

Psychopathic traits mediate the effects of neighbourhood risk on juvenile antisocial behaviour

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Abstract

Background: Research of the indirect effects of neighbourhood risk through psychopathic personality traits (i.e., impulsiveness, narcissism and callous-unemotional traits) on juvenile antisocial behaviour has become relevant. **Methods:** In the current study, mediation effects were assessed using a sample composed of 406 young people between 14 and 21 years old, 82.7% males, from juvenile centres in Galicia and Andalucía (Spain). **Results:** The results showed significant mediation effects of neighbourhood risk on antisocial behaviour through impulsiveness and callous-unemotional traits. **Conclusions:** The implications of the mediation effects for prevention, risk assessment, and risk management in juvenile offenders are discussed.

Keywords: Juvenile, antisocial behaviour, psychopathic traits, neighbourhood risk, mediation effects.

Resumen

Los rasgos psicopáticos median el efecto de la marginalidad social en la conducta antisocial juvenil. Antecedentes: el estudio de los efectos indirectos de la marginalidad social a través de los rasgos de personalidad psicopática (i.e., impulsividad, narcisismo y dureza-insensibilidad emocional) sobre el comportamiento antisocial juvenil ha cobrado gran relevancia. **Método:** en este estudio se analizan los efectos de mediación utilizando una muestra compuesta por 406 jóvenes de entre 14 y 21 años, el 82,7% hombres, de centros de menores en Galicia y Andalucía (España). **Resultados:** los resultados mostraron efectos de mediación significativos de la marginalidad sobre el comportamiento antisocial a través de la impulsividad y la dureza-insensibilidad emocional. **Conclusiones:** se discuten las implicaciones de los efectos de mediación para la prevención, evaluación y gestión del riesgo en jóvenes infractores.

Palabras clave: jóvenes, conducta antisocial, rasgos psicopáticos, marginalidad social, efectos de mediación.

Neighbourhood disorder has been shown in literature as one of the most relevant contextual variables for antisocial behaviour development. Nevertheless, the study of this variable has not always been clear, and terms such as marginality, poverty, and socioeconomic status (SES) have overlapped many times, resulting in an accumulation of research inconsistencies (Fabio, Chen, & Bazaco, 2013; Jennings & Fox, 2016). Many studies have found a significant direct effect of SES on a vast range of antisocial behaviours in adolescence, both violent and nonviolent (Farrington, Loeber, & Berg, 2012; Murry, Berkel, Gaylord-Harden, Copeland-Linder, & Nation, 2011), as well as persistence of this type of behaviours in adulthood (Fabio, Tu, Loeber, & Cohen, 2011; Mason et al., 2010).

However, it has been proposed that the main contextual influence lies not in social class or family income per se but in other marginality variables present in the neighbourhood, which

reflect the social collective efficacy (Freedman & Woods, 2013; Ingoldsby, Shelleby, Lane, & Shaw, 2012). Thus, other risk factors in the neighbourhood, such as violence, delinquency or a lack of resources, have shown significant direct relations with adolescent antisocial and criminal behaviour (Patchin, Huebner, McCluskey, Varano, & Bynum, 2006; Vanfossen, Brown, Kellam, Sokoloff, & Doering, 2010).

On another hand, empirical evidence has established direct effects of personality on violent and antisocial behaviour (Jolliffe, 2013; Jones, Miller, & Lynam, 2011). In particular, impulsiveness, narcissism, and callous-unemotional (CU) traits are especially important in the prediction of antisocial behaviour and criminal recidivism. Several researches found empirical support for the 3-factor model of adolescent psychopathic personality consisting of Impulsiveness, Narcissism, and CU traits (e.g., Frick, Kimonis, Dandreaux, & Farrell, 2003; Vitacco, Rogers, & Neumann, 2003). And, certainly, the psychopathic personality traits are one of the most robust predictors of aggressive and delinquent behaviours over life course (Asscher et al., 2011; Frick & White, 2008; Vaughn, Howard, & DeLisi, 2008).

In recent years, interest in the study of indirect effects between personality traits and the neighbourhood context on antisocial behaviour has increased substantially. Thus, currently the person-

environment classical duality has been overcome and a holistic and bioecological perspective has been established, taking into account the interactional effects of both variables (Bronfenbrenner & Morris, 2006; Magnusson & Stattin, 2006). It has been proven repeatedly that the environment has an undeniable effect on psychosocial adaptation or maladjustment (Eccles & Roeser, 2011; Foster & Brooks-Gunn, 2013), as well as on emotional and personality development (DeWall, Deckman, Pond, & Bonser, 2011; Leventhal, Dupéré, & Brooks-Gunn, 2009). Specifically, it has been proposed that residing in a high-crime neighbourhood, amongst other environmental factors, might influence the development of psychopathic personality traits (Farrington, Ullrich, & Salekin, 2010).

In that regard, some studies have analysed the existence of indirect effects between personality traits and neighbourhood context, showing contradictory results. In some cases, adolescents with greater impulsiveness and CU traits who reside in disadvantaged neighbourhoods show significantly higher levels of aggressive and violent criminal behaviours (e.g., Lynam et al., 2000; Markowitz, Ryan, & Marsh, 2014; Meier, Slutske, Arndt, & Cadoret, 2008). In other studies, these amplified effects of such personality traits on antisocial behaviour are observed in neighbourhoods with greater SES and more social cohesion (e.g., Vazsonyi, Cleveland, & Wiebe, 2006; Zimmerman, 2010). In others, however, no moderation effect was found between impulsiveness or CU traits and the neighbourhood (Chen & Jacobson, 2013; Kroneman, Hipwell, Loeber, Koot, & Pardini, 2011; Ray, Thornton, Frick, Steinberg, & Cauffman, 2015).

In view of the inconsistency present in the empirical evidence and the lack of indirect effects research of impulsiveness, narcissism and CU traits simultaneously, the aim of this study was to analyse the joint influences of these psychopathic personality traits and neighbourhood risk on adolescent antisocial behaviour in a Spanish sample. Despite that most research analyses indirect moderation effects, the current study was focused on the analysis of mediation effects. This decision was based on meeting the methodological criterion proposed by the MacArthur approach (Kraemer, Kiernan, Essex, & Kupfer, 2008; Kraemer, Stice, Kazdin, Offord, & Kupfer, 2001). These guidelines recommend mediation in the case of associated or correlated variables. Therefore, mediation has been considered more adequate based on the assumption that neighbourhood context and personality do not independently influence behaviour, but rather act jointly and interrelatedly (e.g., Eccles & Roeser, 2011; Farrington et al., 2010; Leventhal et al., 2009).

Thus, the first objective of this study was to analyse the existence of mediation effects of neighbourhood risk on adolescent antisocial behaviour through the psychopathic personality traits (i.e., impulsiveness, narcissism, and CU traits; see Figure 1). The second objective was to verify whether these mediated effects of neighbourhood risk are stronger than its direct effects on antisocial behaviour. The findings of the current study would have important implications within the field of prevention and risk management with juvenile offenders.

Method

Participants

The sample is composed of 406 young people aged 14 to 21 ($M = 16.89$; $SD = 1.62$), 82.7% males, from 29 juvenile centres from

two regions of Spain: Galicia (NW) and Andalucía (S); 41.70% had committed property offenses and 32.43% had committed violent offenses; the rest were not specified. Most of the sample was serving some type of institutionalization measure ($n = 290$; 71.43%). Regarding substance misuse (i.e., weekly or daily frequency of consumption), 39.11% presented alcohol misuse, 39.73% showed cannabis misuse, and 8.92% showed cocaine misuse. Finally, 46.31% of the sample displayed previous violent conducts and 24.10% presented family criminality.

Instruments

This study is focused on the assessment of the following variables: neighbourhood risk, impulsiveness, narcissism, CU traits, and antisocial behaviour. Different scales from the protocol of Valoración del Riesgo en Adolescentes Infractores [Juvenile Offender's Risk Assessment] (VRAI; Luengo, Cutrín, & Maneiro, 2015) were used, which have previously been validated.

Neighbourhood risk. Technicians of juvenile centres respond to a 4-item scale (Gómez-Fraguela, Villar, & Luengo, 2011) to evaluate the presence of delinquency, drug access, violence, and poverty within the youth's neighbourhood, using a 3-point scale ranging from 1 (*Little*) to 3 (*Much*).

Impulsiveness. This personality trait was measured by a 10-item self-reported scale, based on a short version of the Impulsiveness and Venturesomeness subscales from the I_7 (Aluja & Blanch, 2007). This version is composed of five items about impulsive behaviours (e.g., "I do things without thinking twice"), and five items focused on sensation-seeking behaviours, and risk taking (e.g., "I like living exciting new experiences"), using a 4-point Likert scale ranging from 0 (*Not true*) to 3 (*Very true*).

Narcissism. This variable was assessed with a short self-reported version of the Antisocial Process Screening Device (APSD; Frick, & Hare, 2001) validated for an adolescent Spanish population (Romero, Luengo, Gómez-Fraguela, Sobral, & Villar, 2005). This version is composed of seven items (e.g., "I considered myself better or more important than others"), and is scored on a 4-point scale ranging from 0 (*Not true*) to 3 (*Very true*).

Callous-Unemotional. These traits were assessed by an adapted version of the Inventory of Callous-Unemotional traits (ICU; Essau, Sasagawa, & Frick, 2006) validated for adolescent Spanish populations (López-Romero, Gómez-Fraguela, & Romero, 2015). This version is a 24-item self-report scale rated on a 4-point scale ranging from 0 (*Not at all true*) to 4 (*Definitely true*). This scale presents 11 statements focused on assessing the level of callousness in adolescents (e.g., "The feelings of others are important to me"), five referring to unemotional traits (e.g., "I do not show my emotions to others"), and eight focusing on the assessment of uncaring feelings (e.g., "I feel bad or guilty when I do something wrong").

Antisocial behaviour. Adolescent antisocial behaviour was assessed by a short self-reported version of the Antisocial Behaviour Questionnaire (ABQ; Luengo, Otero-López, Romero, Gómez-Fraguela, & Tavares-Filho, 1999), composed of 24 items scored on a four-point scale ranging from 0 (*Never*) to 3 (*Very Often*). All the items were grouped into four 6-item subscales that assess aggressive behaviour (e.g., "Provoking fights"), rule-breaking (e.g., "Staying out overnight without permission"), theft (e.g., "Stealing things in stores when they are open"), and vandalism (e.g., "Intentional destruction of street furniture").

Procedure

The compliance of the ethical standards was taking into account throughout the investigation. The study was presented to the heads of the juvenile centres, and qualified psychologists explained the objectives and provided the proper instructions to the participants. Additionally, consent of the youths' parents or legal caregivers was requested in those centres. Participation was voluntary, and anonymity and confidentiality of information were totally guaranteed.

Data analysis

Statistical analyses were conducted on IBM SPSS Statistics 20, and SPSS Amos 19 was used to analyse the structural equation modelling. Correlations were analysed to determine whether variables could be included in the mediation analysis. Under the guidelines proposed in the MacArthur approach (Kraemer et al., 2008; Kraemer et al., 2001), in order to consider a variable as a mediator, it must be correlated with the independent variable and it must occur after the independent variable. Therefore, personality traits were considered as mediator variables because these traits are gradually developed throughout childhood within the environment. For the estimation of this structural equation model (see Figure 1), the Maximum Likelihood (ML) method was used as well as the following goodness-of-fit indexes: The traditional χ^2/DF , the CFI, the RMSEA, and the SRMR.

Results

Table 1 shows descriptive statistics, including means, standard deviations, and scale ranges of the main study variables, as well as the number of items of each scale, and their internal consistency (Cronbach's α). As regards antisocial behaviour, rule-breaking followed by aggression were the most frequent behaviours amongst the young people.

As shown in Table 2, all correlation coefficients were significant and positive. Personality traits were more strongly correlated with antisocial behaviour than neighbourhood risk, primarily impulsiveness. Analysing the types of antisocial behaviour, it was found that impulsiveness and CU traits were more strongly correlated with aggressive behaviour, whereas narcissism was more strongly correlated with rule-breaking. On another hand, neighbourhood risk was more strongly correlated with rule-breaking and showed the lowest correlations with aggressive behaviour and vandalism. Likewise, neighbourhood risk and personality traits were also correlated significantly and positively. However, these correlations were very low, especially in the case of CU traits.

After preliminary analyses, the structural equation model was tested in order to check the hypotheses presented in this study. This mediated model obtained acceptable fit indexes, $\chi^2 (283) = 2.19, p = .000, CFI = .925, RMSEA = .058, CI [.052, .064], SRMR = .060$. The results indicate that neighbourhood risk explains between 4 and 5% of variance of each personality trait (impulsiveness, narcissism, and CU traits), and that relationships between neighbourhood risk and such personality traits explain 66% of the variance of juvenile antisocial behaviour. As shown in Figure 1, neighbourhood risk exerts significant direct effects on the three personality traits. However, only the impulsiveness and CU traits present significant direct relationships with antisocial behaviour, with impulsiveness exerting the greatest influence.

Regarding indirect effects, results indicate that the mediated effect of neighbourhood risk through psychopathic traits was significant, $\beta = .20, p = .011, 95\% CI [.10, .29]$. Therefore, neighbourhood risk only exerts significant effects on the antisocial behaviour of Spanish adolescents indirectly. Considering the total effects that neighbourhood risk exerts on antisocial behaviour, $\beta = .31, p = .007, 95\% CI [.20, .41]$, the mediated effects through the presence of these personality traits would reach approximately two thirds of its influence. In other words, of the total effects that neighbourhood risk exerts on antisocial behaviour, 65% would correspond to mediated indirect effects.

Discussion

The findings of this study showed, as expected, that the presence of impulsiveness and CU traits directly favours the development of antisocial behaviour throughout adolescence, primarily

Table 1
Descriptive results of neighbourhood risk, personality traits, and the antisocial behaviours

	M (SD)	Range	Scale items	Scale α
Neighbourhood risk	7.94 (2.75)	[0-12]	4	.92
Impulsiveness	16.38 (5.67)	[0-30]	10	.79
Narcissism	4.96 (3.13)	[0-15]	7	.74
Callous-Unemotional	4.18 (1.36)	[0-9]	24	.86
Antisocial behaviour	5.88 (4.31)	[0-18]	24	.96
Aggression	6.79 (4.93)	[0-18]	6	.88
Rule-breaking	7.14 (4.49)	[0-18]	6	.85
Theft	5.20 (5.29)	[0-18]	6	.89
Vandalism	4.38 (4.47)	[0-18]	6	.83

Table 2
Results of the correlation analysis between the antisocial behaviours, neighbourhood risk, and personality traits

	Neighbour. risk	Global Antisocial Behaviour	Aggression	Rule-breaking	Theft	Vandalism
Neighbour. risk		.222***	.188**	.254***	.200***	.156**
Impulsiveness	.167**	.623***	.592***	.585***	.544***	.513***
Narcissism	.156**	.555***	.480***	.511***	.509***	.488***
CU traits	.118*	.359***	.360***	.320***	.303***	.305***

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

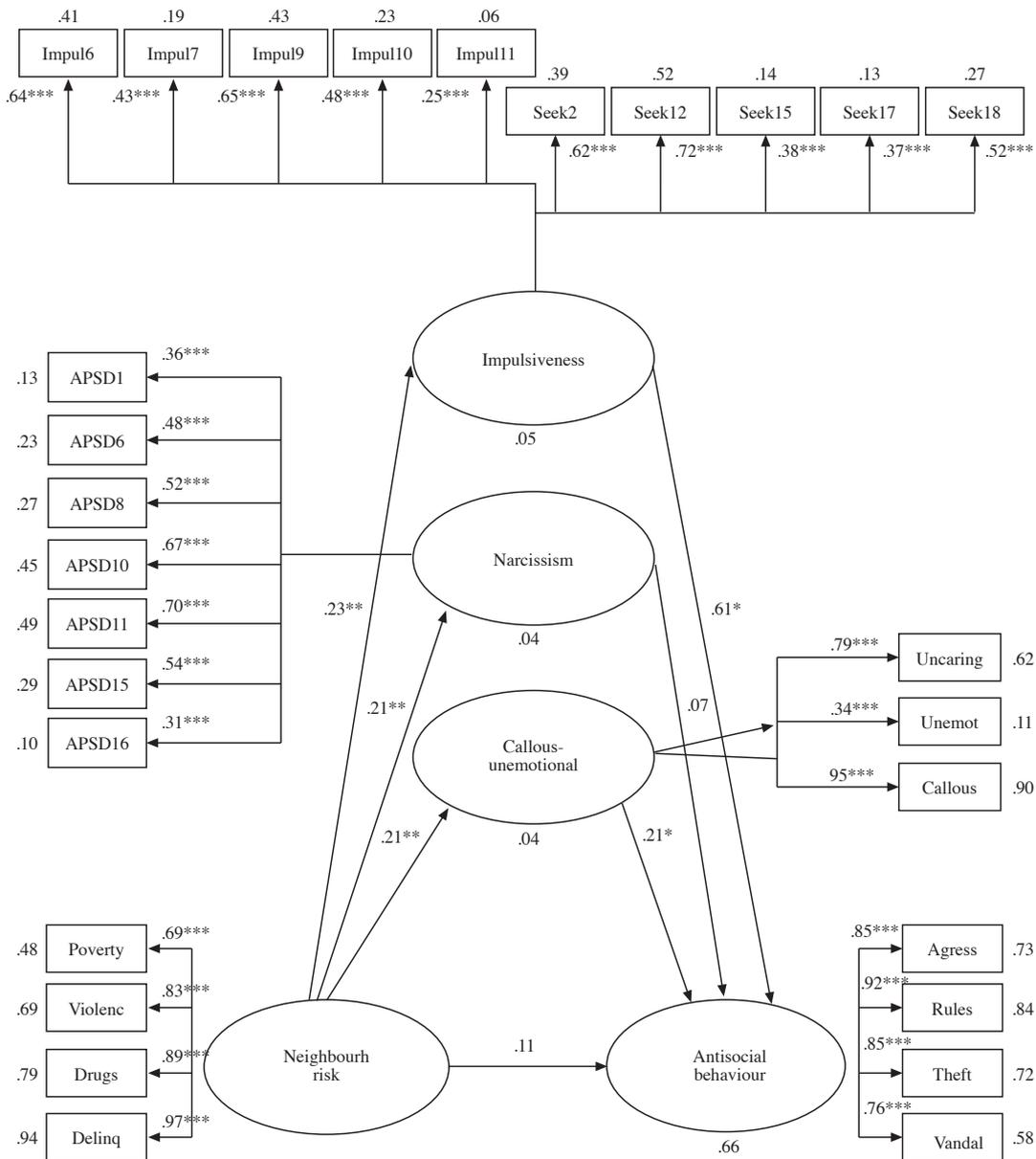


Figure 1. Mediation model of neighbourhood risk on antisocial behaviour through impulsiveness, narcissism, and CU traits. The model shows the determination coefficients, the structural coefficients, and the standardized regression coefficients for each variable. The coefficients below the latent variables correspond to their explained variance. * $p < .05$; ** $p < .01$; *** $p < .001$

impulsiveness (Asscher et al., 2011; Jolliffe & Farrington, 2009; Vaughn et al., 2008). However, narcissism was not related to antisocial behaviour, perhaps because it is specifically related to some type of antisocial or behavioural problem not measured in this study, such as relational aggression (e.g., Kerig & Stellwagen, 2010; Lau & Marsee, 2013). On another hand, the direct relations between neighbourhood risk and the psychopathic traits were significant and positive. This finding supports the proposal that environment might influence personality expression and adolescent emotional development (DeWall et al., 2011; Leventhal et al., 2009) and, more specifically, that residing in a high-crime neighbourhood might influence the development of psychopathic personality traits (Farrington et al., 2010).

Therefore, because neighbourhood risk was significantly related to the psychopathic traits, and in turn, impulsiveness and CU traits were significantly related to antisocial behaviour, the first hypothesis of this study was partially supported: Neighbourhood risk exerts its influence on antisocial behaviour through the mediation of impulsiveness and CU traits in Spanish youth. In fact, the results found that neighbourhood risk does not present a significant direct relationship with antisocial behaviour, so its influence is totally mediated by such personality traits. Despite the absence of ample evidence analysing these mediation effects, other studies also found that the neighbourhood context influences antisocial behaviour through its relation with other variables, such as academic achievement, peer group or parenting (Defoe,

Farrington, & Loeber, 2013; Mrug & Windle, 2009; Wright, Kim, Chassin, Losoya, & Piquero, 2014).

As regards the magnitude of the effects, the findings support the second hypothesis considered in this study, showing that mediated effects are stronger than direct effects. Thus, the mediation effects through impulsiveness and CU traits, besides being the only significant ones, accounted for approximately two thirds of the total effects that neighbourhood risk exerted on juvenile antisocial behaviour. These results suggest, in line with previous evidence, that personality is a more proximal risk factor for the development of antisocial and criminal behaviour than neighbourhood context, as well as that psychopathic traits are a robust predictor of these behaviours (Andrews & Bonta, 2010; Asscher et al., 2011; Vaughn et al., 2008). The results also suggest that neighbourhood risk does not constitute a significant independent risk factor for antisocial behaviour in Spanish youth, but it must be taken into account through the presence of other variables (Eccles & Roeser, 2011; Jennings & Fox, 2016).

Specifically, the obtained results allow drawing some conclusions and practical implications relevant to the field of prevention and risk management with juvenile offenders. Firstly, given that the effect of neighbourhood risk is fully mediated by impulsiveness and CU traits, prevention efforts should be based on the strengthening of resilience in youngsters, as it buffers the effect of these personality traits on antisocial behaviour (Bartol, 2006; Fergus & Zimmerman, 2005). Secondly, due to the significant relationship between neighbourhood and psychopathic traits, prevention should encourage characteristics of social resilience (e.g., social cohesion, school involvement) to buffer the effect of these and other risk factors related to antisocial behaviour (Fagan, Wright, & Pinchevsky, 2014; Wickes, Hipp, Sargeant, & Homel, 2013). Taking into account these considerations, these results may

indicate that socio-educational measures in an open system might be adequate regardless of neighbourhood risk, and more intensive interventions should be applied concurrently for those adolescents who present psychopathic traits. Moreover, intervention programs applied in institutional contexts should be especially focused on managing impulsiveness and CU traits. Therefore, personality trait assessment is essential in the legal context.

Nevertheless, this study shows some limitations that should be taken into account for the adequate interpretation of the results. Firstly, the limited number of females made it impossible to analyse gender moderation effects, as the results could be biased by the considerable difference in gender composition of the sample. Secondly, future works should examine the influence of mediation effects on different types of antisocial behaviour (i.e., violent and nonviolent behaviours). Thirdly, the neighbourhood risk variable was informed by technicians; therefore, future studies should include objective measures of neighbourhood disorder. To sum up, future studies using longitudinal designs should solve these limitations to clarify the mediation effects of neighbourhood risk and psychopathic personality traits on juvenile antisocial behaviour, as well as to analyse more deeply the different risk profiles associated with these variables.

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