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Psychopathic Traits and Ability Emotional Intelligence in Incarcerated Males

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ABSTRACT

Recent years have seen a growing interest in studying the factors that could help reduce the negative consequences of psychopathic traits, such as violence or criminal acts, given the effect these have on our society. This study aims to investigate the relationship between ability emotional intelligence (EI) and psychopathic traits in a sample of incarcerated men. In total, 63 incarcerated adult males ($M_{age} = 37.51$) completed the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and the 34-item Self-Report Psychopathy Scale-III (SRP-III). Comparisons using *t*-tests revealed that our sample showed significantly higher psychopathic traits and lower ability EI in comparison with nonincarcerated samples. Correlation analysis revealed a negative relationship between EI total score and the callous affect sub-dimension of psychopathy. Moreover, mediation analyses supported the existence of an indirect effect of EI total score on the psychopathy sub-dimensions of erratic lifestyle, criminal tendencies and interpersonal manipulation through the mediation effect of callous affect. These findings could help to inform the design of prevention and intervention programs implemented in penitentiary centers, which could have important implications for reducing antisocial and disruptive behaviours and improving possible future reintegration into society.

Los rasgos psicopáticos y la inteligencia emocional como habilidad en hombres encarcelados

RESUMEN

En los últimos años se ha observado un creciente interés por estudiar los factores que podrían ayudar a reducir las consecuencias negativas asociadas a los rasgos psicopáticos, como la violencia o los actos delictivos, dado el efecto que tienen en nuestra sociedad. Este estudio tiene como objetivo investigar la relación entre la inteligencia emocional (IE) como habilidad y los rasgos psicopáticos en una muestra de hombres encarcelados. En total, 63 varones adultos encarcelados ($M_{edad} = 37,51$) completaron la Prueba de Inteligencia Emocional de Mayer-Salovey-Caruso (MSCEIT) y la Escala de Psicopatía autoinformada-III de 34 ítems (SRP-III). Los análisis comparativos utilizando pruebas *t* revelaron que nuestra muestra de hombres encarcelados mostraba niveles de rasgos psicopáticos significativamente más altos y una menor IE en comparación con otras muestras de hombres no encarcelados. Los análisis de correlación mostraron una relación negativa entre la puntuación total de IE y la sub-dimensión de afecto insensible de la psicopatía. Además, los análisis de mediación avalan la existencia de un efecto indirecto de la puntuación total de IE sobre las subdimensiones de psicopatía del estilo de vida errático, las tendencias delictivas y la manipulación interpersonal a través del efecto mediador del afecto insensible. Estos resultados pueden ser de interés para el diseño de los programas de prevención e intervención implementados en los centros penitenciarios, pudiendo tener importantes implicaciones en la reducción de las conductas antisociales y problemáticas y mejorar la futura reintegración de la población presidiaria en la sociedad.

Palabras clave:

Inteligencia emocional
Psicopatía
Población encarcelada
MSCEIT
Análisis de mediación

The study of aversive personality traits has received increased attention in the last decade, with psychopathy particularly playing a central role in the literature, due in part to the high prevalence of violence and aggression presented by people who show high scores on these traits (DeMatteo & Edens, 2006; Sjödin, 2017; Walters & Delisi, 2015). In fact, these traits have been associated with higher rates of

criminal acts (Frick et al., 2003). Psychopathic traits appear to be closely linked to emotional competencies. However, interest in the relationship between psychopathic traits and emotional intelligence (EI) has only recently emerged, and requires further research (Garofalo et al., 2020). The present study therefore aimed to clarify the relationship between ability EI and psychopathic traits in a sample of incarcerated males.

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Psychopathic Traits

Psychopathy has been characterized as a personality construct that combines egocentricity, callousness, failure to form close emotional bonds, proneness to low anxiety, lack of remorse, superficial charm, dishonesty, and impulsive behaviour (Cacho et al., 2020; Forth et al., 1996; Hare, 1991; Hare & Neumann, 2008). Research has shown that many of these dimensions could be predictors of criminal behaviour (Frick et al., 2003; Garofalo et al., 2020; Piatigorsky & Hinshaw, 2004). For example, adults with high psychopathic trait tend to commit criminal acts at an earlier age, carry out more violent crimes, and commit a broader range of crimes than adults without these traits (Anderson et al., 1999; Blackburn & Coid, 1998; Douglas et al., 2006; Hare, 2003; Ling et al., 2019). Thus, individuals who have a high score in psychopathic traits have an exceptionally high prevalence in the incarcerated population (Frick et al., 2003; Piatigorsky & Hinshaw, 2004).

As a consequence of the increased interest in analysing psychopathy, various measurement instruments have been developed to measure this construct. In the present study, we used the Self-Report Psychopathy Scale-III (SRP-III; Paulhus et al., 2017), which is one of the most widely used self-report instruments for measuring psychopathic traits. The SRP-III has proven useful for evaluating these traits in both clinical and community samples (Driessen et al., 2018; Mahmut et al., 2011).

This scale is composed of four factors: “callous affect”, which refers to low empathy and low guilt; “interpersonal manipulation”, which includes elements such as pathological lying and manipulating; “erratic lifestyle”, which reflects characteristics such as recklessness or a person’s need to experience powerful emotions; and “criminal tendencies”, which measures antisocial characteristics and criminal acts.

Emotional Intelligence

EI is defined as “... the ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth” (Mayer & Salovey, 1997, p. 10). Joseph and Newman (2010) have suggested that the construct of EI can be divided according to its conceptualization and the type of measuring instruments employed, resulting in the following three main approaches: performance-based ability model, self-report ability model, and self-report mixed model. The performance-based ability model considers EI as a mental ability based on emotional aptitudes that can be assessed in an objective manner, whilst the self-report ability model—understanding EI in the same way—employs subjective measures. Finally, the self-report mixed model also employs subjective self-report tests; however, this model conceptualizes EI as a broader construct, since it also includes personality traits.

The three aforementioned models are widely used in the literature. Although these models show modest positive correlations with one another (Brackett & Mayer, 2003), various studies have demonstrated that the performance-based ability model presents a greater number of advantages. Thus, unlike models based on self-reports, the performance-based ability model works with more objective measures, thereby avoiding social desirability bias (Webb et al., 2013). In fact, preceding observations advise against the use of self-reports when measuring EI in a population with high psychopathic traits due to their level of manipulation and dishonest behaviors that these individuals present (Brackett et al., 2006; Hare, 1991; Hare & Neumann, 2008). In addition, the performance-based ability model has shown greater divergent validity and is more consistent in

predicting general behavior or personality disorder (Gutiérrez-Cobo et al., 2018; Mayer et al., 2016). Specifically, previous studies have shown that this EI model is the one that best predicts psychopathic traits (Gómez-Leal et al., 2018). For these reasons, our study made use of the performance-based ability model.

In the present study we used the MSCEIT instrument (Mayer et al., 2002) to assess ability EI. This scale is composed of two areas and four branches: the experiential area, that assesses the ability to perceive and manipulate emotional information and is composed of the perceiving and facilitating emotion branches, and the strategic area, that assesses the ability to understand and manage emotions and is composed of understanding and managing emotion branches.

Psychopathic Traits and Emotional Intelligence

The findings of previous studies in the literature support the hypothesis that people with high psychopathic traits have a series of emotional deficits. These individuals are characterized by a lack of understanding of their own and others’ emotional states, exhibit deficiencies in the recognition of emotion, a low level of moral emotions such as remorse and guilt, a deficit in the ability to regulate their mood, and have also been shown to be apparently indifferent to situations that should produce feelings of shame (Ali et al., 2009; Austin et al., 2014; Blair, 2005; Dolan & Fullam, 2006; Hastings et al., 2008; Montagne et al., 2005). Furthermore, emotional deficits, like deficiencies in the recognition of emotion, are associated with antisocial and criminal behaviours. The recognition of certain emotional expressions, such as fear and sadness, stimulate the activation of empathy, which inhibits antisocial behaviours because empathic people anticipate the negative consequences that they could cause in others (Barbosa et al., 2016; Hare & Neumann, 2008; Hunnikin et al., 2020; Kaseweter et al., 2020). According to these results, it seems logical that previous studies have explored the relationship between EI and psychopathic traits.

A recent systematic review revealed that the relationship between EI and psychopathic traits appears to vary according to the EI model used, and the sample analysed (Gómez-Leal et al., 2018). A subsequent meta-analysis analysing this relationship with only the EI ability model found that higher psychopathic traits are related to lower levels of EI (Megías et al., 2018).

Most of the research relating psychopathic traits and EI has analysed psychopathy as a global construct, without paying attention to each of its sub-dimensions (Jauk et al., 2016; Zhang et al., 2015). Since each sub-dimension is related to different characteristics, it is important to analyse each of them in order to reach more specific conclusions. The relatively few studies in the literature that have focused on psychopathy sub-dimensions and EI have found a negative relationship between interpersonal and affective components (callous affect and interpersonal manipulation) of psychopathy and EI. For example, Lishner et al. (2011), with a sample of 162 undergraduate students, found a negative relationship between primary psychopathy and the ability to perceive emotion of MSCEIT (performance-based ability model) regardless of participant gender.

However, the relationship between EI and lifestyle and antisocial components (erratic lifestyle and criminal tendencies) remains unclear. Some studies have shown a negative relationship between these components and EI, for instance, Grieve and Panebianco (2013) using 243 students and the self-report ability model to measure EI, while other studies have shown a relatively weak association, for example, Lishner et al. (2011) using a sample of 162 undergraduate students and the EI ability model. Finally, some studies found no relationship; for example, Porter et al. (2011), with 100 undergraduate participants and using a self-report mixed EI test. In the present study we focused on analysing all the sub-

dimensions of psychopathy in an attempt to shed some light on the discrepant results observed in the literature.

Incarcerated Population

The observation that both high psychopathic traits and low EI show relationships with aggressiveness, violence, and criminal acts (Brackett et al., 2004; Walters & DeLisi, 2015) has encouraged researchers to investigate these two variables in the incarcerated population. It is possible to find literature studying these two variables separately, though, to our knowledge, there are no previous studies analysing the differences in EI and psychopathic trait levels between incarcerated and nonincarcerated samples in the same study. In general, previous research has found that incarcerated samples show lower EI scores in comparison with normative samples. For example, a study with 374 incarcerated males found that mean EI scores were significantly lower than scores found in the normative data from the MSCEIT, a difference that was more pronounced for the strategic area than for the experiential area of EI (Ermer et al., 2012). With regard to psychopathy, previous findings indicate that there is a higher score for these traits in incarcerated than in nonincarcerated samples. For example, Castellana et al. (2014) compared a sample of 39 incarcerated youngsters with 32 other young people living in similar socioeconomic conditions and who had not committed offenses. They found that both psychopathic characteristics of interpersonal/affective and lifestyle/antisocial behaviour were higher in the incarcerated than in the nonincarcerated sample, even when excluding other mental disorders.

In relation to the association between psychopathic traits and EI in incarcerated samples, previous studies have found unclear results, which include negative, positive, or no relationship (Copestake et al., 2013; Ermer, et al., 2012; Ray et al., 2011). For instance, four studies using the performance-based model of EI have reported mixed results. Ermer et al. (2012), with a sample of 374 incarcerated males, found a negative correlation between the total psychopathy score and the strategic branch (understanding and managing emotions) of MSCEIT, although the effect size was small. Curci, Soleti, et al. (2017), using a sample of 26 male inmates, also found a negative correlation between the total MSCEIT scores and psychopathic traits. Likewise, Copestake et al. (2013), with a sample of 57 convicted male offenders, found a negative correlation between scores on the self-centered impulsivity scale of psychopathy and the managing branch of MSCEIT, but also found a positive correlation between the psychopathy scale of fearless dominance and antisocial behaviour and the perceiving emotion branch. Finally, Curci, Cabras et al. (2017), with a sample of 33 male inmates, found no evidence of a relationship between MSCEIT and psychopathy.

The main objective of the study was to analyse the relationship between psychopathic traits and EI in incarcerated adult males. In order to carry out a detailed study of this relationship, we analysed each of the sub-dimensions of the psychopathy construct and its relationship with the four EI branches. We hypothesized that:

- H1. The levels of psychopathic traits in our sample of incarcerated males are higher than those of their nonincarcerated counterparts.
- H2. The levels of EI in incarcerated males is lower than those of the nonincarcerated sample.
- H3. There is a negative relationship between total psychopathic traits score and total ability EI score.
- H4. There is a negative relationship between psychopathy sub-dimensions of callous affect and interpersonal manipulation and EI.
- H5. With respect to the relationship between the psychopathy sub-dimensions of erratic lifestyle and criminal tendencies and EI, we cannot formulate a clear hypothesis due to the contradictory results observed in the literature (see above). However, given the relationship between EI and interpersonal and affective compo-

nents of psychopathy (Lishner et al., 2011) and taking into account the causal role of emotional deficits in criminal behaviour (Barbosa et al., 2016; Hare & Neumann, 2008), we anticipate the possible existence of a negative indirect effect of EI on erratic lifestyle and criminal tendencies through the mediating role of the interpersonal and affective components of psychopathy.

Method

Participants and Procedure

The sample consisted of 79 adult males incarcerated in a minimum/medium security prison, in Alhaurín de la Torre, Málaga, Spain. In relation to the crimes committed by the sample, all of participants were sentenced to prison for minor crimes, like drug dealing offences, traffic infractions, or shoplifting. Due to confidentiality issues related to specific prison regulations, no additional private information could be obtained, such as the sentence time of each prisoner or their general criminal history. Participants' age ranged between 22 and 62 years, with a mean of 37.51 years ($SD = 10.03$). Sixteen participants were excluded because they failed to complete the whole battery, resulting in a final sample of 63 incarcerated males. Participants were briefed about study's procedures in both written and oral form and all of them provided written informed consent before taking part in the study in accordance with the Helsinki Declaration (World Medical Association, 2008). The participants were informed that participation was voluntary and anonymous, and they were assured that their decision to participate would not have any influence on their correctional status. Data were collected in one session through individual interviews conducted by expert psychologists in the field. During the first part of the session, EI measure was administered for approximately 60 minutes on average; during the second part of the session, the measure of psychopathy was administered, which lasted between 10 and 15 minutes.

Instruments

Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer et al., 2002). The MSCEIT is a performance-based ability measure of EI. This scale consists of 141 items divided into two areas composed of the following four branches according to Mayer and Salovey's (1997) theory: experiential (perceiving and facilitating branches) and strategic (understanding and managing emotions branches) areas. Each branch is measured using two tasks, for example, an item related to the facilitating branch is "what mood (s) might be helpful to feel when meeting in-laws for the very first time?" and participants have to choose, on a scale from 1 (*not useful*) to 5 (*useful*), how different emotions, such as surprise, tension, and joy, would favour this situation. The Spanish version of the scale was used in our study (Extremera et al., 2006). The internal consistency of the total score was ordinal McDonald's $\omega = .87$, and that of the sub-dimensions ranged between $\omega = .69$ and $\omega = .79$.

The 34-item Self-Report Psychopathy Scale-III (SRP-III; Mahmut et al., 2011). This scale is a 34-item self-report measure of psychopathy. Responses are given on a 5-point Likert-type scale (from 1 = *strongly disagree* to 5 = *strongly agree*). The SRP-III is composed of interpersonal, affective, lifestyle, and antisocial sub-dimensions. This instrument has provided extensive good reliability and construct validity among different populations (Garofalo et al., 2018). The Spanish version of the questionnaire was used in our study (Gómez-Leal et al., 2019). The internal consistency of the total score was ordinal McDonald's $\omega = .89$, and the values of the sub-dimensions ranged between $\omega = .81$ and $\omega = .87$.

Table 1. Means, Standard Deviations (*SD*), and *t*-test Analyses for all the Variables Included in the Study. Only Male Samples Were Used from Cabello et al. (2016) and Gómez-Leal et al. (2019)

	Mean (<i>SD</i>) Our sample	Mean (<i>SD</i>) MSCEIT Cabello et al. (2016)	Mean (<i>SD</i>) SRP-III Gómez-Leal et al. (2019)	<i>t</i>	<i>p</i>	Cohen's <i>d</i> (<i>PS_{ES}</i>)
MSCEIT total	92.73 (14.75)	97.37 (12.62)		2.95	.0032	0.33 (.174)
MSCEIT perceiving	100.12 (14.27)	100.96 (14.63)		0.46	.6400	0.05 (.032)
MSCEIT facilitating	94.42 (15.39)	95.03 (11.89)		0.41	.6800	0.04 (.024)
MSCEIT understanding	88.28 (16.57)	95.78 (12.61)		3.71	.0002	0.51 (.281)
MSCEIT managing	92.07 (21.82)	100.61 (14.10)		4.83	<.0001	0.46 (.259)
SRP-III total	2.11 (0.42)		1.99 (0.47)	2.05	.0400	0.27 (.151)
SRP-III Callous affect	1.72 (0.51)		1.82 (0.47)	1.70	.0900	0.20 (.111)
SRP-III Erratic lifestyle	2.26 (0.66)		2.37 (0.76)	1.16	.2500	0.15 (.088)
SRP-III Interpersonal manipulation	2.17 (0.50)		2.11 (0.66)	0.73	.4600	0.10 (.056)
SRP-III Criminal tendencies	2.21 (0.67)		1.75 (0.67)	5.51	<.0001	0.69 (.376)

Note. *PS_{ES}* = probability of superiority of the effect size.

Data Analysis

Research hypotheses were analysed using the following statistical procedures. First, a descriptive analysis was conducted for each of the variables included in the study. Second, given the differences in EI and psychopathic traits between nonincarcerated and incarcerated samples (Castellana et al., 2014; Ermer et al., 2012) we decided to verify, using Student *t*-tests, if these differences were also present in our sample by comparing them with previous studies that used the same assessment instruments. In relation to psychopathic traits, these were compared with the study conducted by Gómez-Leal et al. (2019), which is composed of 1,938 Spanish nonincarcerated (56.56% males). Ability EI was compared with the levels reported in the study by Cabello et al. (2016), which studied a large community sample of 12,198 Spanish adults (23.99% males). In order to match the samples, these comparisons were only carried out with the male participants of these studies. Cohen's (1988) *d* effect sizes were calculated and were interpreted in terms of the probability of superiority (*PS_{ES}*; Arce et al., 2020). Third, Pearson's correlations were used to explore the relationship between psychopathic traits and ability EI. Following *H5*, various mediation models were estimated to determine the indirect effect of EI on erratic lifestyle and criminal tendencies through the mediating effect of callous affect and interpersonal manipulation. Further, based on the results of the correlation analyses of this study (there was no significant relationship between interpersonal manipulation and total ability EI), we also examined the indirect effect of EI through the mediating effect of callous affect on interpersonal manipulation. Although the relationships between the variables introduced in the mediation models were based on well-established evidence from previous work (see introduction), a reverse model was conducted in order to explore and confirm

directionality of predictor and mediating variables. Moreover, even though historically one of the criteria established for mediation analysis was that it could only be performed when one has demonstrated that X and Y are associated, currently this analysis no longer imposes evidence of simple relation between X and Y as a prerequisite (Hayes, 2009). The descriptive analysis, Pearson's correlations, and *t*-tests were all conducted using SPSS version 24.0 (IBM Corporation, Armonk NY, USA). The significance level was set at .05. Mediation analyses using model 4 were conducted by SPSS PROCESS macro 3.4 (Hayes, 2018). Bootstrapping procedure was applied for computing mediations effects (5,000 samples, 95% CI). Data, methods used in the analysis, and code used to conduct the research will be made available to any researcher for the purposes of reproducing the results.

Results

Table 1 shows descriptive statistics (means and standard deviations) for all the variables included in the study. Before carrying out the *t*-tests to compare the scores of our sample with those of previous studies, we first confirmed that the normality assumption was reasonably satisfied (skewness and kurtosis coefficients were always between -1.11 and 0.84). SRP-III total scores were higher in our sample when compared with a nonincarcerated Spanish sample ($p < .05$, effect size higher than 15.1% of all possible [*PS_{ES}* = .151]; Gómez-Leal et al., 2019). Focusing on SRP-III sub-dimensions, we observed how the higher SRP-III total score is primarily explained by the scores obtained in the criminal tendencies sub-dimension ($p < .05$; effect size higher than 37.6% of all possible [*PS_{ES}* = .376]), which was the only sub-dimension for which there were significant differences between the incarcerated and nonincarcerated sample (for all remaining sub-dimensions: $p > .05$). With respect to ability

Table 2. Pearson's Correlations among the Variables Included in this Study

	2	3	4	5	6	7	8	9	10
1. SRP-III total	.61**	.76**	.61**	.79**	-.28**	-.17	-.18	-.25*	-.19
2. Callous affect	-	.24	.37**	.30*	-.52**	-.20	-.31*	-.43**	-.52**
3. Erratic lifestyle		-	.31*	.51**	-.04	-.08	-.01	-.08	-.07
4. Interpersonal manipulation			-	.21	-.22	-.07	-.08	-.26*	-.19
5. Criminal tendencies				-	-.11	-.10	-.13	-.05	-.03
6. MSCEIT total					-	.64**	.68**	.74**	.79**
7. Perceiving						-	.37**	.18	.24
8. Facilitating							-	.29*	.36**
9. Understanding								-	.61**
10. Managing									-

* $p < .05$, ** $p < .001$.

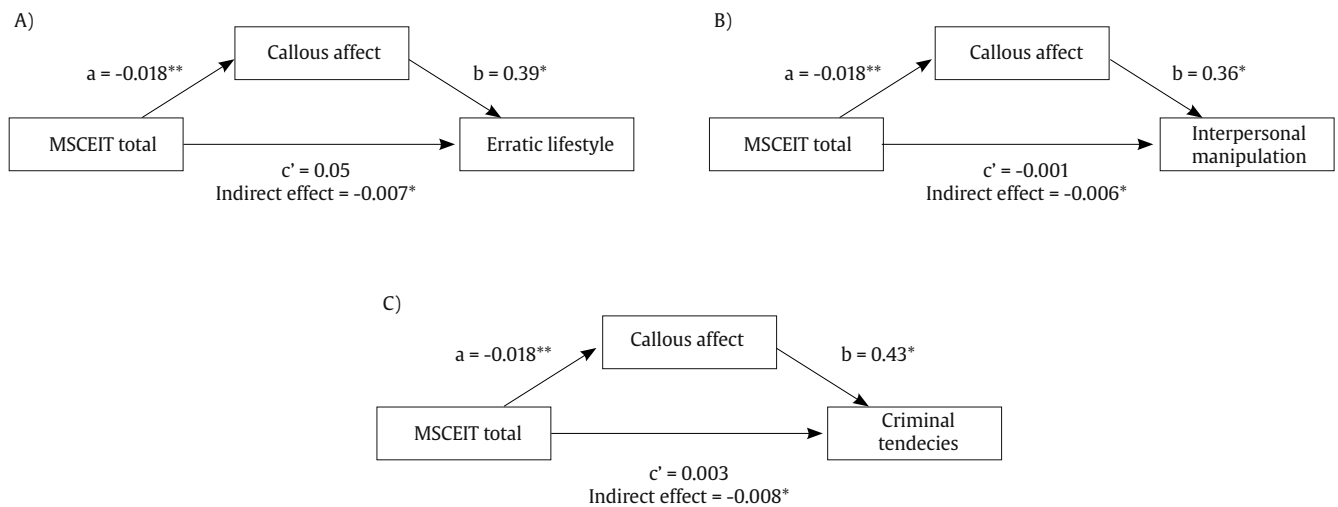


Figure 1. Path Coefficients for the Mediation Models.

* $p < .05$, ** $p < .01$.

EI, our study sample, compared with a Spanish community sample (Cabello et al., 2016), showed lower levels of EI for both the MSCEIT total score ($p < .05$; effect size higher than 17.4% of all possible [$PS_{ES} = .174$]) and the understanding and managing branches ($p < .05$; effect size higher than 28.1% of all possible [$PS_{ES} = .281$] and 25.9% [$PS_{ES} = .259$] respectively. See Table 1 for more details.

The results of the Pearson's correlations conducted between psychopathic traits and EI scores are shown in Table 2. These analyses revealed significant negative correlations between: a) MSCEIT total and SRP-III total, and with the callous affect sub-dimension; b) facilitating, understanding, and managing EI branches, and the callous affect sub-dimension of the SRP-III; and c) the understanding EI branch and the interpersonal manipulation sub-dimension of SRP-III (all $p < .05$).

With regard to the mediation analyses, the models including MSCEIT total as the predictor, and callous affect as the mediating variable, revealed a significant negative indirect effect of MSCEIT total on SRP-III sub-dimensions of erratic lifestyle (indirect effect coefficient = $-.007$, 95% CI [$-.0150$, $-.0004$]; explained variance of the model $R^2 = 6.58\%$), interpersonal manipulation (indirect effect coefficient = $-.0063$, 95% CI [$-.0118$, $-.0029$]; explained variance of the model $R^2 = 14.05\%$), and criminal tendencies (indirect effect coefficient = $-.0076$, 95% CI [$-.0153$, $-.0012$]; explained variance of the model $R^2 = 9.06\%$). Direct effects (i.e., controlling for callous affect) for these three models were not significant. Mediation analyses conducted with interpersonal manipulation as the mediating variable found no significant indirect or direct effect of MSCEIT total on the remaining SRP-III sub-dimensions. Significant models are displayed in Figure 1. Besides, since the design of the present study was cross-sectional, we decided to explore a

reverse model to rule out the possibility of alternative mediation explanations and, thus, supporting the directionality of our original models. No mediation models were significant when reversing the role of predictors and mediators.

Finally, mediation analyses, including each MSCEIT branch as a predictor, revealed that facilitating, understanding, and managing EI branches were indirectly and negatively related to interpersonal manipulation and criminal tendencies through the mediating role of callous affect (see Table 3 for statistical details). The managing branch was also found to have an indirect effect on erratic lifestyle through callous affect. Mediation analyses conducted with interpersonal manipulation as the mediating variable revealed that understanding and managing EI branches have a negative indirect effect on erratic lifestyle (see Table 3).

Discussion

The main objective of the present study was to comprehensively examine the relationship between ability EI and psychopathic traits in a sample of incarcerated adult males. We aimed to test the hypotheses that the level of psychopathic traits in the incarcerated population are higher than those in the nonincarcerated population, while the level of ability EI could be lower. Furthermore, we analysed the possible negative relationship between interpersonal and affective components of psychopathy and ability EI, and the negative indirect relationship between lifestyle and antisocial components of psychopathy and ability EI.

The results of t -test comparisons support both our $H1$ and $H2$. Scores on psychopathic traits differed significantly between

Table 3. Results of the Regression analysis and summary of the mediation model

Predictor	Mediator	Criterion	Indirect effect coefficient	SE	95% CI [lower, upper]
Facilitating	Callous affect	Interpersonal manipulation	-0.004	0.002	[-.0079, -.0011]
		Criminal tendencies	-0.004	0.002	[-.0102, -.0004]
Understanding	Callous affect	Interpersonal manipulation	-0.004	0.002	[-.0081, -.0018]
		Criminal tendencies	-0.006	0.003	[-.0124, -.0016]
	Interpersonal manipulation	Erratic lifestyle	-0.003	0.002	[-.0092, -.0004]
Managing	Callous affect	Interpersonal manipulation	-0.005	0.002	[-.0080, -.0020]
		Criminal tendencies	-0.006	0.002	[-.0118, -.0017]
		Erratic lifestyle	-0.006	0.003	[-.0119, -.0012]
	Interpersonal manipulation	Erratic lifestyle	-0.002	0.001	[-.0063, -.0001]

incarcerated and nonincarcerated males, as measured by the total SRP-III score. These differences are mainly explained by scores obtained on the criminal tendencies sub-dimension. Whilst some studies have found differences between the two samples in all sub-dimensions of psychopathic traits (Castellana et al., 2014), our findings are also supported by previous studies reporting that the fundamental differences in psychopathy between incarcerated and nonincarcerated samples are observed in terms of the antisocial behaviours that they carry out (Babiak & Hare, 2006). In this regard, previous research has affirmed that nonincarcerated people with high psychopathic traits present similar levels in the affective dimensions of psychopathy than incarcerated people, and that the difference between them could be explained by the presence of a series of moderating variables such as educational opportunities, intelligence, or economic level, which influence the behavioural expression of underlying traits (Garrido, 2004; Hare, 1993). Our findings also found that the incarcerated population has lower levels of ability EI than community samples. This difference was particularly marked in the strategic area of the MSCEIT (understanding and managing emotions branches). This area is related to the ability to evaluate and plan actions using information received from emotions. These results are in accord with those of previous EI literature (Ermer et al., 2012) and are also consistent with studies showing positive associations between EI and social and psychological adjustment, as well as negative associations with levels of impulsiveness, aggression, and offending (Brckett et al., 2004; Malterer et al., 2008).

In accordance with H3, there was a negative relationship between MSCEIT total and total scores on psychopathic traits. This could help clarify the mixed results previously found, and conforms the hypothesis supported by recent research showing that when EI is assessed by the performance-based ability model it is negatively related to psychopathic traits (Ermer et al., 2012; Visser et al., 2010). H4 was only partially supported. The significant relationship between the callous affect sub-dimension of psychopathy and both the MSCEIT total score and the MSCEIT branches of facilitating, understanding, and managing is in accordance with other findings in the literature (Blair, 2007; Lishner et al., 2011). These previous results indicate that callous affect sub-dimension is associated with a central emotional deficit, particularly with a poor ability to perceive emotional expressions, specially fearful and sad expressions, and a greater difficulty in managing emotions (Blair, 2007; Patrick & Lang, 1999). Besides, previous researchers found that individuals with more callous characteristics have a reduced empathic responding to victims, absent negative affect, and a deficit in affective information processing (Del Gaizo & Falkenbach, 2008; Hare, 1991). Regarding the interpersonal manipulation sub-dimension of psychopathy, the results revealed a significant negative relationship with only the understanding branch of EI. Participants with high scores in this sub-dimension show manipulative behaviours towards others to promote their own benefits and this type of behaviour is inversely related to EI (Salovey et al., 2002). Additionally, this relationship could be explained by the fact that a greater understanding of emotions of others could lead the individual to have a greater empathy towards the person they are trying to manipulate, resulting in withdrawal or decrease of that attempt (Jonason & Krause, 2013).

With respect to the relationship between EI and the sub-dimensions of erratic lifestyle and criminal tendencies, we did not observe any significant correlation. Previous literature has found mixed results when addressing this issue (Lishner et al., 2011; Porter et al., 2011). As a possible explanation of these findings, we propose the existence of an indirect negative relationship between EI and the erratic lifestyle and criminal tendencies sub-dimensions via the mediating role of callous affect and interpersonal manipulation (H5). In addition, given the lack of a relationship

between interpersonal manipulation and the MSCEIT total, we also decided to study the indirect effect of callous affect on this sub-dimension. Mediation analyses revealed a possible indirect effect of EI on erratic lifestyle, criminal tendencies, and interpersonal manipulation through the role of callous affect. Therefore, we could conclude that individuals with a higher EI show lower levels of callous affect and this, in turn, is related to lower scores on erratic lifestyle, criminal tendencies, and interpersonal manipulation.

Taken together, the results of this research could be explained in the following way. The incarcerated population is characterized by low EI and high psychopathic traits (mainly due to a high score on criminal tendencies), and this low ability EI is associated with high scores on the emotional deficit components of psychopathic traits, which has been shown by other studies in the literature to be related to a decrease in empathic aspects and a deficit in understanding the emotions of others (Ali et al., 2009; Austin et al., 2014; Lishner et al., 2011). At the same time, these traits could result in a lifestyle that is characterized by a higher degree of recklessness and impulsiveness, interpersonal manipulation, and antisocial behaviors, all of which could lead the person to commit criminal acts (Frick et al., 2003; Gómez-Leal et al., 2020; Neumann & Pardini, 2014; Piatigorsky & Hinshaw, 2004).

The results of our study could have significant clinical implications for society and for the prison context. Although these findings provide empirical evidence that emphasizes the potential benefits of EI training for individuals with psychopathic traits and tendencies to commit crimes and violent behaviors (with both incarcerated people and the general population) it must be considered the characteristics of the sample and the low scores in psychopathy. Thus, we recommend several possible applications; nevertheless, it would be necessary to expand further research for their proper implementation, for example demonstrating that EI levels are susceptible to modification in a population with high psychopathic traits. First, teaching EI abilities from childhood could help to avoid future antisocial behaviors in adulthood (Castillo-Gualda et al., 2018). Second, EI interventions in prison environments could result in a reduction in disruptive and antisocial behavior from incarcerated, facilitating the production of favorable individual reports by competent institutional authorities, which could have positive consequences for these individuals including earlier conditional release once the prisoner has reached the third degree (Edwards et al., 2020; Valdes, 2001). The development of better EI abilities, such as understanding and managing emotions, could reduce erratic lifestyles and the prevalence of recidivism in violent and criminal behavior (Curci, Cabras et al., 2017; Hare, 2003). In fact, previous intervention programs focused on increasing adaptive emotional regulation have already shown to be promising for reducing the number of disciplinary infractions and in the number of days in punishment among incarcerated individuals (Andrews & Bonta, 2010; Brazão et al., 2018). Finally, given the relationship between EI and the quality of personal relationships (Cabello & Fernandez-Berrocal, 2015), EI training could potentially help to reintegrate incarcerated individuals into society once their sentence is completed.

Finally, it is worth noting some limitations of our study that could be addressed in future research. First, it would be desirable to replicate our findings in a larger and more general sample to support our mediation analyses. Future studies should try to explore possible differences in the pattern of associations between psychopathy and EI as a function of gender, country, or type of crime for which the individuals are convicted. Second, whilst self-reports are an efficient and cost effective way of measuring psychopathic traits in comparison with other measures, such as interviews (Driessen et al., 2018), the responses gathered by these types of instruments are based on subjective perceptions and could be biased. Third, the sample of this study reported relatively low psychopathic traits scores. Participants did not score significantly higher than the community sample in some

of the psychopathy sub-dimensions. Thus, future studies should try to replicate these findings with people with higher psychopathic traits or with a clinical diagnosis of psychopathy. Finally, although we based our hypotheses and established mediation models on well-documented evidence from previous work, the cross-sectional nature of our study did not allow us to determine the causality between the analysed variables. Some authors have shown that using mediation analysis with cross-sectional data can generate biased estimates of the effects of mediators (Maxwell et al., 2011). Therefore, future investigation using experimental and longitudinal designs is needed to confirm our results and minimize possible biases derived from the type of design used in this study.

Conclusion

The present study contributes to an increased understanding of the relationship between psychopathic traits and ability EI by examining the sub-dimensions of both constructs in a sample of incarcerated males. The results showed that the incarcerated population is characterized by low EI and high psychopathic traits (explained by the scores obtained on the criminal tendencies sub-dimension). Moreover, participants scoring lower in ability EI were more likely to score higher on the callous affect sub-dimension of psychopathy. We also observed in this research an indirect negative effect of ability EI on erratic lifestyle, criminal tendencies, and interpersonal manipulation sub-dimensions through the mediating role of callous affect. Although more research would be necessary, the findings of this research provide empirical support for the need to implement intervention programs in penitentiary centers based on EI training. These programs could have important implications for reducing antisocial and disruptive behaviors, as well as for improving possible future reintegration into society.

Conflict of Interest

The authors of this article declare no conflict of interest.

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