangney, June, Roy Baumeister, and Angie Boone. 2004. "High Self-Control Predicts Good Adjustment, Less Pathology, Better Grades, And Interpersonal Success." *Journal of Personality* 72:271–324. doi:10.1111/j.0022-3506.2004.00263.x.

Thaler, Richard and Hersh Shefrin. 1981. "An Economic Theory Of Self-Control." *Journal of Political Economy* 89:392–406. doi:10.1086/260971.

Turanovic, Jillian, Michael Reisig, and Travis Pratt. 2015. "Risky Lifestyles, Low Self-Control, And Violent Victimization Across Gendered Pathways To Crime." *Journal of Quantitative Criminology* 31:183–206. doi:10.1007/s10940-014-9230-9.

Udry, J. Richard. 2003. *The National Longitudinal Study Of Adolescent Health (Add Health), Waves I And II, 1994–1996; Wave III, 2001–2002.* Chapel Hill: Carolina Population Center, University of North Carolina at Chapel Hill.

Van de Vijver, Fons. 2016. "Test Adaptations." Pp. 364–76 in *The ITC International Handbook Of Testing And Assessment,* edited by Frederick Leong, Dave Bartram, Fanny Cheung, Kurt Geisinger, and Dragos Iliescu. New York, NY: Oxford University Press,

Vaughn, Michael, Matt DeLisi, Kevin Beaver, and John Wright. 2009. "Identifying Latent Classes Of Behavioral Risk Based On Early Childhood Manifestations Of Self-Control." *Youth Violence and Juvenile Justice* 7:16–31. doi:10.1177/154204008324911.

Vazsonyi, Alexander and Gabriela Jiskrova. 2018. "On The Development Of Self-Control And Deviance From Preschool To Middle Adolescence." *Journal of Criminal Justice* 56:60–69. doi:10.1016/j.jcrimjus.2017.08.005.

Vazsonyi, Alexander, Jakub Mikuška, and Erin Kelley. 2017. "It's Time: A Meta-Analysis On The Self-Control-Deviance Link." *Journal of Criminal Justice* 48:48–63. doi:10.1016/j.jcrimjus.2016.10.001.

Vazsonyi, Alexander and Lara Belliston. 2007. "The Family→ Low Self-Control→ Deviance: A Cross-Cultural And Cross-National Test Of Self-Control Theory." *Criminal Justice and Behavior* 34:505–30. doi:10.1177/0093854806292299.

Vazsonyi, Alexander, Lloyd Pickering, Marianne Junger, and Dick Hessing. 2001. "An Empirical Test Of A General Theory Of Crime: A Four-Nation Comparative Study Of Self-Control And The Prediction Of Deviance." *Journal of Research in Crime and Delinquency* 38:91–131. doi:10.1177/0022427801038002001.

Walters, Glenn. 2001. "Behavioral Self-Control Training For Problem Drinkers: A Meta-Analysis Of Randomized Control Studies." *Behavior Therapy* 31:135–49. doi:10.1016/s0005-7894(00)8008-8.

Walters, Glenn. 2016. "Are Behavioral Measures Of Self-Control And The Grasmick Self-Control Scale Measuring The Same Construct? A Meta-Analysis." *American Journal of Criminal Justice* 41:151–67. doi:10.1007/s12103-015-9317-3.

Ward, Jeffrey, James Ray, and Kathleen Fox. 2018. "Exploring Differences In Self-Control Across Sex, Race, Age, Education, And Language: Considering A Bifactor MIMIC Model." *Journal of Criminal Justice* 56:29–42. doi:10.1016/j.jcrimjus.2017.09.006.

Weng, Xue and Wing Chui. 2018. "Assessing Two Measurements Of Self-Control For Juvenile Delinquency In China." *Journal of Contemporary Criminal Justice* 34:148–67. doi:10.1177/1043986218761932.

Wolff, Kevin and Michael Baglivio. 2017. "Adverse Childhood Experiences, Negative Emotionality, And Pathways To Juvenile Recidivism." *Crime and Delinquency* 63:1495–521. doi:10.1177/0011128715627469.

Wright, John, Mark Morgan, Pedro Almeida, Nora Almosaed, Sameera Moghrabi, and Fawzla Bashatah. 2017. "Malevolent Forces Self-Control, The Dark Triad, And Crime." *Youth Violence and Juvenile Justice* 15:191–215. doi:10.1177/1541204016667995.