Risk-need-responsivity model: Contrasting criminogenic and noncriminogenic needs in high and low risk juvenile offenders

Juan Luis Basanta[a], Francisca Fariña[a], Ramón Arce[b,*]

[a] Facultad de Ciencias de la Educación y el Deporte, University of Vigo, Spain
[b] Facultad de Psicología, University of Santiago de Compostela, Spain

ABSTRACT

The Risk-Need-Responsivity (RNR) offender rehabilitation model contends high risk offenders benefit more from intervention programs than low risk offenders (risk principle), and interventions are more effective if they target criminogenic needs (need principle) and engage offenders. A field study was undertaken in order to assess the relation between the risk of recidivism (high and low) and criminogenic and noncriminogenic needs in juvenile offenders. 101 juvenile offenders classified as either of high or low recidivism risk on the Youth level of Service/Case Management Inventory (YLS/CMI) were evaluated in terms of school failure, behavioural disorders, psychological adjustment, and social skills. The results showed higher rates of school failure and behavioural disorders (criminogenic needs) in high risk than in low risk juvenile offenders, and higher rates in low risk offenders than in the general population. As for psychological adjustment and social skills (noncriminogenic needs), the results revealed higher deficits in high risk than in low risk juvenile offenders, and no differences between low risk offenders and the general population. The theoretical and practical implications of the results are discussed.

1. Introduction

Problems associated in the literature to maladjustment, the risk of maladjustment, and ongoing maladjustment (Amato, 2001; American Psychiatric Association [APA], 2013; Cottle, Lee, & Heilbrun, 2001; Seijo, Fariña, Corras, Novo, & Arce, 2016) include internalizing (i.e., psychological adjustment); externalising symptoms (i.e., behavioural disorders, school failure); and social competence (i.e., poor social skills). These domains fall under the domain of dynamic factors i.e., they can be modified and are responsive to intervention. Thus, both internalizing and externalising symptoms and social competence (needs) should be the target of juvenile offender rehabilitation programs. The Risk-Need-Responsivity [RNR] model, which has become the most predominant offender rehabilitation model worldwide (Andrews & Bonta, 2010), distinguishes between criminogenic and noncriminogenic needs on the basis that the former have a direct impact on recidivism rates whereas the latter do not. Hence, intervention models should target criminogenic needs given that noncriminogenic needs fail to reduce recidivism rates. For example, Andrews and Bonta (2010) highlight that raising self-esteem (noncriminogenic need) may promote self-confidence and self-satisfaction, but does not in itself reduce recidivism rates.

The RNR offender rehabilitation model, initially intended for community-based interventions and later extended to interventions in other institutions, is regarded as the best empirically supported model and is underpinned by a robust theoretical framework (Andrews & Dowden, 2006; Hanson, Bourgon, Helmus, & Hodgson, 2009; Hanson & Morton-Bourgon, 2005; Koehler, Lösel, Akoensi, & Humphreys, 2013; Landenberger & Lipsey, 2005; Lipsey & Cullen, 2007). However, the model is subject to certain limitations that should be borne in mind. First, the model lacks internal consistency, fertility, explanatory depth, and external validity, but these limitations are not inexorable and the model can be reconstructed to overcome these shortcomings (Ward, Melser, & Yates, 2007).

Second, the measure of the efficacy of the intervention is not appropriate i.e., recidivism alone is not a reliable measure of the efficacy of the intervention owing to the different measures employed (i.e., police records, convictions, victim self-reports, victimization/self-report surveys), giving rise to inconsistent measures, and overestimated official records of recidivism and intervention outcomes (Arias, Arce, & Vilariño, 2013; Cala, Trigo, & Saavedra, 2016; Novo, Herbón, & Amado, 2016). Indeed, most recidivism goes unreported and thus undetected. Moreover, the most frequent measure of recidivism, i.e., official records, require a considerable lapse in time before recidivism is detected. Thus, the efficacy of an intervention is substantially overrated, leading to the model being poorly evaluated.

* Corresponding author at: Facultad de Psicología, Campus Vida, s/n, 15782 Santiago de Compostela, Spain.
  E-mail address: ramon.arce@usc.es (R. Arce).

Third, the assumption of a clinical treatment model for offenders who are not real clinical patients is intrinsically flawed. This assumption entails a double internal inconsistency underpinning the model: clinical intervention models for offender rehabilitation tend to measure efficacy in terms of modifying cognition (cognitive distortions) and not recidivism, which contradicts the responsivity principle. Succinctly, the main aim is to implicate the offender in the intervention, but labelling offenders patients and designating them clinical cases endorses false treatment adherence and progress, and in turn recidivism (i.e., the principle underlying clinical models is that offenders are not responsible for their acts due to their illness).

Fourth, disregarding noncriminogenic needs is regarded to be a major weakness undermining interventions, and several studies have linked noncriminogenic needs to recidivism (Maruna, 2004). Though noncriminogenic needs may not account for recidivism, they do act as inhibitors of recidivism (Novo, Fariña, Seijo, & Arce, 2012), and should be targeted by interventions. Furthermore, psychological adjustment is regarded to be an indirect and uncontaminated indicator of the efficacy of an intervention. Besides being a measure of the intervention, it also serves to control the lack of treatment adherence or false progress i.e., malingering, which proceeds differential diagnosis in forensic settings, particularly in antisocial and psychopathic populations (American Psychiatric Association, 2013).

Fifth, the literature has clearly underscored that the needs or deficits of offenders vary according to the risk level, with the relation between needs or deficits and risk escalating with the level of development, that is, deficits and needs gradually increase with development (Arce, Seijo, Fariña, & Mohamed-Mohand, 2010; Hawley, 2003; Maughan, Pickles, Rowe, Costello, & Angold, 2000). Notwithstanding, though it may be logical to assume that varying levels of risk require different degrees of treatment, the RNR model claims intervention is more efficacious in high risk offenders. This assertion is based on the findings of meta-analytical reviews that do not substantiate this view (not all of the studies arrive at the same conclusion; Hanson et al., 2009). This claim is also dubious since low risk offender interventions do not implement the same treatments as high risk offender interventions i.e., treatment is adapted to meet the criminogenic needs, characteristics, and learning styles of offenders (principle of responsivity). Thus, high risk offenders undergo intensive treatment, whereas low risk offenders are exposed to minor or no intervention at all (Hanson et al., 2009). Furthermore, there is no reliable classification of the level of risk. The offender's criminal record is the standard classification criteria for distinguishing between first time offenders and reoffenders (Andrews & Dowden, 2006; Dowden, 1998; Hanson et al., 2009), but in many cases the distinction is based on inferring from descriptions of participants in primary studies or according to the degree of the intervention (low intensity is classified as low risk, and high intensity as high risk), or on the basis of the recidivism rates of comparison groups (Landenberger & Lipsey, 2005). Moreover, descriptors are often imprecise and subsequent classifications are unreliable leading to offenders being arbitrarily assigned to a low risk level if they are not designated to a high risk level. Thus, all offenders in a given intervention are allocated to the same risk level and assumed to share the same needs and risk level in the same study (Andrews & Dowden, 2006), which is highly improbable. Moreover, the comparison of the results obtained in the intervention in terms of the recidivism rates of high and low risk offenders with control groups, without considering the different recidivism base rates in each condition, magnifies the results for high risk offenders and minimizes them for low risk offenders. In short, data analysis designs and classifications inflate the intervention outcomes applied to high risk offenders (Hanson et al., 2009). Paradoxically, this appears to overlook that (high risk) reoffenders were in the past first time (low risk) offenders, which leads to the follow-up question as to whether we should wait until first time offenders become reoffenders before we intervene as the former are classified low risk (one of the interpretations of the risk principle is recommending intervention only in high risk cases) or because offenders do not exhibit sufficient deficits or needs (being first time offenders) for treatment to be effective. Moreover, most meta-analyses endorsing the risk principle, save a few (Hanson et al., 2009), do no support this viewpoint. Indeed, the meta-analyses appear to confuse the fact that the effect is significant in high risk offenders but not so in low risk offenders with the effect being significantly higher in high risk groups. The statistical data available (Koehler et al., 2013; Schmucker & Lösel, 2015), do not confirm this superiority (95% confidence interval for the average effect sizes of the high and low risk offender interventions overlapped, meaning intervention efficacy between both groups was comparable). In addition to the previously mentioned lack of predictor reliability, the results were not accurate as the reviewed meta-analyses did not inform about the control of predictor and criterion unreliability as well as the sampling error i.e., the effects are not true effect sizes (Hunter & Schmidt, 2015). Nevertheless, if the meta-analytical reviews are valid, one may conclude that intervention is significant in high risk offenders, but not so in low risk offenders (but this does not imply that it is significantly higher than in low risk offenders), and the intervention with low risk offenders (little or no intervention) is ineffective, which underscores the need for greater precision through the efficacious adjustment of the principle of responsivity. To conclude the intervention is efficacious with high risk offenders and inefficacious with low risk offenders is not only contra natura [high risk offenders (reoffenders) at one time in the past were low risk offenders i.e., primary]; meanwhile, there is no reliable evidence supporting such a claim. Hence, this conclusion is unfounded.

As for the adherence of rehabilitation interventions to the set of RNR principles, the evidence available is subject to the same shortcoming. Though the mean effects of the meta-analyses were significant for the RNR principles, there were no differences between the mean effect sizes (overlapping mean confidence intervals) according to the level of adherence (none, one, two, and three principles), or the level of adherence (low, medium, high) to assess the principles of the model. Thus, the type of treatment administered, in particular in behavioural, cognitive behavioural, and multisystemic therapy, explains the same efficacy as the RNR (Hanson et al., 2009; Koehler et al., 2013). The high correlation between treatment type and the classification of studies on high adherence to the RNR model led Koehler et al. to underscore that both factors may be mutually confused. Nevertheless, adjusting interventions to meet the needs of offenders (need principle) is unquestionable i.e., interventions failing to target the needs of offenders simply lack substance. However, limiting interventions to criminogenic needs (i.e., history of antisocial behavior, antisocial personality pattern, antisocial cognition, antisocial associates, family/marital circumstances, school/work, leisure/recreation, substance abuse), and disregarding noncriminogenic needs (e.g., negation, little empathy for the victim, psychological adjustment, deficits in social skills; Hanson & Morton-Bourgon, 2004, 2005) may be a form of reductionism that undermines the efficacy of an intervention i.e., though they may not be the underlying causes of recidivism, they may serve as protective factors against recidivism. As for adjusting the intervention to the offender's learning abilities (responsivity principle), its validity is so evident that no evidence is required to support this issue. Hence, the RNR model rather than an intervention model appears to be a model of favourable conditions for an efficacious rehabilitation intervention (high correlation between treatment type and intervention efficacy).

Bearing this in mind, a field study was undertaken to assess the relation between the risk of criminal recidivism (high and low) and criminogenic or noncriminogenic needs in juvenile offenders by evaluating one of the fundamental strengths of the RNR model i.e., the relation between criminogenic needs and risk, and one of the reported weaknesses i.e., the relation between noncriminogenic needs and risk that are not targeted in the intervention.

2. Method

2.1. Participants

A total of 101 juvenile offenders, men (90.1%), Caucasian, age range 14 to 18 (Spanish legal majority is over 18) years ($M = 16.33$, $SD = 1.12$), who were processed and later convicted and sentenced to a judicial measure by the Spanish criminal law courts, participated in the study. In relation to the family economic status, 70 (69.3%) were classified as family incomes below the poverty threshold (relative poverty i.e., a measure of social inequality computed in relation to standards of living, which implies families are hindered from participating in normal life due to the lack of financial resources); and 31 (30.7%) as family incomes above the poverty threshold. As for the crimes committed, 52 (51.5%) were sentenced for crimes against persons, 39 (38.6%) for crimes against property; and 10 (9.9%) for different crimes. A total of 48 participants were classified as low risk of recidivism on the YLS/CMI and 53 as high risk.

2.2. Procedure and design

The evaluations and two in-depth interviews were carried in correctional institutions and in the offices of the Technical Team of the Juvenile Courts and Prosecutors. All the evaluations were mandatory by court order (forensic context). The tests and interviews were applied individually by three highly experienced forensic psychologists (> 20 years) in the Juvenile Technical Team. Informed consent was obtained from the courts of law – Public Prosecutor, and the Juvenile Magistrates – as well as from the juveniles and their parents/legal guardians (all agreed to participate). This procedure was further complemented by reviewing other documents related to criminal and judicial records. Psychological-psychiatric reports of behavioural disorders were gleaned from criminal records. In order to determine the level of the risk of recidivism, criteria outlined by the authors were applied, i.e., low risk for 0–8 total score and high risk for a total score higher than 8, in the *Youth Level of Service/Case Management Inventory* (YLS/CMI) (Hoge & Andrews, 2002).

The research methodology was quasi-experimental in a forensic evaluation context. The study design compared the mean for psychological adjustment and social skills and variables associated to behavioural disorders and school failure between low and high risk juvenile offenders.

As for the computed sensitivity of the design for a sample size of 101 juvenile offenders, the results showed the probability of detecting ($1 − β$) significant differences ($α < 0.05$) for a medium effect size (Andrews & Dowden, 2006; Dowden, 1998; Hanson et al., 2009; Novo et al., 2012) was > 80% for the mean comparisons between two independent samples, and > 90% for the association between variables (chi square test). Hence, the design was highly sensitive in detecting significant differences.

2.3. Measurement instruments

A register was set up of judicial and administrative files, health records (personal and family background of physical and mental illness); sociodemographic variables (age, gender, personal and family criminal history); and academic data (school performance and failure).

The classification of the risk of recidivism was undertaken using the *Youth Level of Service/Case Management Inventory* (*YLS/CMI*) (Hoge & Andrews, 2002), which was translated into Spanish using the *back-translation* method that has shown to be reliable with the participants in this study ($α = 0.882$). The inventory consisted of 42 items evaluated on a dichotomous scale (0 and 1), measuring 8 dimensions: past and current crime and judicial outcomes; family and parental circumstances; formal education and employment; relationship with peer group; illegal substance abuse; leisure and free time; personality and

behavior; and attitudes and orientation. In line with the classification established in the meta-analyses, offenders were classified into low risk or high risk levels (any offender who is not low risk is axiomatically high risk; Andrews & Dowden, 2006; Dowden, 1998; Hanson et al., 2009) in terms of the total score on the instrument ($≤ 8$ = low risk; > 8 = high risk). This scale was complimented by two evaluators with extensive experience in both evaluating juvenile delinquents and in using the instrument. The evaluators were found to be consistent in the evaluations using this instrument with other evaluators (kappa > 0.90). Data was gathered from judicial and administrative files, and from semi-structured interviews with the juvenile offenders, tutors, and the parents or legal guardians. The interviews were analysed by both evaluators and the evaluations were carried out independently by each evaluator, concordance between evaluators was crosschecked (inter-rater concordance) with each evaluator analysing 10% of their counterpart's encodings. Similarly, each evaluator was required to rate again 20% of their encoding one week after the initial encoding (intra-rater concordance). The results were satisfactory for between- and within-rater consistency (inter-rater agreement > 0.95, kappa > 0.90) in all the measured dimensions. Owing to the inter- and intra-rater concordance, and the inter-contexts (with other raters in previous evaluations), one may conclude the data were reliable (Wicker, 1975), in other words, not only there was concordance between raters, but it could also be generalized to other raters.

School failure was measured through course repetition and taken from the school records endorsed in judicial files.

To assess psychological adjustment, participants were administered the adapted Spanish version of the SCL-90–R (Derogatis, 1977, 2002), assessing nine clinical dimensions: somatization ($α = 0.86$, with the participants in this study), obsessive-compulsive ($α = 0.77$), interpersonal sensitivity ($α = 0.82$), depression ($α = 0.82$), anxiety ($α = 0.81$), hostility ($α = 0.85$), phobic anxiety ($α = 0.69$), paranoid ideation ($α = 0.77$) and psychoticism ($α = 0.82$). Moreover, the SCL-90-R consists of three global distress indices: Global Severity Index (GSI), the Positive Symptom Total (PST), and the Positive Symptom Distress Index (PSDI). These global distress indexes may be combined to assess malingering, the contrasting hypothesis i.e., differential diagnosis in this population (APA, 2013). A forensic technique applied to detect malingering from the global distress indexes (Vilariño, Fariña, & Arce, 2009), no protocol was classified as malingerer.

As for the assessment of social skills, participants completed the *Batería de Socialización BAS-3* [BAS-3 Socialization Inventory] (Silva & Martorell, 1989). This scale measures five dimensions of social skills: consideration for others ($α = 0.82$, for the participants in this study); self-control in social relations ($α = 0.78$); social withdrawal ($α = 0.81$); social/shyness anxiety ($α = 0.78$); and leadership ($α = 0.73$).

2.4. Data analysis

For the comparison of means, MANOVAs were performed and chi square for the association of variables. Effect sizes were valued by OR (Odds Ratio; effect size for contingency tables) $η^2$ (eta square; effect size for F test), Cohen's d (Effect size for mean comparison), h (effect size for proportions), and r (correlation effect size). As for estimating the generalization of the results to other samples under the same conditions i.e., juvenile offenders, 95% CI (95% Confidence Interval) for Cohen's d was derived from the formula of Hedges and Olkin (1985). Thus, if the confidence intervals (CIs) do not include zero, the results may be generalized to other samples of juvenile offenders with a 97.5% probability. For quantifying injury, an approach resulting from the Binomial Effect Size Display [BESD] (Rosnow & Rosenthal, 1996) consisting of the transformation of Cohen's d to r, and the 95% confidence intervals converting r to Z (Fisher's transformation), the confidence intervals for Z and calculating the inverse of the Z confidence intervals to obtain them in terms of r (if the confidence intervals do not include zero, the

injury or deficit was significant, and the confidence intervals determined the lower and upper limits of injury/deficits).

3. Results

3.1. School failure

The results revealed that for high risk offenders the probability (0.906) of having to repeat the course (criminogenic need) was significantly higher, $\chi^2(1, N = 101) = 15.52$, $p < 0.001$, OR = 7.47, than in low risk juveniles (0.563). These results were generalizable with a 97.5% confidence margin to other juvenile offender samples, $d = 1.11$, 95% CI [0.69, 1.53], and imply the magnitude of injury was greater of 48% ($r = 0.48$, 95% CI [0.31, 0.62]) in high risk offenders. The rate of offenders having to repeat the course was significantly higher among low risk juvenile offenders in contrast to the probability registered for Spanish Compulsory Secondary Education (0.277; Consejo Escolar de Estado [Spanish National Schools Council], 2015), Z ($N = 48$) = 4 0.43, $p < 0.001$, $h = 0.75$.

3.2. Behavioural disorders

A significantly higher probability, $\chi^2(1, N = 101) = 19.16$, $p < 0.001$, OR = 7.64, was observed in diagnosed behavioural disorders (criminogenic need) in the high risk juvenile group (0.566) than in the low risk group (0.146). These results were generalizable with a 97.5% confidence margin to other juvenile offender samples, $d = 1.12$, 95% CI [0.70, 1.54], and imply higher injury magnitude in high risk offenders of 49% ($r = 0.49$, 95% CI [0.33, 0.63]). The prevalence of behavioural disorders among low risk juvenile offenders was significantly higher than in the general population ($M = 0.04$, APA, 2013), $Z(N = 48) = 3.74$, $p < 0.001$, $h = 0.70$.

3.3. Psychological adjustment

The results of the contrasted effects of the (low vs. high) risk factor in psychological adjustment (noncriminogenic need; Hanson & Morton-Bourgon, 2004, 2005) showed a significant multivariate effect, Pillai's Trace = 0.195, $F(9, 91) = 2.45$, $p < 0.05$, explaining 19.5% of the variance ($\eta^2 = 0.195$, $r = 0.44$). Likewise, the risk factor also measured differences in global adjustment, Pillai's Trace = 0.129, $F(3, 97)$ = 4.80, $p < 0.01$, explaining 12.9% of the variance ($\eta^2 = 0.129$, $r = 0.36$). The univariate effects (see Table 1) revealed both high and low risk juvenile offenders informed of high somatization (i.e., more memories of body dysfunction); more obsessive-compulsive thoughts and impulses (i.e., thoughts, impulses, and actions experienced as unremitting and irresistible by the person but are of alien or unwanted nature); higher interpersonal sensitivity (i.e., feeling shy and embarrassed, tendency to feel inferior to others, hyper-sensitivity towards the opinions and attitudes of others, feeling uncomfortable and inhibited in general in interpersonal relationships); higher depression; higher (generalized and acute); higher hostility i.e., thoughts, feelings and behavior characteristic of aggressiveness states, rage and resentment); higher phobic anxiety (i.e., constant irrational and disproportionate fear of animals, people, places, objects, and situations, generally complicated by behavioural avoidance or flight); and psychoticism (in nonpsychiatric populations it is associated to interpersonal alienation i.e., feeling different to others, feeling mistreated, misunderstood, unwanted, finding it difficult to express hostility or in extreme cases the belief that someone is trying harm them physically). These results are generalizable to other samples of juvenile offenders with a 97.5% confidence margin. In comparison to low risk offenders, high risk juveniles showed mental health injury ranged from 24% in interpersonal sensitivity to 33% in depression (for injury ranges in the dimensions see Table 1 confidence intervals for r). Moreover, high recidivism risk juveniles reported a high Global Severity Index (GSI); and were more

distressed both in terms of the Positive Symptom Distress Index (PSDI) and the Positive Symptom Total (PST), with the results being generalizable to other samples of juvenile offenders with a 97.5% confidence margin. Injury in GSI, PSDI, and PST were 34, 24, and 34%, respectively, higher for the high risk juvenile offenders in comparison to the low risk juvenile offenders. Nevertheless, no differences in psychological adjustment, Pillai's Trace = 0.046, $F(9, 332) = 1.79$, *ns*, were observed between low risk offenders and the general adolescent population.[1]

3.4. Social skills

The results of the risk factor (low vs. high) on social skills (noncriminogenic need; Hanson & Morton-Bourgon, 2004, 2005) showed a significant multivariate effect, Pillai's Trace = 0.216, $F(5, 95) = 5.22$, $p < 0.001$, explaining 21.6% of the variance ($\eta^2 = 0.216$, $r = 0.46$). The univariate effects (see Table 2) revealed high risk juvenile offenders reported less social sensitivity (consideration for others); less compliance with social rules and norms fostering peaceful (self-control in social relations); more alienated from others (social withdrawal); greater fear, nervousness and shyness (social/shyness anxiety); and less initiative, popularity and self-confidence (leadership). The results are generalizable with a 97.5% confidence margin to other juvenile offender samples. Skills deficits of high risk juvenile offenders over low risk juvenile offenders is of 24, 25, 28, 33 and 38% for social/shyness anxiety, leadership, social withdrawal, consideration for others and self-control in social relations, respectively. No deficits in social skills, Pillai's Trace = 0.024, $F(5, 336) = 1.62$, *ns*, were observed in low risk juvenile offenders in contrast to the general adolescent population (see note 1).

4. Discussion

The results of this study should be interpreted with caution given the following limitations. First, the data were obtained from a forensic context and from a population with psychopathic characteristics, therefore distortions such as malingering should be taken into account (APA, 2013). Second, the results of both the criminogenic and noncriminogenic needs cannot be directly generalized to other variables of the same typology. Third, juvenile offenders were classified as high vs. low recidivism risk. Generalization to other classification levels (e.g., low, medium, medium-high, high) is subject to limitations. Fourth, the generalization of the results to other measurement instruments may be undertaken with caution. Notwithstanding, the data supported the generalization of the results to other samples of juvenile offenders, that is, to other populations of juvenile offender.

Bearing in mind these limitations, the following conclusions may be drawn. First, the results showed the greater prevalence of the criminogenic variables, school failure, and behavioural disorders among high risk juvenile offenders. Positive attitudes towards school and high academic performance protect against violence (Jolliffe, Farrington, Loeber, & Pardini, 2016). Additionally, the diagnosis of behavioural disorders implies the assumption of an antisocial personality pattern that is part of the Big Four criminogenic needs closely related to recidivism (Andrews & Bonta, 2010). However, the results regarding the prevalence of these variables (dynamic needs) in low risk juvenile offenders underscored they were not negligible and that intervention was warranted. The intervention targeting these needs is possible and effective in juvenile offenders (Koehler et al., 2013; Martínez-Catena & Redondo, 2017), if the intervention with low risk offenders is not significant (Andrews & Dowden, 2006; Koehler et al., 2013; Landenberger

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[1] As norms were not provided for 14–18 adolescents, 294 voluntary adolescent participants taken from the same area, matching in gender, 90.1% males, and age ($M = 16.18$) with the juvenile offender sample, were assessed to serve as a normative sample.

Table 1
Univariate effects on the symptom dimensions and global severity indexes for the 'risk of recidivism' factor (low vs. high).

Variable	F	p	M_{hr}	M_{lr}	d (95% CI)	r (95% CI)
Symptom dimension						
Somatization	9.51	0.003	0.70	0.38	0.61 (0.21, 1.01)	0.30 (0.11, 0.47)
Obsessive-compulsive	9.45	0.003	1.00	0.64	0.61 (0.21, 1.01)	0.29 (0.10, 0.46)
Interpersonal sensitivity	6.09	0.015	0.76	0.48	0.49 (0.09, 0.89)	0.24 (0.05, 0.42)
Depression	12.48	0.001	0.89	0.49	0.70 (0.30, 1.10)	0.33 (0.14, 0.49)
Anxiety	13.83	0.000	0.73	0.35	0.75 (0.35, 1.15)	0.35 (0.17, 0.51)
Hostility	16.49	0.000	0.86	0.27	0.80 (0.40, 1.20)	0.37 (0.17, 0.52)
Phobic anxiety	8.65	0.004	0.36	0.14	0.58 (0.18, 0.98)	0.28 (0.09, 0.45)
Paranoid ideation	3.75	0.056	0.83	0.58	0.38 (−0.02, 0.78)	0.19 (−0.01, 0.37)
Psychoticism	8.54	0.004	0.59	0.27	0.58 (0.18, 0.98)	0.28 (0.09, 0.45)
Global severity indexes						
GSI	13.21	0.000	0.80	0.41	0.72 (0.32, 1.12)	0.34 (0.15, 0.50)
PST	13.67	0.000	39	26	0.73 (0.33, 1.13)	0.34 (0.15, 0.50)
PSDI	6.89	0.010	1.64	1.33	0.52 (0.12, 0.92)	0.25 (0.06, 0.42)

Note. $df(1, 99)$; M_{hr}: mean of high risk juvenile offenders; M_{lr}: mean of low risk juvenile offenders; d(95% CI): Cohen's d (95% confidence interval); r (95% CI): correlation (95% confidence interval).

Table 2
Univariate effects on the socialization variables for the 'risk of recidivism' factor (low vs. high).

Variables	F	p	M_{hr}	M_{lr}	d (95% CI)	r (95% CI)
Consideration	11.68	0.001	11.57	13.04	0.67 (0.27, 1.07)	0.33 (0.14, 0.49)
Self-control	16.48	0.000	8.83	11.15	0.80 (0.40, 1.20)	0.38 (0.20, 0.53)
Social withdrawal	8.77	0.004	2.92	1.46	0.58 (0.18, 0.98)	0.28 (0.09, 0.45)
Social/shyness anxiety	5.99	0.016	4.60	3.21	0.48 (0.08, 0.88)	0.24 (0.05, 0.42)
Leadership	6.94	0.010	6.08	7.39	0.52 (0.12, 0.92)	0.25 (0.06, 0.42)

Note. $df(1, 99)$; M_{hr}: mean of high risk juvenile offenders; M_{lr}: mean of low risk juvenile offenders; d (95% CI): Cohen's d (95% confidence interval); r (95% CI): correlation (95% confidence interval).

& Lipsey, 2005; Lipsey & Cullen, 2007), this is either due to it not being carried out (Hanson et al., 2009) or it was due to faulty implementation (responsivity principle). Second, noncriminogenic needs i.e., psychological adjustment and social skills varied according to low and high risk juvenile offenders. High risk juvenile offenders exhibited greater levels of psychological maladjustment and greater deficits in social skills. Injury in somatization, depression, obsessive-compulsive, interpersonal sensitivity, generalized, acute and phobic anxiety, interpersonal alienation (psychoticism), and distress indexes are noncriminogenic needs, while hostility is a criminogenic need (Ruiz, Cox, Magyar, & Edens, 2014). Somatization, depression, anxiety disorders (obsession-compulsion, generalized and specific/acute anxiety) and hostility exacerbate other disorders such as behavioural disorders; while interpersonal alienation (psychoticism) and interpersonal sensitivity (feelings of inadequacy and inferiority) were comorbid with violence (Binswanger et al., 2010; Lysaker & Salyers, 2007; Morgan, Fisher, Duan, Mandracchia, & Murray, 2010; Novo et al., 2012). Additionally, deficits in social skills are strongly related to recidivism and transmission of violence (Arce, Fariña, & Novo, 2014; Contreras & Cano, 2016). Thus, no intervention on the above facilitated recidivisms among high risk juvenile offenders. and an intervention (Özabacı, 2011) can be successful in preventing recidivism (tertiary prevention). Nonetheless, these noncriminogenic needs are not characteristics of low risk offenders. Thus, in general intervention for noncriminogenic needs in low risk offenders is not required.

In conclusion, in relation to the RNR model, the results corroborated the grading of risk levels related to a scaled set of developmental deficits (Arce et al., 2010; Hawley, 2003; Maughan et al., 2000). Likewise,

criminogenic needs define the juvenile offender's deficits to the extent they relate the magnitude of these deficits to the risk level. Since noncriminogenic needs also define juvenile offenders, in particular high risk offenders and recidivism (Arce, Fariña, & Vázquez, 2011; Fazel et al., 2016; Hanson & Morton-Bourgon, 2004; Marmorstein, 2007), they must be targeted by rehabilitation models to protect against recidivism and to define high risk juvenile offenders. Moreover, they quite prevalent and make up part of the symptoms and disorders associated to behavioural disorders (APA, 2013). As for further research, studies are required to define the underlying causes of noncriminogenic needs as they are a characteristics of high risk offenders but not low risk offenders, and to test the efficacy of the intervention with low risk offenders.

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