The DSM-5 Limited Prosocial Emotions subtype of Conduct Disorder in

incarcerated male and female juvenile delinquents

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Abstract

The aim of the present study was to analyze the relevance of the DSM-5's Conduct Disorder new Limited Prosocial Emotions (CD LPE) specifier in incarcerated juvenile delinquents. A sample of 201 males and 98 females from the Juvenile Detention Centers managed by the Portuguese Ministry of Justice diagnosed with conduct disorder (CD) was used. Results showed that male juvenile delinquents with the CD LPE specifier scored higher on callous-unemotional traits (CU), general psychopathic traits, psychopathy taxon membership, self-reported delinquency, and crime seriousness, and lower on prosocial behavior and social desirability, while female juvenile delinquents with the CD LPE specifier scored higher on callous-unemotional traits (CU) and general psychopathic traits, and lower on prosocial behavior. Significant associations for both genders were found between the CD LPE specifier and age of crime onset and first problems with the law.

Keywords: Callous-unemotional; Conduct Disorder; DSM-5; Limited Prosocial Emotions specifier; Juvenile delinquency

Of the several recent attempts to extend the concept of psychopathy downward to youth, one approach has specifically focused on those traits associated with the affective components of psychopathy or callous-unemotional (CU) traits (Feilhauer & Cima, 2013; Hare & Neumann, 2008). CU traits are characterized by a lack of guilt and remorse, a lack of concern for the feelings of others, shallow or superficial expression of emotions, and a lack of concern regarding performance in important activities (Frick, 2009; Frick, Ray, Thornton, & Kahn, 2013). Consistent with the adult literature, research has suggested that those youth with elevated levels of CU traits are a particularly important subgroup of antisocial youth that tends to engage in more severe and persistent types of antisocial behaviors and also show especially poor treatment responses compared to other antisocial youth (Edens, Campbell, & Weir, 2007; Frick, 2009; Frick & White, 2008; Salekin & Lynam, 2010).

CU traits seem to be associated with an earlier onset to severe conduct problems and with a more stable pattern of conduct problems (e.g., Dandreaux & Frick, 2009; Rowe et al., 2010). Youth with elevated CU traits display more severe forms of aggression and more instrumental and premeditated aggression compared to other youth with severe conduct problems (e.g., Kruh et al., 2005; Lawing et al., 2010). Also, antisocial youth with elevated levels of CU traits have diminished responses to negative emotions (e.g., signs of distress or fear in others), are less responsive to cues of punishment particularly when reward dominant response sets are primed, and show distinct personality characteristics such as lower levels of anxiety (Frick et al., 2013).

According to Frick and White (2008), research suggests that although CU traits are associated with conduct problems, aggression, and delinquency, they appear to be less highly correlated than the other dimensions of psychopathy (i.e., narcissism, impulsivity) with measures of conduct problems in different samples of youth. Some

studies (e.g., Caputo et al., 1999; Kimonis, Frick, Fazekas, & Loney, 2006; Loney et al., 2003) have demonstrated that the impulsivity and narcissistic dimensions of psychopathy were higher in youths with severe patterns of criminal offending or with childhood-onset conduct problems, but it was the CU dimension that identified particularly severe and aggressive youths with serious conduct problems showing distinct deficits in their emotional or cognitive response styles within those with serious conduct problems. Thus, CU traits have clinical relevance for identifying a subgroup of antisocial youth with unique etiologies and particularly severe and persistent behavior problems, and who is at risk for later antisocial and delinquent behavior.

Conduct Disorder (CD) is one of the most extensively studied of all forms of childhood psychopathology (Frick & Dickens, 2006). CD can be defined as a repetitive and persistent pattern of behavior that violates the rights of others (e.g., aggression. vandalism. theft) or that violates major age-appropriate societal norms or rules (e.g., deceitfulness, truancy, and running away from home). Between 3% and 5% of pre-adolescent boys and between 6% and 8% of adolescent boys meet criteria for the disorder, with boys outnumbering girls approximately 4:1 before adolescence to approximately 2:1 in adolescence, depending on the exact definition of CD (Frick & Dickens, 2006).

An impressive amount of new information about CD has emerged ever since the DSM-IV appeared in 1994. According to Moffitt et al. (2008), some new biological correlates of CD have been discovered and longitudinal cohorts studies launched in the last decades are showing interesting conduct-problem trajectories from early childhood to mid-life. Girls, who had been formerly overlooked in CD research, have been receiving some research attention in the past years. Progress in genetics research has also recently revived enthusiasm about the potential of family psychiatric-history data

for understanding CD. Scientific advances like these change the way researchers and clinicians conceptualize CD, and create pressure in terms of altering the diagnostic protocol for CD (Moffitt et al., 2008).

The inclusion of CU traits as a specifier for CD in the Fifth Edition of the Diagnostic and Statistical Manual for Mental Disorders (DSM-5; American Psychiatric Association, 2013) has been prompted by an extensive empirical basis (Barry et al., 2013; Frick & Moffitt, 2010). The specifier "with Limited Prosocial Emotions" (LPE) will be used to designate those individuals who are diagnosed with conduct disorder and who also show two of four CU characteristics (i.e., lack of remorse or guilt, callous-lack of empathy, unconcern about performance in important activities, and shallow or deficient affect) in two or more settings (e.g., school, home).

The recent inclusion of the specifier highlights the need for research that focuses on advancing the measurement of CU traits. Some very recent studies have already began such endeavors (e.g., Colins & Vermeiren, 2013; Hawes et al., 2014; Kimonis et al., 2014; Pardini et al., 2012), but much more research is needed to better understand how to best capture these traits for both clinical and research purposes. More research is also needed into girls with CU traits because most studies focus just on boys, and it is not clear whether CU traits or psychopathy ratings tap the same latent constructs in boys and girls (Kunimatsu, Marsee, Lau, & Fassnacht, 2012; Moffitt et al., 2008). Research is also needed to ascertain whether CU traits and other psychopathic traits have good construct validity among ethnic minority children and youths (Verona, Sadeh, & Javdani, 2010).

Callous-unemotional traits are quickly becoming an important area of study, but there is a lack of research on this topic, especially in European samples. To our knowledge this is the first study examining DSM-5's new CD LPE specifier and CU

traits in a large forensic sample of Portuguese adolescents. Bearing in mind the theoretical framework mentioned above, this study aimed to test two hypotheses: a) male and female juvenile delinquents with the CD LPE specifier show significantly higher values of CU traits, general psychopathic traits, psychopathy taxon membership, self-reported delinquency, and crime seriousness, and lower values of prosocial behavior, self-esteem, and social desirability; b) independently of gender, the CD LPE specifier is significantly associated with age of crime onset and first problems with the law.

Method

Participants

The male sample was made up of 201 participants (M = 15.83 years; SD = 1.30 years; range = 13–18 years) diagnosed with Conduct Disorder recruited from Juvenile Detention Centers; of this total, 63 participants formed the group with the LPE specifier (LPE group; M = 15.67 years; SD = 1.28 years; age range = 14–18 years) and 138 participants formed the group without the LPE specifier (No LPE group; M = 15.89 years; SD = 1.31 years; age range = 13–18 years). The female sample was made up of 98 participants (M = 15.96 years; SD = 1.28 years; age range = 14–18 years) diagnosed with Conduct Disorder recruited from Juvenile Detention Centers; of this total, 29 participants formed the group with the LPE specifier (LPE group; M = 16.28 years; SD = 1.25 years; age range = 14–18 years) and 69 participants formed the group without the LPE specifier (No LPE group; M = 15.83 years; SD = 1.28 years; age range = 14–18 years).

Instruments

The Antisocial Process Screening Device–Self-report (APSD-SR; Frick & Hare, 2001; Muñoz & Frick, 2007) is a multi-dimensional 20-item measure designed to assess psychopathic traits in adolescents. It was modeled after the Psychopathy Checklist - Revised (PCL-R; Hare, 2003). Each item (e.g., "You lie easily and skillfully") is scored on a 3-point ordinal scale (Never = 0, Sometimes =1, Often = 2); higher scores mean 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 et al., 1994) reported two main factors: callous/unemotional traits (CU, tapping interpersonal and affective dimensions of psychopathy, such as lack of guilt and absence of empathy) and an impulsivity/conduct problems factor (I-CP, tapping behavioral aspects of conduct problems and impulse control problems). Another study (Frick, Barry, & Bodin, 2000) in a community sample reported three main factors: callous/unemotional traits factor (CU) and an I-CP factor which is subdivided into two further factors, namely narcissism (Nar) and impulsivity (Imp). Higher scores indicate an increased presence of the characteristics associated with each factor. The Portuguese version of the APSD-SR was used (Pechorro, Marôco, Poiares, & Vieira, 2013). The internal consistency for the male sample of the present study, estimated by Cronbach's alpha, was: APSD-SR total = .70, APSD-SR I-CP = .76, APSD-SR CU = .53. For the female sample the internal consistency was: APSD-SR total = .75, APSD-SR I-CP = .80, APSD-SR CU = .59.

The Child and Adolescent Taxon Scale (CATS; Quinsey, Harris, Rice, & Cormier, 2006) is an actuarial rating scale developed from variables related to childhood and adolescent antisocial and aggressive characteristics (e.g., "Childhood aggression problem"). This scale has eight items scored either 0 (*no*) or 1 (*yes*) that can discriminate between two classes: psychopaths and non-psychopaths. The total score is

obtained by adding the items with the Nuffield system for determining item weights. Higher scores mean higher psychopathic characteristics. Because the CATS is an actuarial scale no internal consistency was calculated.

The Strengths and Difficulties Questionnaire–Self-response (SDQ-SR; Goodman, Meltzer,& Bailey, 1998) is a short behavioral questionnaire aimed at pre-adolescents and adolescents made up of 25 items (e.g., "I am kind to younger children"), rated on a 3-point ordinal scale (Never = 0, Somewhat true= 1, Often =2). The SDQ consists of five dimensions: Emotional symptoms (ES), Conduct problems (CP), Hyperactivity (H), Peer problems (PP), and Prosocial behavior (P). The scores for emotional symptoms, conduct problems, hyperactivity and peer problems are summated to generate a total difficulties score (TDS) ranging from 0 to 40; the prosocial score is not incorporated into the TDS since the absence of prosocial behaviors is conceptually different from the presence of psychological difficulties. The official Portuguese translation of the SDQ-SR was used (Pechorro, Poiares, & Vieira, 2011). Internal consistency for the male sample of present study, estimated by Cronbach's alpha, was: SDQ-SR TDS = .61, SDQ-SR P = .67. For the female sample it was: SDQ-SR TDS = .60, SDQ-SR P = .57. These values are somewhat low but still acceptable for research purposes (DeVellis, 1991).

The Adapted Self-Reported Delinquency Scale (ASRDS; Carroll, Durkin, Houghton, & Hattie, 1996; Carroll, Houghton, Durkin, & Hattie, 2009) is a self-report measure consisting of 38 items (e.g., "Stolen and driven a car") which assesses adolescent involvement in illegal and antisocial activities. The ASRDS score can be obtained by adding the items from a 3-point ordinal scale (Never = 0, Sometimes = 1, Frequently = 2), where higher scores signify greater involvement in criminal activities. A Portuguese version of the ASRDS was used. Pechorro (2011) was able to

demonstrate psychometric properties that justify its use with the Portuguese adolescent population in terms of factorial validity, internal consistency (Cronbach's α = .96), temporal stability (r = .88; $p \leq$ .01), discriminant validity (Λ Wilks = .51; χ^2 = 508.88; $p \leq$ .001), divergent validity (r = -.13; $p \leq$ .01), convergent validity (r = .66; $p \leq$ .01), concurrent validity (r_{pb} = .40; $p \leq$ .01), retrospective validity (r = -.44; $p \leq$ .01), cutoff score (CS = 16, sensibility = 86.4%, specificity = 85.5%, ROC = .86), corrected item-total correlation (range = .32 − .80) and average inter-item correlation (.38). For this study the internal consistency, estimated by Cronbach's alpha, regarding the male sample was .92, and .90 regarding the female sample.

The Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1989) is a brief self-report measure that evaluates self-esteem in adolescents and adults. The RSES can be scored by simply adding the ten items on a 4-point ordinal scale (Strongly disagree = 0, Disagree = 1, Agree = 2, Strongly agree =3) after reversing the appropriate items (namely, items 2, 5, 6, 8 and 9). Higher scores indicate higher levels of self-esteem. A Portuguese version of the RSES was used (Pechorro, Marôco, Poiares, & Vieira, 2011). Internal consistency for the present study, estimated by Cronbach's alpha, was .76 for the male sample, and .66 for the female sample.

The Marlowe-Crowne Social Desirability Scale (MCSDS; Crowne & Marlowe, 1960) short composite (MCSDS-SF) version was designed by Ballard (1992) from the original Marlowe-Crowne scale; it is recognized as a composite sub-scale and is currently probably the most used of all the subscales that have been derived from the original MCSDS items (e.g., "I sometimes feel resentful when I don't get my way"). A Portuguese version of the MCSDS-SF, especially translated and adapted for adolescents, was used (Pechorro, Vieira, Poiares, & Marôco, 2012). Internal consistency for the present study (using a 12 items version of the MCSDS-SF), estimated by Kuder-

Richardson coefficient, was .61 for the male sample and .57 for the female sample. These value are somewhat are low but still acceptable for research purposes (DeVellis, 1991).

The delinquency seriousness classification of the official court reports was guided by the Sellin-Wolfgang Index of Crime Seriousness (ICS; Wolfgang et al., as cited in White et al., 1994). Level 0 consisted of no delinquency. Level 1 consisted of minor delinquency committed at home, such as stealing minor amounts of money from mother's purse. Level 2 consisted of minor delinquency outside the home including shoplifting something worth less than €5, vandalism and minor fraud (e.g., not paying bus fare). Level 3 consisted of moderately serious delinquency such as any theft over €5, gang fighting, carrying weapons, and joyriding. Level 4 consisted of serious delinquency such as car theft and breaking and entering. Level 5 consisted of having performed at least two of each of the behaviors in level 4 or violent crimes against other people.

In addition, a questionnaire was constructed to describe the socio-demographic and criminal characteristics of the participants. This questionnaire included questions about participants' age, nationality, ethnic group, rural *versus* urban origin, years of schooling completed, socio-economic status, parents' marital status, nationality, number of siblings/half-siblings, taking of psychiatric drugs, age of first transgression, age of first problem with the law, and age of first entry into a Juvenile Detention Center. Socio-economic status was measured by a combination of the parent's level of education and profession, appropriate to the Portuguese reality (Simões, 1994).

Procedures

The age range for youth participation in the study was previously set between 12 and 18 years since this is the age range when young people are amenable to interventions under the Portuguese judicial system's Educational Guardianship Act (*Lei Tutelar-Educativa*) and can be diagnosed as having conduct disorder. We chose to use male and female participants, although there is a relative scarcity of girls admitted to the Portuguese Juvenile Detention Centers (*Centros Educativos*). Each questionnaire was preceded by an informed consent form, in which participants were informed of the voluntary and confidential nature of participation in the study.

Collection of questionnaires was carried out individually after obtaining authorization from the General Directorate of Reintegration and Prison Services – Ministry of Justice (*Direção-Geral de Reinserção e Serviços Prisionais – Ministério da Justiça*). All the detainees from the Juvenile Detention Centers managed by the Portuguese Ministry of Justice were informed about the nature of the study and asked to participate. The participation rate was around 91%. Not all young people agreed or were able to participate; reasons included refusal to participate (5%), inability to participate due to not understanding the language (2%) and inability to participate due to security issues (2%). The directors of each Detention Center collaborated personally with the main author of this study in order to motivate youths to participate in the study, clarifying any questions that arose regarding participation. No material incentives to encourage participation were given, but the fact that Detention Centers' directors were personally involved in encouraging participation might have contributed to increase the participation rate. All questionnaires of those who participated were appropriately completed. The collected information was based on youth self-report, interview, and judicial file review.

Questionnaire data which were considered valid (i.e., appropriately completed by participants diagnosed with conduct disorder and within the selected age range) were analyzed using SPSS v22 (IBM SPSS, 2013). Following data entry, 50% of the questionnaires were randomly selected so as to evaluate the quality of their entry. The quality was considered very good as practically no entry errors were detected. Consistent with the proposed subtyping scheme for DSM-5, participants who exhibited at least two of the four symptoms of Limited Prosocial Emotions (LPE) were diagnosed as having the subtype. It was found that proportionately less participants (31.34% of boys, and 29.6% of girls) were diagnosed with the LPE subtype of CD (APA, 2013). Then the two types of groups were formed based on the presence or absence of the new LPE specifier.

ANOVAs were used to compare groups when the assumptions of normality (skewness and kurtosis between -2 and 2) and homogeneity of variance were validated; Welch's ANOVA was used when the assumptions of normality were validated but group variances were heterocedastic. Mann-Whitney's *U* test was used when the variables were ordinal or when the data clearly violated both the assumption of normality and homogeneity of variance (Leech, Barrett, & Morgan, 2008). The Chi-square test was used to compare nominal variables. Point-bisserial correlations were used to analyze the association between nominal dichotomous variables and scale variables. The results were considered significant if $p \leq .05$ and marginally significant if $p \leq .1$ (Aron, Coups, & Aron, 2013).

Effect size and power calculations were made (as described in Marôco, 2010) to clarify the degree of accuracy/reliability of the statistical judgments and the strength of the relationship between the variables. The following values were obtained regarding the male groups: APSD-SR Total ($\eta_p^2 = .10$; power = .98); APSD-SR I-CP ($\eta_p^2 = .00$;

power = .13); APSD-SR CU (η_p^2 = .35; power = .99); CATS (η_p^2 = .04; power = .77); SDQ-SR TDS (η_p^2 = .01; power = .24); SDQ-SR P (η_p^2 = .07; power = .96); ASRDS (η_p^2 = .03; power = .75); ICS (η_p^2 = .04; power = .84); RSES (η_p^2 = .00; power = .12); MCSDS-SF (η_p^2 = .04; power = .76). Regarding the female groups the values were: APSD-SR Total (η_p^2 = .11; power = .92); APSD-SR I-CP (η_p^2 = .00; power = .09); APSD-SR CU (η_p^2 = .47; power = 1); CATS (η_p^2 = .02; power = .23); SDQ-SR TDS (η_p^2 = .00; power = .07); SDQ-SR P (η_p^2 = .07; power = .86); ASRDS (η_p^2 = .01; power = .11); ICS (η_p^2 = .03; power = .35); RSES (η_p^2 = .11; power = .28); MCSDS-SF (η_p^2 = .01; power = .13).

Results

In the initial phase of data treatment, variables of the socio-demographic questionnaire were analyzed. No statistically significant differences were found between the LPE and the No LPE male groups regarding the variables age (F = 2.451; p = .12), ethnicity (χ^2 = .653; p =.45), years of schooling completed (F = 1.335; p = .25), socio-economic level (U = 2619; p = .39), parents' marital status (χ^2 = 8.201; p = .08), number of siblings/half-siblings (F_W = 2.341; p = .13), nationality (χ^2 = .520; p = .81), rural *versus* urban origin. (χ^2 = .447; p = .68), and the taking of psychiatric drugs (χ^2 = .023; p = 1). No statistically significant differences were found between the LPE and the No LPE female groups regarding the variables age (F = 2.547; p = .12), ethnicity (χ^2 = .68; p =.89), years of schooling completed (F = .573; p = .45), socio-economic level (U = 592.5; p = .49), parents' marital status (χ^2 = 9.375; p = .052), number of siblings/half-siblings (F = 1.715; p = .19), nationality (χ^2 = 6.82; p = .07), rural *versus* urban origin. (χ^2 = .425; p = .70), and the taking of psychiatric drugs (χ^2 = 1.909; p = .23).

The criminal variables were then analyzed. Results showed statistically significant differences between the LPE and the No LPE male groups regarding age of crime onset ($F = 5.784$; $p \leq .05$) and age of first problem with the law ($F = 6.579$; $p \leq .05$), but no differences were found regarding age of first entry into a Juvenile Detention Center ($F = 2.178$; $p = .14$), indicating that the male participants from the LPE group had an earlier onset of criminal activities and had their first problem with the law earlier in life. The results of the criminal variables showed statistically significant differences between the LPE and the No LPE female groups regarding age of crime onset ($F = 4.52$; $p \leq .05$) and age of first problem with the law ($F = 4.204$; $p \leq .05$), but no differences were found regarding age of first entry into a Juvenile Detention Center ($F = .16$; $p = .69$), indicating that the female participants from the LPE group had an earlier onset of criminal activities and had their first problem with the law earlier in life.

Regarding the psychometric measures, statistically significant differences were found when comparing the CD no LPE and the CD LPE male groups (see Table 1).

Table 1

Descriptive statistics, ANOVAs and U Test for the DSM-5 CD no LPE and LPE male groups

	DSM-5 CD no LPE male group	DSM-5 CD LPE male group	*F* or *U* and *p* value*
APSD-SR total			$F = 23.04$
M (SD)	14.49 (4.55)	17.92 (5.02)	$p \leq .001$
APSD-SR I-CP			$F = .699$
M (SD)	10.09 (4.19)	10.65 (4.91)	$p = .40$
APSD-SR CU			$F = 109.259$
M (SD)	4.40 (1.90)	7.27 (1.58)	$p \leq .001$
CATS			$F_W = 8.098$
M (SD)	6.55 (1.01)	6.95 (.89)	$p \leq .01$
SDQ-SR TDS			$F = 1.547$
M (SD)	15.70 (4.56)	14.84 (4.54)	$p = .22$
SDQ-SR P			$F = 14.324$
M (SD)	7.63 (1.90)	6.52 (1.97)	$p \leq .001$
ASRDS			$F = 7.032$
M (SD)	30.62 (12.56)	35.78 (13.28)	$p \leq .01$
ICS			$U = 3296.5$
MR (IR)	93.39 (2)	117.67 (2)	$p \leq .01$
RSES			$F = .561$
M (SD)	20.08 (4.60)	20.62 (5.02)	$p = .46$
MCSDS-SF			$F = 7.275$
M (SD)	18.05 (2.24)	17.13 (2.28)	$p \leq .01$

Note. DSM-5 CD LPE = DSM-5 Conduct Disorder Limited Prosocial Emotions subtype diagnosis; APSD-SR = Antisocial Process Screening Device Self-report; APSD-SR I-CP = Impulsivity-Conduct Problems dimension; APSD-SR CU = Callous-Unemotional dimension; CATS = Child and Adolescent Taxon Scale; SDQ-SR = Strengths and Difficulties Questionnaire–Self-report; SDQ-SR TDS = Total Difficulties Score; SDQ-SR P = Prosocial Behavior; ASRDS = Adapted Self-Report Delinquency Scale; ICS = Index of Crime Seriousness; MCSDS-SF = Marlowe–Crowne Social Desirability Scale–Short Form

*ANOVA or *U* Mann-Whitney Test (Exact sig. 2-tailed); F_W = Welch's ANOVA; *M* = Mean; *SD* = Standard-deviation; *MR* = Mean Rank; *IR* = Interquartile Range

Some statistically significant differences were found when comparing the CD no LPE and the CD LPE female groups regarding the psychometric measures (see Table 2).

Table 2

Descriptive statistics, ANOVAs and U Test for the DSM-5 no LPE and LPE female groups

	DSM-5 CD no LPE female group	DSM-5 CD LPE female group	*F* or *U* and *p* value*
APSD-SR total			$F_W = 8.78$
M (SD)	14.09 (4.75)	18.17 (6.76)	$p \leq .01$
APSD-SR I-CP			$F = .319$
M (SD)	11.30 (4.48)	11.93 (6.12)	$p = .57$
APSD-SR CU			$F = 85.256$
M (SD)	2.78 (1.74)	6.24 (1.57)	$p \leq .001$
CATS			$F = 1.518$
M (SD)	6.52 (1.20)	6.21 (1.05)	$p = .22$
SDQ-SR TDS			$F_W = .156$
M (SD)	16.04 (3.57)	15.61 (5.15)	$p = .70$
SDQ-SR P			$F = 9.578$
M (SD)	8.78 (1.08)	7.82 (1.68)	$p \leq .01$
ASRDS			$F_W = .406$
M (SD)	25.41 (8.76)	23.79 (11.83)	$p = .53$
ICS			$U = 820.5$
MR (IR)	52.11 (3)	43.29 (2)	$p = .15$
RSES			$F = 1.905$
M (SD)	19.84 (4.29)	21.18 (3.76)	$p = .17$
MCSDS-SF			$F_W = .625$
M (SD)	18.08 (1.91)	18.50 (2.44)	$p = .43$

Note. DSM-5 CD LPE = DSM-5 Conduct Disorder Limited Prosocial Emotions subtype diagnosis; APSD-SR = Antisocial Process Screening Device Self-report; APSD-SR I-CP = Impulsivity-Conduct Problems dimension; APSD-SR CU = Callous-Unemotional dimension; CATS = Child and Adolescent Taxon Scale; SDQ-SR = Strengths and Difficulties Questionnaire–Self-report; SDQ-SR TDS = Total Difficulties Score; SDQ-SR P = Prosocial Behavior; ASRDS = Adapted Self-Report Delinquency Scale; ICS = Index of Crime Seriousness; MCSDS-SF = Marlowe–Crowne Social Desirability Scale–Short Form

*ANOVA or *U* Mann-Whitney Test (Exact sig. 2-tailed); F_W = Welch's ANOVA; *M* = Mean; *SD* = Standard-deviation; *MR* = Mean Rank; *IR* = Interquartile Range

To assess the individual associations of the DSM-5 Conduct Disorder Limited Prosocial Emotions (APA, 2013) subtype diagnosis (coded 0 = CD no LPE, 1 = CD LPE) with the other variables and measures we utilized point-bisserial correlations (see Table 3).

Table 3

Point-bisserial correlations of the DSM-5 Conduct Disorder Limited Prosocial Emotions subtype diagnosis with other variables and measures for males and females

r_{pb}	Male sample	*p* value	Female sample	*p* value
ACO	-.17	$p \le .05$	-.21	$p \le .05$
AFPL	-.18	$p \le .05$	-.21	$p \le .05$
AFEJDC	-.10	$p = .14$	.04	$p = .69$
APSD-SR total	.32	$p \le .001$	.33	$p \le .001$
APSD-SR I-CP	.06	$p = .40$	.06	$p = .57$
APSD-SR CU	.60	$p \le .001$	.69	$p \le .001$
CATS	.19	$p \le .01$	-.13	$p = .22$
SDQ-SR TDS	-.09	$p = .22$	-.05	$p = .66$
SDQ-SR P	-.26	$p \le .001$	-.33	$p \le .01$
ASRDS	.19	$p \le .01$	-.08	$p = .49$
ICS	.20	$p \le .01$	-.15	$p = .15$
RSES	.05	$p = .46$	.16	$p = .17$
MCSDS-SF	-.19	$p \le .01$	.10	$p = .40$

Note. r_{pb} = Point bisserial correlation; DSM-5 CD LPE = DSM-5 Conduct Disorder Limited Prosocial Emotions subtype diagnosis; ACO = age of crime onset; AFPL = age of first problem with the law; AFEJDC = age of first entry into a juvenile detention center; APSD-SR = Antisocial Process Screening Device - Self-report; APSD-SR I-CP = Impulsivity-Conduct Problems dimension; APSD-SR CU = Callous-Unemotional dimension; CATS = Child and Adolescent Taxon Scale; SDQ-SR = Strengths and Difficulties Questionnaire–Self-report; SDQ-SR TDS = Total Difficulties Score; SDQ-SR P = Prosocial Behavior; ASRDS = Adapted Self-Report Delinquency Scale; ICS = Index of Crime Seriousness; MCSDS-SF = Marlowe–Crowne Social Desirability Scale–Short Form

Discussion

The aim of our study was to examine the relevance of the new DSM-5 CD LPE specifier among incarcerated male and female Portuguese juvenile delinquents. We hypothesized that participants diagnosed with the CD LPE specifier would show significantly higher values of CU traits, general psychopathic traits, psychopathy taxon membership, self-reported delinquency, and crime seriousness, and lower values of prosocial behavior, self-esteem, and social desirability. We also hypothesized that, independently of gender, the CD LPE specifier would be significantly associated with age of crime onset, and age of first problem with the law.

When comparing the male and female participants of the CD LPE group with the CD no LPE group regarding criminal variables, results showed that the participants from the LPE group had an earlier age of crime onset and were younger when they had their first problem with the law. These data are consistent with previous studies linking higher CU traits to earlier onset of antisocial activity and to earlier contacts with the police and other authorities (e.g., Dadds et al., 2005; Loeber et al., 2005; Pechorro et al., 2014), and reinforce the role of the interrelationship of CU traits with early criminal onset (e.g., Dandreaux & Frick, 2009; Rowe et al., 2010).

In comparisons between the male CD LPE group and the CD no LPE group regarding the psychometric measures statistically significant differences were mostly found. The male CD LPE group obtained significant higher values for CU traits (APSD-SR CU), general psychopathic traits (APSD-SR), psychopathy taxon membership (CATS), self-reported delinquency (ASRDS), and crime seriousness (ICS), and lower values for prosocial behavior (SDQ-SR P), and social desirability (MCSDS-SF). No differences were found in terms of general conduct problems (SDQ-SR TDS), and self-esteem (RSES). The fact that LPE group obtained a significantly higher values in terms of psychopathy taxon membership, self-reported delinquent behaviors, and crime severity is indicative of a greater frequency, diversity and severity of antisocial and criminal behaviors in this group. Such findings are consistent with the literature that describes the association between psychopathic traits and delinquent behaviors (e.g., Sevecke & Kosson, 2010; Van Baardewijk, Vermeiren, Stegge & Doreleijers, 2011), especially the CU dimension of psychopathic traits (e.g., Edens, Campbell, & Weir, 2007; Frick, 2009; Frick & White, 2008; Salekin & Lynam, 2010).

The low values obtained regarding prosocial behavior were expected due to the fact the LPE specifier in itself implies low prosociality when these individual are

diagnosed. With regard to social desirability it may seem like these results are counter-intuitive, as higher scores for social desirability could be expected in youths with high psychopathic traits so as to try to portray more positive images of themselves. However, Lilienfield and Fowler (2006) had already showed that psychopathic individuals frequently report the presence of socially devalued characteristics, such as antisocial behaviors, hostility and weak impulse control, reliably. Quite frequently it is wrongly considered that psychopathic individuals are supposedly more manipulative of their questionnaire answers, but there is no consistent empirical evidence that supports such a claim, only a few specific clinical observations. We found no differences in terms of general conduct problems (the main difference between our two groups was the presence of the LPE specifier, not the level of conduct problems/frequency of CD symptoms) and self-esteem, although some literature classically associates low self-esteem with a higher prevalence of antisocial behaviors (e.g., Caldwell, Beutler, Ross & Silver, 2006; Mason, 2001).

In comparisons between the female CD LPE group and the CD No LPE group regarding the psychometric measures few statistically significant differences were found. The female CD LPE group obtained significant higher values for CU traits (APSD-SR CU), and for general psychopathic traits (APSD-SR), and lower values for prosocial behavior (SDQ-SR P), but no differences were found in terms of psychopathy taxon membership (CATS), self-reported delinquency (ASRDS), crime seriousness (ICS), general conduct problems (SDQ-SR TDS), self-esteem (RSES), and social desirability (MCSDS-SF). Our findings seem to put into question the potential utility of the new LPE specifier regarding delinquent female youths. The higher level of CU traits and the lower level of prosocial behavior was expected due to the fact the LPE specifier

in itself implies high callousness-unemotionality and low prosociality when these individual are diagnosed.

We can conclude that the CD LPE specifier is indeed useful in the characterization of delinquent male youths, allowing the variables analyzed from this perspective to highlight a number of problematic issues that characterize them. However, the specifier seems to be less useful when we consider delinquent female youths. Therefore we consider there is evidence that supports our first initial hypothesis, specifically when considering male juvenile offenders.

With regard to the correlations of the CD LPE specifier with age of crime onset and age of first problem with the law we found they were statistically significant for both genders, reinforcing the role of the interrelationship of CU traits with early criminal onset (e.g., Dandreaux & Frick, 2009; Rowe et al., 2010). Significant correlations were also found with other variables (e.g., crime seriousness), at least regarding the male participants. There is therefore also evidence in this case which mostly confirms the hypothesis that was set. We must conclude that the new CD LPE specifier is important for the early identification of young people at potential high risk and for the rigorous assessment of young people who have already come into contact with the judicial system, thus helping to identify unique etiological pathways in the development of antisocial behavior and promoting an empirically grounded basis to guide interventions (Frick & White, 2008; Kotler & McMahon, 2005).

Our study is the first study examining the new DSM-5 CD LPE specifier in a sample of incarcerated Portuguese male and female youths. The identification of these serious and persistent juvenile delinquents allows some space to improve the therapeutic interventions in terms of costs/benefits given that it becomes possible to focus

particularly in them the very scarce available resources. The benefits of focusing interventions in these individuals should be assed in the future in terms of their recidivism rates. It is, however, necessary to point out some limitations of our study. The use of self-report measures and the low internal consistency of some scale dimensions (e.g., APSD-SR CU) were limitations in terms of measurement reliability. Another serious limitation was that we did not statistically control for age of CD onset and age of criminal onset, which are confounding variables that can seriously influence results and that future research in this area should control for.

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