

Exploring the associations between dark triad personality and psychopathology in convicted offenders: Identifying their role in reincarceration

Glòria Brugués Català | Beatriz Caparrós Caparrós

Psychology Department, University of Girona, Girona, Spain

Correspondence

Glòria Brugués Català, University of Girona, Pl. de Sant Domenec, 9, Girona 17004, Spain.
Email: gloria.brugues@udg.edu

Abstract

Dysfunctional personality and psychopathological characteristics are increasingly studied in offenders separately, but only a few studies have analysed their relationship in this specific population. In this research, we focus on the so-called Dark Triad personality, consisting of the Machiavellian, the narcissistic and the psychopathic personalities. The main objective of this study was to examine the association between Dark Triad personality and psychopathology and also to know the role of these mental health variables in recidivism. Participants were 63 offenders (44 men and 19 women) from two different penitentiary institutions. Socio-demographic data as well as clinical and personality characteristics were recorded. Psychopathology was assessed with the third version of the Millon Clinical Multiaxial Inventory and dark personality with the Short Dark Triad. Results of descriptive statistical analyses revealed a high prevalence of psychopathology in convicted participants and reincarcerated offenders. Correlational analyses showed a strong relation between the Dark Triad personality and psychopathology, being the psychopathic personality the one with the highest association. Finally, we found that the psychopathological variables contributing most to the discrimination of reincarcerated participants were substance and

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alcohol abuse disorders and in relation to dysfunctional personality were psychopathy and narcissism, the latter in negative direction. These data highlight the relevance of a necessity for research exploring long-term patterns of re-incarceration for both men and women, including mental health disorders and personality models. The importance of taking into account the relationship between variables in preventive and treatment interventions inside and outside penitentiary institutions is discussed.

KEYWORDS

dark triad, offenders, psychopathology, reincarceration

1 | INTRODUCTION

The exploration of how dark personality traits are implicated or associated in psychopathology in prison population may help to explain processes involved in psychological maladjustment and criminal behaviour. To our knowledge, only a few studies have analysed the association between psychopathology and dark personalities and even less in incarcerated offenders. The principal goal of the present work was to examine psychopathology in convicted offenders taking into account the gender variable related on one hand to the dark triad personalities, and secondly, associated with recidivist behaviour.

1.1 | Offenders and mental disorders

The study and description of the mental health of those individuals who have been convicted of a criminal offence are becoming increasingly important (Baranyi et al., 2018; Fazel et al., 2011; Prins, 2014). The prevalence of mental disorders in the prison population is estimated to be 75% among imprisoned women and 63% among imprisoned men (Gottfried & Christopher, 2017) being substantially higher than in community samples (Blaauw et al., 2002; Carvalho et al., 2013; Pondé et al., 2011). Although it is assumed that mentally ill criminal offenders commit crimes due to or because of their mental illness, recent research has observed that only approximately one fifth of criminal behaviour is related to mental health symptoms (Gottfried & Christopher, 2017; Peterson et al., 2014).

Several psychological disorders have been most commonly linked to criminal behaviour. The incidence of psychotic spectrum disorders is higher in prison population than in the general population, nearing 4% both male and female offenders (Fazel & Seewald, 2012). Depressive disorders are also relevant in the prison population with a 14% prevalence among women and a 10% prevalence among incarcerated men (Caravaca-Sánchez, Fearn, Vidovic, & Vaughn, 2019). At last, post-traumatic stress disorder ranks highly among the many mental health disorders strongly represented in prison population (Caravaca-Sánchez, Fearn, Vidovic, & Vaughn, 2019; Caravaca-Sánchez, Fearn, & Vaughn, 2019; Combs et al., 2019; Wolff et al., 2015).

These elevated prevalence rates of mental health disorders among offenders are especially warming as both the potential and actual negative impacts due to the comorbidity of mental health problems and substance use disorders, having shown that crimes involving violence are more prevalent between individuals who have co-occurred mental health problems and substance abuse (Armiya'u et al., 2017; Caravaca-Sánchez, Fearn, & Vaughn, 2019; Grossi & Green, 2017).

Differencing men and women, particularly in Spain, Vicens et al. (2011) in a study with 707 male offenders stated that over a 40% of them had mental disorders, being the most common anxiety disorders (23%), followed by substance use disorders (17.5%), mood disorders (15%) and psychotic disorders (4%). Concerning women, international research has found a relevant prevalence of mental disorders in female prisoners (Hales et al., 2016; King et al., 2018). In this respect, a higher prevalence of anxiety disorders and depression was observed in inmates with a previous history of victimisation during childhood and adulthood prior to their incarceration (Wolff & Shi, 2012) and also a greater occurrence of these symptoms while serving a custodial sentence (Caravaca-Sánchez et al., 2020). In addition, a higher tendency to attempt suicide was observed in the female population prior to and during imprisonment as well as a higher consumption of alcohol and other drugs (Fazel, Chang et al., 2016; Fazel, Hayes et al., 2016). In the Spanish female prison population, a raised association was found between alcohol and drug use with stress and depressive and anxious symptoms (Caravaca-Sánchez et al., 2020).

1.2 | Recidivism and mental disorders

Between prison population in Europe, about 39% had previously been imprisoned (Fazel & Wolf, 2015). A large number of international studies have addressed risk factors for repeated offending and reincarceration (Bonta et al., 2014; Carr et al., 2021; Singh & Fazel, 2010). In fact, individuals with mental disorders are at a higher risk of reincidence compared to people without mental disorders (Caravaca-Sánchez et al., 2020; Fazel & Yu, 2011). Furthermore, previous and current substance use were highly related to criminal behaviour and offence recidivism (Breedvelt et al., 2014; Koehler et al., 2014; Tanner-Smith et al., 2016).

In addition, it has been shown that the more severe the psychopathology presented by an inmate, the greater the risk of recidivism (Bengston et al., 2019; Fazel, Chang et al., 2016; Fazel, Hayes et al., 2016; Fazel & Wolf, 2015). Dysfunctional personality patterns and more specifically psychopathy also increase the risk of recidivism in offenders (Harris et al., 2017; Olver et al., 2015).

The study of the individual factors involved in the risk of recidivism in prison inmates may facilitate greater knowledge of the mechanisms of risk evaluation as well as their management with specific intervention measures for the prison population. Previous research (Brugués & Caparrós, 2021) analysed which dysfunctional personality patterns were related to reincarceration, including the Dark Triad traits, and the results showed that reincarcerated participants reported higher scores of psychopathy but lower levels of Machiavellian and narcissistic personalities.

1.3 | The dark triad of personality and mental disorders

Analysis of dysfunctional personality traits associated with criminal behaviour is of increasing relevance (Buckels et al., 2013, 2014; Furhnam et al., 2013; Paulhus, 2014). In this work, we focus on dark personalities. The term 'dark personalities' connotes high social aversion. Individuals with dark personality traits tend to be disagreeable, manipulative and callous, socially dominant and interpersonal exploitative (Jones & Figueredo, 2013; Muris et al., 2017; Paulhus & Williams, 2002; Thomaes et al., 2017). Despite they are not necessarily incompetent when it comes to understanding other people's perspectives, they display reduced empathic concern towards others (Jonason & Krause, 2013; Vonk et al., 2015; Wai & Tiliopoulos, 2012).

The intrinsic traits underlying the dark personalities point to increased risk-taking behaviour (Klimstra et al., 2014; Lau & Marsee, 2013; Malesza & Ostaszewski, 2016; Maneiro et al., 2020). In this respect, research has found strong correlations between the Dark Triad traits and the tendency to take financial risks (Sekscinska & Rudzinska-Wojciechowska, 2020), propensity to risky driving (Endriulaitienė et al., 2018), health risk activities, similar to substance abuse (Jauk & Dieterich, 2019; Stenason & Vernon, 2016) and other deviant behaviours, including crime (Azizli et al., 2016; Barry et al., 2007; Muris et al., 2017), aggressive conduct (Barlett, 2016; Jones & Neria, 2015), bullying and cyberbullying (Baughman et al., 2012; Goodboy & Martin, 2015; Van Geel et al., 2017).

The Dark Triad personality, first described by Pauslus and Williams (2002), is composed of the personality traits of Machiavellianism, narcissism and psychopathy. Machiavellianism is characterised by falseness or deceitfulness, externalisation of guilt and emotional coldness and manipulation of interpersonal relations for self-gain (Ali et al., 2009). Narcissism is characterised by exaggerated self-esteem and grandiosity, egoism, arrogance and exploitation of interpersonal relations and seeing others as a means to bolster self-perception even further (Campbell et al., 2000, 2002). Last of all, psychopathy is characterised by lack of empathy, difficulties in having satisfactory relationships with others, superficial affection, lack of remorse and absence of feelings of guilt, inability to learn from experience, impulsiveness and presence of antisocial behaviour that tends to begin in childhood (Cleckley, 1976; Hare, 1991; Hare & Neumann, 2008; Levenson et al., 1995; Pozueco Romero et al., 2011).

Recent research has begun to examine how these personality dimensions play a role in the origin and maintenance of the dysfunctional behaviour, extending anti-social behaviours, violent or criminal activity (Muris et al., 2017; Skeem & Cooke, 2010; Wright, Morgan, et al., 2017; Wright, Stepp, et al., 2017) to internalising problems such as phobias and depression (Jonason et al., 2015; Miller et al., 2010) and how they develop longer-term mental health and adaptation (Miller et al., 2007; Reijntjes et al., 2016).

1.4 | The present study

The main goal of this study is to examine psychopathology and its relationship to dark personalities in convicted offenders. The particularities of these dimensions have been widely investigated (Bertl et al., 2017; Jonason et al., 2011; Jones & Figueredo, 2013); however, much less is known about the individual profiles and psychopathological processes that underlie the dark personality traits. Furthermore, mental disorders are associated with increased reincarceration rates (Bengston et al., 2019; Caravaca-Sánchez et al., 2020; Fazel, Chang et al., 2016; Fazel, Hayes et al., 2016; Fazel & Wolf, 2015; Fazel & Yu, 2011) and dark personality traits are associated with risky behaviour (Klimstra et al., 2014; Lau & Marsee, 2013; Malesza & Ostazwki, 2016; Maneiro et al., 2020). Knowing specifically the profile and the most common psychopathological characteristics of this population will help to develop therapies inside and outside penitentiary institutions that will reduce the risk of recidivism by improving mental health. In addition, the study of the dark personality traits most associated with the large variety of psychopathological disorders will allow us to design more personalised treatments. Therefore, the specific objectives of this research are (a) to analyse gender differences in the psychological disorders, (b) to examine differences in psychopathology between reincarcerated and non-reincarcerated participants, (c) to analyse the associations between psychological disorders and dark personality traits and (d) to observe those study variables that discriminate between reincarcerated and non-reincarcerated behaviour.

Considering the literature review, we expect our findings to support the following hypotheses:

- Female inmates will have higher levels of psychopathology than condemned males.
- People who have already been reincarcerated will present greater levels of psychopathology than those offenders who have only been convicted once.
- The associations between the three dark personalities and the various psychopathological disorders will be positive. Moreover, each of the personalities will present an idiosyncratic psychopathological pattern.

2 | METHOD

2.1 | Participants

Participants were 63 offenders (69.8% men and 30.2% women), inmates of two prisons in Catalonia (Spain), who were serving sentences for a wide variety of crimes. One participant was excluded after failing to complete the whole

battery, resulting in a final total sample for this study of 62 offenders. The age range of the participants varied from 25 to 80 years old ($M = 40.29$, $SD = 10.64$). 68.3% of the participants were born in Spain, while the remaining 31.7% were born in foreign countries. 46% were married or cohabitating, and 54% did not have a partner at the time of the study. In relation to education, 17.5% only completed primary school, 48% completed high school, 11.1% hold a university degree and 25.4% completed a vocational training. Finally, regarding the crime for which they were convicted, 44.5% were serving sentences related to violent crimes (these include robbery with violence, homicide and murder, gender-based violence and sexual assault) and 55.4% for non-violent crimes (crimes against public health and against public treasury, fraud and forgery, robbery without violence, forming part of criminal and drug gangs and traffic offences). More specific sociodemographic information is described in detail in a previous study (Brugués & Caparrós, 2021). Inclusion criteria were having a final criminal sentence and a correct understanding of Spanish to complete the psychometric instruments accurately.

2.2 | Procedure

All participants volunteered for the study and provided informed consent to the procedures approved by the Generalitat de Catalunya Justice Department. Ethical approval for the study was provided by both the Rehabilitation Service of the Penitentiary Institutions (with file number 0310/836/2018 in 12/02/2018) and the corresponding Penitentiary Institution. In all three penitentiary institutions, the security, confidentiality and anonymity protocols appointed by de Justice Department were followed.

At the beginning of the study, the various prison modules were visited in order to explain the characteristics of the study and to ask volunteers to take part in it. The forensic psychologist (main researcher) was present throughout the administration of the psychometric instruments in both prisons to solve doubts and offer clarifications. In the second prison, only the women's module was visited, since in the first institution, the number of female offenders was reduced; this attempt was made to achieve greater female participation in the study. The questionnaires were administered in two sessions—to prevent fatigue and to improve concentration and performance—and in a group setting in the educational facilities of each module. Psychopathology was assessed in session one and Dark Triad personality traits in session two. The data were collected from March to June 2018.

In order to analyse the results, two groups of participants were created in relation to the sociodemographic variables of the study. Considering that having a criminal history has been identified as one of the strongest predictors of reoffending (Andrews & Bonta, 2010; Leung et al., 2019; Maden et al., 2006), participants were classified based on: (1) recidivists: inmates who had already served time period of sentence for one or several other crimes in prison and (2) non-recidivists: prisoners serving their first sentence in prison. This classification was made taking to account previous studies where prior criminal history was used to assess recidivism (Fazel, Chang et al., 2016; Fazel, Hayes et al., 2016; Leung et al., 2019; Pechorro et al., 2019). In this study, to objectify the variable, a measure of institutionalised recidivism was used, and in other words, how many times the participant has had a conviction and prison sentence for committing a crime.

2.3 | Measures

An ad hoc sociodemographic questionnaire was developed to assess age, nationality, educational attainment, current living situation, employment history, religion issues, previous psychological disorders and drug and alcohol abuse. Furthermore, current offence and offending history were also registered.

The third version of the Millon Clinical Multi-axial Inventory (MCMI-III, Millon, Davis and Millon) was used to assess psychopathology. It is a 175-item true-false inventory that includes 14 personality scales, 10 clinical syndrome scales and four correction scales. We focused on seven moderate clinical syndrome scales (anxiety, somatoform,

bipolar, dysthymia, alcohol dependence, drug dependence and post-traumatic stress disorder), three severe clinical syndrome scales (thought disorder, major depression and delusional disorder) and the aggressive-sadistic personality disorder scale. The Spanish adaptation has good psychometric properties with a test-retest reliability between 0.84 and 0.96 and an internal consistency higher than 0.80 (Cardenal & Sanchez, 2007).

The Short Dark Triad questionnaire (SD3; Jones & Puhlius, 2014; Spanish validation of Pineda et al., 2018) is a self-report instrument developed to assess the three dimensions of the Dark Triad personality model in 27 items: Psychopathy, Machiavellianism and Narcissism. Participants were instructed to record the extent to which they agreed or disagreed with each item using a 5-point Likert scale (Strongly Disagree, 5 = Strongly Agree). Internal consistency from the three subscales ranges from 0.61 to 0.73 (Pineda et al., 2018).

2.4 | Data analysis

Different analyses were conducted with the IBM SPSS Statistics 27 programme. First, we did two group comparisons to analyse differences in dysfunctional personality, dark triad and moral disengagement between (a) men and women and (b) reincarcerated and non-reincarcerated offenders. For this purpose, we calculated *t*-student test for independent samples. Second, we calculated Pearson correlations analysis with all the study variables. Finally, to identify those variables allowing differentiating a psychopathological and personality profile between the reincarcerated and non-reincarcerated groups, a classificatory discriminant analysis was carried out.

3 | RESULTS

3.1 | Gender differences in psychological disorders

Table 1 presents the differences according to gender means and standard deviations of the psychological disorders variables. The results show that in the present sample of offenders, there were significant differences according to gender in most of psychological disorders (except in the bipolar, drug and alcohol dependence disorders). Female participants obtained higher mean scores than their male counterparts in the totality of scales. The size of the effect of these differences could be considered among intermediate and large.

TABLE 1 Descriptive statistics and gender differences for psychopathology variables.

	N = 62		<i>d</i>	<i>T</i>	<i>p</i>
	Men (N = 44)	Women (N = 18)			
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)			
Psychopathology					
Anxiety	5.77 (4.06)	10.72 (4.73)	-1.16	-4.14	.000
Somatoform	3.77 (3.86)	6.89 (4.36)	-0.77	-2.77	.007
Bipolar	7.48 (3.67)	9.28 (4.58)	-0.45	-1.62	.109
Dysthymia	4.14 (4.09)	9.00 (5.58)	-0.93	-3.34	.003
Alcohol dependence	5.30 (3.28)	6.83 (3.82)	-0.44	-1.59	.116
Drug dependence	8.75 (5.63)	9.56 (6.30)	-0.13	-0.49	.624
Post-traumatic stress disorder	5.50 (4.90)	12.61 (6.36)	-1.32	-4.74	.000
Thought disorder	5.64 (4.38)	10.72 (5.38)	-1.08	-3.87	.000
Major depression	4.02 (4.92)	9.44 (6.11)	-1.02	-3.66	.001
Delusional disorder	3.30 (3.00)	5.33 (3.10)	-0.66	-2.39	.020

3.2 | Differences between reincarcerated and non-reincarcerated offenders in psychological disorders

Table 2 presents the differences between reincarcerated and non-reincarcerated offenders in relation to all psychological disorders. Only one significant difference was found in reference to drug dependence disorder with higher scores in the reincarcerated group. The size of the effect of this difference was intermediate. No significant differences were found in respect to the rest of psychopathological variables although higher scores were observed in the reincarcerated group.

3.3 | Associations between dark constellation of personality and psychological disorders

Table 3 shows the correlations among dark constellation of personality and psychological disorders. In this respect, the Machiavellian personality was positively related to the somatoform, bipolar, dysthymia, thought and delusional disorders. In relation to narcissism, a negative relation was found with the drug dependence disorder and a significant positive relation with the delusional disorder. Psychopathic personality was positively associated with all the psychological disorders excluding post-traumatic stress disorder and delusional disorder.

3.4 | Discriminant pattern between the reincarcerated and non-reincarcerated groups

Having analysed the differences between the two groups studied and the association between the different research variables, we aimed to observe how the study variables contribute to the discrimination of reincarcerated and non-reincarcerated participants. For this purpose, a discriminant function analysis has been conducted with the psychopathological and dysfunctional personality variables studied. This function significantly differentiated between the groups, Wilks' $\Lambda = 0.641$, $\chi^2 = 22.47$, $p < .05$, canonical $R^2 = 0.59$. In Table 4, we observe all variables ordered by the absolute size of the correlation within the function. Only substance use emerged as a significant clinical variable in the final discriminant function. In the confusion matrix (Table 5), these variables correctly classify 73.5% of the non-reincarcerated group and the 88% of the reincarcerated group.

TABLE 2 Descriptive statistics and differences between recidivists and non-recidivists participants.

	N = 60		d	t	p
	Reincarcerated (N = 25)	Non-reincarcerated (N = 35)			
	M (SD)	M (SD)			
Psychopathology					
Anxiety	7.56 (5.04)	6.86 (4.64)	-0.14	-0.55	.579
Somatoform	5.28 (4.81)	4.00 (3.71)	-0.30	-1.16	.250
Bipolar	8.56 (4.26)	7.77 (3.89)	-0.19	-0.74	.460
Dysthymia	5.84 (5.45)	5.40 (4.94)	-0.08	-0.32	.746
Alcohol dependence	6.52 (4.24)	5.03 (2.70)	-0.43	-1.66	.102
Drug dependence	11.32 (5.70)	7.29 (5.49)	-0.72	-2.75	.008
Post-traumatic stress disorder	8.40 (6.78)	6.60 (5.74)	-0.28	-1.10	.272
Thought disorder	6.28 (5.57)	7.46 (4.91)	0.22	0.86	.391
Major depression	5.96 (6.44)	5.03 (5.36)	-0.16	-0.61	.544
Delusional disorder	3.72 (3.33)	3.94 (3.13)	0.06	0.26	.792

TABLE 3 Correlations among the dark constellation of personality and psychological disorders.

Psychopathology	Anxiety	Somatiform	Bipolar	Dysthymia	Alcohol dependence	Drug dependence	Post-traumatic stress disorder	Thought disorder	Major depression	Delusional disorder
Dark constellation of personality										
Machiavellianism	0.154	0.287*	0.401**	0.309*	0.000	0.033	0.238	0.350*	0.205	0.278*
Narcissism	0.091	0.162	0.078	-0.024	-0.250	-0.291*	-0.070	-0.058	-0.023	0.285*
Psychoopathy	0.266*	0.319*	0.266*	0.282*	0.335**	0.468**	0.243	0.348**	0.308*	0.143

* $p < 0.05$.

TABLE 4 Discriminant function analysis with personality and psychological disorders variables.

Predictive variables	Standardised coefficients
Drug dependence	0.471*
Alcohol dependence	0.289
Narcissism	-0.256
Post-traumatic stress disorder	0.246
Psychopathy	0.241
Somatoform	0.217
Bipolar	0.151
Major depression	0.148
Anxiety	0.139
Thought disorder	-0.118
Dysthymia	0.101
Maquiavellianism	-0.095
Delusional disorder	-0.010

Note: Discriminant function: $D_1 = -1.612$ (constant) 0.178 (drug dependence).

TABLE 5 Classification results.

	Reincarceration	Predicted membership group		Total
		No	Yes	
Original	No	25	9	34
	Yes	3	22	25
	No group	0	2	2
%	No	73.5	26.5	100.0
	Yes	12.0	88.0	100.0
	No group		100.0	100.0

4 | DISCUSSION

The main objective of this study was to examine psychopathology and its association to dark personalities in convicted offenders. The main findings in this study were as follows: (1) a higher prevalence of psychological disorders was observed in female compared to male participants, (2) reincarcerated participants scored higher on psychopathology, where substance use disorder was highly significant and (3) dark triad personalities were found to be directly related to psychopathology although different patterns were observed according to each personality dimension.

First, the results are in line with previous research showing a higher prevalence of psychological disorders in female participants (Hales et al., 2016; King et al., 2018) compared to male counterparts. In this respect, it is worth mentioning that most significant differences were observed with anxiety spectrum disorders, mood disorders and thought disorders. Therefore, these results show the direction in which treatments in penitentiary institutions should go, towards the restructuring of thoughts and emotional management, especially in convicted women, considering the significant number of women with a history of previous psychopathology, in particular of emotional, physical and sexual abuse (Caravaca-Sánchez & García-Jarillo, 2020; Gottfried & Christopher, 2017; Caravaca-Sánchez, Fear, & Vaughn, 2019). Furthermore, we consider that it is important to emphasise the inclusion of a gender perspective in prison treatment programs in order to manage both past traumatic emotional history and current concerns as well as emotions derived from family and filial responsibilities, often associated with women, which can be the object of profound distress during their stay in prison.

With respect to the differences analysis between reincarcerated and non-reincarcerated participants, most of the studies stated that mental health problems were related to repeated imprisonment (Bengston et al., 2019; Caravaca-Sánchez et al., 2020; Fazel, Chang et al., 2016; Fazel, Hayes et al., 2016; Fazel & Wolf, 2015; Fazel & Yu, 2011). Our study showed similar results according to other investigations but only drug dependence disorder was significantly higher in those participants who had previously been convicted (Breedvelt et al., 2014; Koehler et al., 2014; Tanner-Smith et al., 2016). This result seems to be consistent with the assumption that recidivism is associated with a decline in the individual's functionality and the engagement in risky behaviours (Kjelsberg & Friestad, 2008; Villanueva et al., 2019; Winter et al., 2018). Therefore, in this study, we observed that the penitentiary context does not appear to be sufficient for rehabilitation, and thus, new policies for the prevention and rehabilitation of substance use disorders are needed.

Correlation analyses among study variables are difficult to interpret as there is limited research associating dark personalities with psychopathology and here lies the main interest of the present work. The scarce previous results already pointed towards the distinction of psychopathological patterns for the different dimensions due to the particularities and idiosyncrasies of each of the dark personality trait (Jonason et al., 2015; Miller et al., 2007, 2010; Reijntjes et al., 2016). If we analyse in detail the results for each dark personality, psychopathy was found to be positively related to all psychological disorders most of them in a significant way. There are specific studies associating psychopathic personality with both externalising (Eisenbarth et al., 2019) and internalising (Lantzman et al., 2018) psychological disorders. Since the psychopathic traits are characterised by a maladaptive, impulsive and risk-taking lifestyle, its dysfunctionality can have a big impact on the individual's mental health with high psychopathic personality traits. In future research, it would be interesting to discern between the two personality and behavioural factors described by Hare (1991) and to observe whether they diverge in terms of presenting specific psychopathological disorders.

The Machiavellian profile is poorly studied and a more detailed analysis is necessary. In the current investigation, Machiavellianism was found to be positively associated with mood and somatisation-related disorders as well as delusional disorder. This dimension showed a less severe psychopathological pattern compared to psychopathic personality. It would be useful to distinguish different profiles among the characteristics of these personality traits and to examine whether its central trait, being interpersonal manipulation, is performed in order to obtain a personal profit or for one's own personal enjoyment.

In a slightly opposite direction, Narcissism was found to be negatively associated with substance dependence disorder and positively with delusional disorder. Once again, following previous research on the study of narcissistic traits in community and clinical samples, we found a certain adaptability of this personality in terms of psychopathology (Caparrós & Villar, 2013; Masferrer & Caparrós, 2017). In this direction, we wonder whether a re-categorisation or a new definition of dark personalities is required since it is being observed that narcissism performs differently from the Machiavellian and the psychopathic of Dark Triad. We found two possible explanations for the justification of this re-categorisation. First, it may be because it is only the extreme narcissism scores that are related to Dark Triad traits. Second, narcissistic traits may be shown to be dysfunctional as far as they are in conjunction with the Machiavellian and psychopathic traits. Narcissistic traits in itself or at lower levels do not appear to be a core trait of the Dark Triad.

Finally, and in relation to the discriminant function analysis, we observed that the psychopathological variable with the greatest influence in classifying those participants with recidivist behaviour was the substance abuse disorder significantly. In addition, as this is an exploratory study, we considered important to analyse and take into account the following variables with the greatest importance on the discrimination (although not in a significant way) of recidivist behaviour, since they provide us relevant information on the clinical and dysfunctional personality variables to be considered for preventive and intervention programs of repetitive criminal conduct. Therefore, in addition to substance abuse, alcohol abuse and post-traumatic stress disorder were the psychopathological syndromes with the highest incidence on reincarceration. These results are interesting and in line with previous research where one of the most notable risk factors for recidivist and antisocial behaviour is substance use and abuse (Breedvelt et al., 2014; Koehler et al., 2014; Tanner-Smith et al., 2016) and a history of a traumatic childhood and adolescent experience (Caravaca-Sánchez, Fearn, Vidovic, & Vaughn, 2019; ; Caravaca-Sánchez, Fear, & Vaughn, 2019; Combs et al., 2019;

Kahn et al., 2020; Wolff et al., 2015). This suggests that the connection with psychopathology and reincarceration indicates a higher probability of multiple jail admissions among offenders who presented symptoms of both conditions. Treatment programs in this respect should cover these needs considering the high prevalence of severe mental disorders in recidivist offenders (Caravaca-Sánchez et al., 2020; Combs et al., 2019; King et al., 2018). In addition to treating both the addictive behaviour and the prior traumatic history, psychological interventions would need to address to the concomitant symptomatology, such as poor impulse control, lack of social skills and related emotional management, all of which can lead to behaviours that make offenders with mental health problems more likely to re-offend.

In relation to the personality variables, we found it worth noting that the narcissistic personality discriminated in negative and then the psychopathic personality in positive. It is recognised that psychopathology and particularly the diagnosis of either personality disorder or substance use disorder are associated with an increased risk of recidivism in criminals (Ducat et al., 2017; Walter et al., 2011). Especially the psychopathic traits (impulsivity, affective shallowness and interpersonal maladjustment) increase the risk of violent behaviour and recidivism (Leung et al., 2019; Pechorro et al., 2019; Stone, 2002). On the other hand, although Cluster B personality disorders have been associated with recidivism (Tikkanen et al., 2009) due to their common characteristics, such as impulsivity and emotional dysregulation, it is true that narcissistic personality traits by definition are somewhat different from this type of dysfunctionality and are characterised by a more measured and adapted lifestyle.

These results emphasise the significance of psychopathology and personality trait diagnoses for the prediction of criminal recidivism behaviour and the need for efficient therapeutic strategies with an accent on past psychological histories of each individual to prevent criminal recidivism in offenders with dysfunctional personality traits. Furthermore, giving the increasing reliance in psychometric instruments for the antisocial behaviour prediction, it may be valuable to identify the impact of previous psychopathology in the dynamic risk factors in prison population.

This study has some limitations. The reduced sample size could be a limitation of this research. In this line, it is important not to generalise and to interpret these results in conjunction with the existing literature and in relation to the current sample. Despite the limited number of participants, we found interesting results and associations, where some of them are of considerable significance. Moreover, this research is comparable in number of participants with similar studies on the same topic analysed in the incarcerated population. In addition, the heterogeneity of the participants could be a limitation but it responds to the reality of this specific sector of the population. Therefore, we consider interesting to preserve the variability of the sample of participants in certain variables in order to have an ecological knowledge of the study question. We also used self-report methods. In future research, it would be recommendable to use a multi-method-multi-measure approach. However, it is essential to consider that the intricacy of the organisational system (sample access restrictions and protocols as well as the time cost for each personal assessment) will make it challenging to obtain these qualitative results. Regarding the assessment methodology used, it is worth mentioning that the Millon Clinical Multiaxial Inventory can be controversial due to concerns of low sensitivity and predictive power and also the risk of over-pathologising. However, this test has often been used in forensic population (Dyer, 2005; Eastin et al., 2021; Johnson & Elbogen, 2013). In effect, the MCMI-III test has also proved strengths in forensic settings that make it a valuable tool for penal psychologists, including strong internal consistency and content reliability, objective cut-off values and standardised interpretation guidelines and inclusion of scales that measure response styles as well as possible effects derived from the social desirability and simulation inherent to criminal contexts. Bearing all these aspects, all the participants' answers have been treated considering the strict interpretative guidelines as well as the specific reliability scales. Last of all, while in this particular type of forensic population, there may be result contamination processes due to cognitive fatigue or social desirability; we must emphasise that these results have been analysed taking into account all these cognitive biases.

From the analysis of the results and conclusions obtained from this exploratory study, different practical implications are derived that make this work an original study and invite us to take it as a starting reference for further research on the subject. First, these results indicate that the psychopathological characteristics of women in prison are different from those of convicted men. For this reason, it is particularly important to design psychological treatment programs that take a gender perspective into account. These programs should consider: (1) psychopathological

background and previous traumatic history, (2) psychological condition derived from her imprisonment, bearing in mind that the penitentiary institution is, per se, a hostile environment that requires constant psychosocial adaptation and (3) family and social responsibilities left behind as a woman with their entry into prison since they can be a great source of added concern and stress. Therefore, these programs are not only intended to serve as emotional relief during their stay in prison but also as a way to help these women begin a process of self-knowledge, psychological well-being and personal empowerment to manage their thoughts and emotions, as well as future adversities once their sentence has been served and their reintegration has been initiated. Second, and in relation to reincarceration, treatment programs for recidivist behaviour would have to cover the needs of these individuals considering the increased presence of severe mental disorders in this specific population. In other words, it is entirely necessary to intervene on both the addiction problematic and the previous traumatic history focus, which are disorders most strongly linked to recidivist behaviour in this study. In addition, psychological intervention would need to address the concomitant symptomatology of these particular disorders, such as deficient impulse control, lack of social skills and emotional management, all of which can lead to a better adaptation of this population, to an adequate problem solving strategies and hence to a greater probability reintegration. Given the recent reliance on psychometric instruments developed for the prediction of antisocial behaviour, there may be considerable value in identifying the impact of prior psychopathology associated with dynamic risk factors in the prison population.

These risk factors are also limiting the development of effective psychological interventions. In conclusion, there is a necessity for research exploring long-term patterns of reincarceration for both men and women including mental health disorders and personality models. Due to the results in future lines, we wondered whether psychopathology could be a mediating variable between dark personality patterns and antisocial behaviour.

CONFLICT OF INTEREST STATEMENT

Gloria Brugués Català and Beatriz Caparrós Caparrós have declared no conflicts of interest.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analysed in this study.

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