INVITED PAPER

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Original Research Paper

Exploring the Profiles of Drug Offenders in Croatia*

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In Croatian prisons, there is a relatively high prevalence of offenders convicted for abuse of narcotic drugs (Art173/2, CC/97) who are heterogeneous in terms of their characteristics. Determining the relationship between the characteristics of those offenders and their behaviour before and during the execution of prison sentences helps predict their future behaviour. Therefore, this study aims to determine the profile of perpetrators of crimes related to the abuse of narcotic drugs, to investigate potential differences among subgroups of these perpetrators, and to examine whether they differ in the assessed risk for future criminal behaviour/probability of recidivism, penitentiary opinion on conditional release (CR), and Conditional release Committee decision on CR. We analysed penitentiaries' reports with the opinion on CR for 111 male drug abuse offenders (M_{age} = 31; SD_{age} = 6.51), containing rich data related to various offenders' characteristics and behaviours. Specifically, we analysed offenders' socio-demographic and anamnestic data, previous convictions, imposed security measures with sentence, proposed special obligations with CR, elements from the individual programs for the execution of prison sentence, mitigating and aggravating circumstances of committing the crime, positive reasons in prisoners' application for CR, and penitentiaries' explanations in support of the prisoners' application for CR. The conducted cluster analysis did not show statistically significant differences between subgroups of offenders in the assessed risk for future criminal behaviour/probability of recidivism, penitentiary opinion on CR, and

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Conditional release Committee decision on CR, but there were low to moderate correlations between specific offenders' characteristics and these variables.

KEYWORDS: drug offenders / characteristics / penitentiary report with the opinion on conditional release / risk for criminal behaviour

Introduction

The relationship between substance misuse and offending has for long attracted scholars' attention, and there are three key models explaining it: (1) substance use leads to crime; (2) crime leads to substance use; (3) both substance use and crime are caused by the same factors (Anthony & Forman, 2003; White & Gorman, 2000). Drug offenders are primarily men in their 30-is, single, who had a previous criminal record and were drug addicted (Taxy et al., 2015; Ünlü & Demir, 2012), and among male prisoners, prevalence estimates of drug abuse and dependence vary from 10% to 48% (Fazel et al., 2006). Drug users may be especially likely to earn money *via* drug sales, and in the sample of adult offenders convicted for the "resale" of narcotic drugs in Croatia, 64.3% of them were in contact with drugs for personal use (Cvjetko, 2003). Cvjetko (2003) refers to this type of offence as "addiction crime" since among those offended for drug "resale" mainly were drug addicts who traded small quantities of heroin (Cvitanović et al., 2010), and more than two-thirds of adults convicted for the "resale" of narcotic drugs (Art173/2, CC/97) were sentenced to prison (Cvitanović et al., 2010; Cvjetko, 2003).

According to Durose et al. (2014), in the United States, drug offenders' recidivism rate (measured by a combination of arrest charge, court disposition, incarceration sentence, and custody information) was high, 76.9% over the first 5 years after the release, and 51.2% released drug offenders were arrested again for drug-related crime. In Europe, the recidivism rate for drug abuse offenders was somewhat lower and varied among researched countries, from 21% (United Kingdom) to 52% (Denmark) (Yukhnenko et al., 2023).

Contemporary risk models acknowledge that drug use, as well as criminal behaviour, stems from a variety of factors, such as individual traits, family conditions and peer influence (Rhodes et al., 2003). Bonta and Andrews (2017) argued that "central eight" risk criminogenic factors exist. Based on the established relationship with offending, they can be divided into "big four": history of antisocial behaviour, antisocial personality pattern, antisocial cognition, and antisocial associates, and "moderate" four": family, school, leisure/recreation, and substance abuse (Eisenberg et al., 2019; Katsiyannis et al., 2018).

In a recent meta-analysis, significant predictors of recidivism following release were previous incarcerations, convictions and arrests, being male, having

committed a property-related index offence, a history of substance misuse, previous employment problems, holding pro-criminal attitudes and committing prison infractions (Goodley et al., 2022). Among offenders with drug abuse problems, crime recidivism was predicted by heroin usage, as well as the history of psychiatric in-patient treatment, difficulty controlling violent behaviour, male gender, and homelessness (Håkansson & Berglund, 2012).

Recognition of the multi-factorial nature of drug use, as well as offending, emphasises a "multiple risk factors" approach in tackling offenders' criminal propensities, probability of recidivism, responsivity across important characteristics, and specific rehabilitative needs (Bahr et al., 2012; Pelissier & Jones, 2005). The classification of offenders into types based on specific characteristics has a long tradition in criminology, and this perspective assumes the possibility that there are different categories of offenders, each following distinct pathways in and out of crime (Brennan et al., 2008).

Researchers on drug-crime relationships emphasise the importance of conducting research that focuses on the consistencies and variations between subcategories of drug misuse and criminal activity and, further, how the association between drug misuse and criminal activity may vary across specific characteristics (Farabee et al., 2001). Several studies examined offender types based on risk/need profiles (Brennan et al., 2008; Onifade et al., 2008). For example, Onifade et al. (2008) identified five delinquency risk pattern subtypes in their sample: one low risk, two within the moderate range, and two in the high range. Reoffence rates progressively increased for the three risk levels, and the combination of risks across the family, leisure time, and education domains significantly contributed to higher offence rates of the clusters within the moderate range.

Using cluster analysis, Simourd et al. (1994) found five subtypes of offenders classified based on 10 domains of "central eight" factors (Bonta & Andrews, 2017). Also, research revealed that the risk factors could predict crime severity (Shishane et al., 2023) and the severity of recidivism could be different for each subgroup of offenders (e.g., witnessing domestic violence for serious violent offenders; involvement in incidents in the treatment facility for sex offenders) (Mulder et al., 2012). However, there is still lasting debate between categorical (discrete groups) versus (continuous) dimensional approaches to the representation and analysis of criminal behaviour (Osgood, 2005). This is accompanied by the revelation of a different number of offender subtypes across studies based on the various potential criminogenic factors (Brennan & Breitenbach, 2009; Goodley et al., 2022), resulting in a knowledge gap that could be overcome by pursuing additional research in this area.

Study Aims

This research aims to investigate the profile of drug offenders, explore potential differences among subgroups of drug offenders, and investigate whether they differ in the risk for future criminal behaviour/probability of recidivism, penitentiary opinion on CR, and Conditional release Committee decision on CR.

Based on previous research on risk criminogenic factors and their relationship with future criminal activities (e.g., Bonta & Andrews, 2017; Goodley et al., 2022), the understanding that there are established risk factors for drug abuse (McCuish, 2017; Rhodes et al., 2003), that drug abuse often coincides with criminal involvement (Anthony & Forman, 2003; White & Gorman, 2000), and that individuals with drug abuse issues face a high probability of crime recidivism (Langan & Levin, 2002) it was hypothesised that cluster groups would differ in their risk for future criminal behaviour/probability of recidivism, penitentiary opinion on CR, and Conditional release Committee decision on CR due to established differences in criminogenic factors.

Methods

Sample and Procedure

In this study[6], data were extracted from the penitentiaries' reports with the opinion on CR (*penitentiaries' reports*) of 111 offenders convicted of abuse of narcotic drugs. It was defined in the Croatian Criminal Code (CC) as "whoever, without authorisation, manufactures, processes, sells or offers for sale or for the purpose of reselling buys, keeps, distributes or brokers the sale and purchase of, or, in some other way and without authorisation, puts into circulation, substances or preparations which are by regulation proclaimed to be narcotic drugs shall be punished by imprisonment for one to twelve years" (Art173/2, CC/97).

The analysed offenders served prison sentences in two Croatian penitentiaries, and on average, they were sentenced to 2 years and 4 months (SD = 1.09). The offenders were all males (M_{age} = 31; SD = 6.51, age range 19 to 55). The majority of them had at least a secondary school diploma (78.4%). Also, 71.2% of them were not married and did not have children.

Analysed penitentiaries' reports cover many offender characteristics and behaviour descriptions. Information in those penitentiaries' reports are all in narrative form, based on data available about the offenders from their childhood onwards, from interviews to anamnestic and diagnostic data from various sources.

[6] The study was carried out with the approval of the Directorate for the Prison System and Probation of the Croatian Ministry of Justice, Public Administration and Digital Transformation.

After thoroughly reading penitentiaries' reports, researchers extracted variables for analysis and developed a matrix for data coding and entry. Two raters independently reviewed 20 randomly selected reports, discussed all discrepancies, and determined agreed-upon norms for data coding and entry. The subsequent analysis used only variables with less than 40% missing values. Specifically, a total of 24 variables were analysed. There were three criterion variables: risk for future criminal behaviour/probability of recidivism.[7] (*risk assessment*), penitentiary opinion on CR (*penitentiary opinion on CR*), Conditional Release Committee decision on CR (*Committee decision on CR*), and 21 predictors (see *Appendix 1 for details*).

Data Analysis

After descriptive statistics, using R software (R Core Team, 2020), the differences in risk assessment, penitentiary opinion on CR, and Committee decision on CR were tested by cluster analysis to delineate subgroups in datasets. Further classification of participants into clusters was performed in SPSS 23 (IBM Corp, 2015) using K-means cluster analysis. Then, the differences between clusters on specific variables were tested by *t*-test and χ^2 test. Additionally, bivariate correlations were analysed between specific variables, risk assessment, penitentiary opinion on CR, and Committee decision on CR.

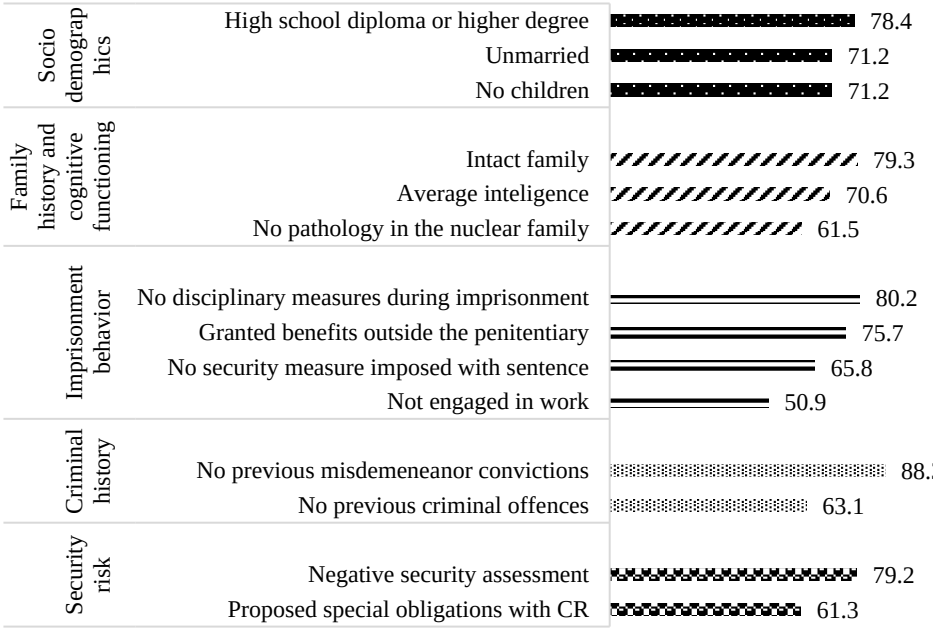
Results

The drug offenders in our sample were mostly coming from intact families and had no pathology in their nuclear family, while most of them had average intelligence. Regarding criminal history, for more than 60% of them, there were no recorded previous criminal offences, and for more than 80%, there were no recorded misdemeanour offences. During their imprisonment, about half of the drug offenders engaged in work, and three-quarters used benefits outside the penitentiary; the majority did not have a security measure imposed with their sentence and were not subject to disciplinary measures during imprisonment (Figure 1).

[7] Risk for future criminal behaviour/probability of recidivism was also in narrative form based on available offenders' data, not on standardised risk assessment instruments.

Figure 1

Drug offenders' profile on bivariate categorical variables (%)



On average, there was a higher number of mitigating circumstances than a number of aggravating circumstances related to the crimes committed by drug offenders. While prisoners, on average, mentioned two positive reasons in their application for CR, the penitentiaries' explanations mentioned, on average, three explanations in support of the prisoners' application for CR. Most of the offenders were graded as being successful in pursuing individual programs for the execution of prison sentences, and almost two-thirds admitted the crime they committed while showing regret for their behaviour. More than half of the offenders were assessed as having a high risk for possible recidivism. The penitentiary opinion on CR was in favour of release for almost two-thirds of them, and the Committee decided on CR for 80% of drug offenders (Table 1).

Table 1

Drug offenders' profile on continuous variables and multivariate categorical variables (%)

	Variables	*M*	*SD*	Range
Number of:	Mitigating circumstances	2.80	1.92	0–8
	Aggravating circumstances	0.45	0.61	0–3
	Positive reasons in prisoners' application for CR	2.29	1.00	0–5
	Penitentiaries' explanations in support of the prisoners' application for CR	2.97	2.42	0–13
		N		%
Level of success in individual programs for the execution of prison sentence				
	Satisfactory	15		13.5
	Successful	84		75.7
	Extremely successful	12		10.8
Attitudes towards the offence				
	Doesn't admit, doesn't regret	3		2.7
	Partially admit, doesn't regret	10		9.0
	Partially admit, some regret	18		16.2
	Admits and regrets	80		72.1
Risk assessment				
	No recidivism	14		12.6
	Probable recidivism	70		63.1
	Certain recidivism	27		24.3
Committee decision on CR				
	Release	92		82.9
	Postpone	13		11.7
	Reject	2		1.8
	Prison director to decide	4		3.6
Penitentiary opinion on CR				
	Release	75		67.6
	Postpone	29		26.1
	Reject	1		0.9
	Prison director to decide	6		5.4

K-means cluster analysis indicated that the three-cluster solution did not result in the acceptable distribution of participants into clusters ($N < 20$ in one group) (Dalmaijer et al., 2022). The solution with two clusters was acceptable regarding the distribution of participants into the clusters ($N_1 = 55$; $N_2 = 25$).

In the first cluster, offenders were younger ($M = 27.11$, $SD = 3.27$) than in the second cluster ($M = 37.71$, $SD = 4.95$) ($t\ (78) = 11.37$, $p < .01$) and fewer of them had children (56.3%) than those in the second cluster group (16.2%) ($\chi^2\ (1) = 7.67$, $p < .05$). Furthermore, in the first cluster group, there were more those who confessed and regretted their crime (53.8%) than in the second subgroup (17.5%) ($\chi^2\ (3) = 7.88$, $p < .05$).

Table 2

Chi-square test (χ^2) testing the differences between two clusters on risk assessments, Committee decision on CR and penitentiary opinion on CR

	Clusters		
Variables	χ^2	*df*	*p*
Risk assessments	1.37	2	.51
Committee decision on CR	3.80	1	.17
Penitentiary opinion on CR	2.83	1	.18

Note. For variables Committee decision on CR and penitentiary opinion on CR only data in categories "postpone" and "release" are used in further analysis.

No significant differences were found between the clusters in risk assessments, Committee decision on CR, and penitentiary opinion on CR (Table 2).

Table 3

Spearman's ρ correlation between offenders' characteristics and risk assessments, Committee decision on CR and penitentiary opinion on CR

Variables	Risk assessments	Committee decision on CR	Penitentiary opinion on CR
Children	.01	-.04	-.21*
Previous prison sentence	.27**	.10	.01
Security measures imposed with sentence	.31**	.19	.14
Work engagement in prison	-.36**	.05	.22*
Attitudes towards the offence	-.18	.01	.24*
Using benefits outside the penitentiary	-.02	.23**	.61**
Proposal of special obligations with CR	.13	-.31**	-.21*
Level of success in individual programs for the execution of prison sentence	-.05	.07	.22*
Number of penitentiaries' explanations in support of the prisoners' application for CR	-.03	.19*	.38**

Note. Only variables having significant relationship with at least one criterion variable are showm.
*$p < .05$. **$p < .01$.

Bivariate correlations (Table 3) indicated that higher risk assessment was negatively related to work engagement in penitentiary and positively to previous prison sentences and security measures imposed with the sentence. Positive Committee decision on CR and positive penitentiary opinion on CR were positively related to using benefits outside the penitentiary, a higher number of penitentiaries' explanations in support of the prisoners' application for CR, and negatively related to the proposal of special obligations with CR. Moreover, positive penitentiary opinion on CR was positively related to work engagement in penitentiary, admittance and regret because of the offence, and higher level of success in individual programs for the execution of prison sentence, while negatively to having children and proposal of special obligations with CR.

Discussion

This research aimed to investigate the profile of drug offenders, explore potential differences among subgroups of drug offenders and investigate whether they differ in the risk for future criminal behaviour/probability of recidivism, penitentiary opinion on CR, and Conditional release Committee decision on CR. It was expected that cluster analysis would result in a larger number of clusters and that clusters would be created based on a larger number of characteristics (e.g., Onifade et al., 2008; Simourd et al., 1994), so obtaining only two clusters of offenders that differed only in age, having children and attitudes toward the offence prevents us from talking about well-separated distinct types of offenders. Those differentiated characteristics were mainly not proven relevant for offending/recidivism in previous research (e.g., Bonta & Andrews, 2017; Eisenberg et al., 2019; Goodley et al., 2022; Katsiyannis et al., 2018). Consequently, it was not surprising that there were no significant differences in risk assessments/probability of recidivism, penitentiary opinion on CR, and Committee decision on CR between established subgroups of drug offenders.

Taking into consideration that study variables only partially covered traditional risk factors (i.e. "central eight", Bonta & Andrews, 2017; Goodley et al., 2022), it was not surprising that only several significant but mainly weak to moderate correlations were revealed between observed characteristics and risk assessment/higher probability of recidivism, penitentiary opinion on CR, and Conditional release Committee decision on CR. Type and direction of characteristics correlated to outcome variables in this research were expected (e.g., higher risk assessment was negatively related to work engagement in penitentiary and positively to previous prison sentences and security measures imposed with the sentence) (Bonta & Andrews, 2017; Eisenberg et al., 2019; Goodley et al., 2022; Katsiyannis et al., 2018), however, due to the conceptual similarity of outcome variables, it was expected that there would be more characteristics related simultaneously to penitentiary opinion on CR, and Committee decision on CR. However, there is the possibility that the interplay of different characteristics lessens their mutual effect since offenders' behaviour is a product of multivariate complexity across several interacting explanatory domains (Walsh, 2002).

While risk assessment was related more to the variables from the offenders' past (e.g. previous prison sentences, security measures imposed with a sentence), penitentiary opinion on CR and Committee decision on CR were mainly related to the offenders' more recent behaviour while serving a sentence (e.g., using benefits outside penitentiary). Only work engagement in the penitentiary was related simultaneously to a lower-risk assessment of criminal recidivism and a positive penitentiary opinion on CR. Given that conditions and practices in the penitentiary resemble life in the community, behaviours that reflected their

successful adaptation (Haney, 2003) were seen as important determinants while deciding on CR. Moreover, previous research supported the possibility that in-prison behaviour helps predict future desistance from crime (Walters, 2020).

Study limitations

It is important to acknowledge certain limitations that may have influenced the results. Taxonomic studies require larger samples for adequate reliability and stability of the groups/types (Milligan, 1996). After performing cluster analysis, our sample size was relatively small (Dalmaijer et al., 2022). Comprehensive coverage of risk and need factors is needed when identifying or describing explanatory patterns (Brennan et al., 2008; Lenzenweger, 2004). We were restricted in our analysis by prearranged variable sets, missing values, and variables that were mainly categorical, which limited the inclusion of certain variables in the analysis. The exclusion of potentially critical differentiating factors could "undermine the ability to identify, differentiate or fully describe the structure of any explanatory pattern" (Brennan & Breitenbach, 2009, p.12), and the "inclusion of irrelevant variables among the classification features could blur the boundaries between clusters since they have no discriminatory power" (Brennan & Breitenbach, 2009, p. 8). Also, our criterion variables were only potential approximations of offenders' future criminal activity, and they were not obtained by standardised instruments. Lastly, due to the shortcomings of cluster analysis, there is the possibility that other methods (e.g. latent class analysis) are more appropriate for this type of analysis (Stefurak & Calhoun, 2007; Vermunt & Magidson, 2004).

Despite the limitations, the analytical approach appears promising for exploring the relationship between offenders' profiles and their future endeavours. Researching key risk and need factors is crucial for effective prediction, mitigating adverse outcomes such as criminal recidivism (Bahr et al., 2012), and aligning offenders with treatments tailored to their specific characteristics (Mattson et al., 1993).

Conclusion

Obtained clusters of offenders in this research only differed in age, having children and attitudes toward the offence, preventing us from talking about well-separated distinct types of drug offenders. Consequently, no differences were shown between the clusters in risk assessments, Committee decision on CR, and penitentiary opinion on CR. Nevertheless, significant correlations were found between specific offenders' characteristics and risk assessments, Committee decision on CR, and penitentiary opinion on CR.

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Appendix 1

List of variables included in cluster analysis

Variables	Type	
Level of education	Categorial	Completed primary school
		Secondary school diploma or higher degree
Marital status	Categorial	Unmarried /Married
Children	Categorial	No / Yes
Intact family	Categorial	No / Yes
Pathology in the nuclear family	Categorial	No / Yes
Intelligence	Categorial	Below average and borderline / Average / Above average
Previous criminal offences	Categorial	No / Yes
Previous misdemeanour convictions	Categorial	No / Yes
Security measure imposed with sentence	Categorial	No / Yes
Work engagement in penitentiary	Categorial	No / Yes
Imposed disciplinary measures during imprisonment	Categorial	No / Yes
Usage of benefits outside the penitentiary	Categorial	No / Yes
Proposed special obligations with CR	Categorial	No / Yes
Level of success in individual programs for the execution of prison sentence	Categorial	Satisfactory
		Successful
		Extremely successful
Attitude towards the offence	Categorial	Doesn't admit, doesn't regret
		Admits, doesn't regret
		Partially admits, some regret
		Admits and regrets
Security assessment for using benefits outside the penitentiary	Categorial	Negative /Positive
Age	Continuous	
Number of mitigating circumstances	Continuous	
Number of aggravating circumstances	Continuous	
Number of positive reasons in the prisoners' application for CR	Continuous	
Number of penitentiaries' explanations in support of the prisoners' application for CR	Continuous	