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Impulsivity and Alcohol and Other Drugs Among Adult Inmates: A Systematic Review

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Impulsivity and Alcohol and Other Drugs Among Adult Inmates: A Systematic Review

Short Title: Impulsivity and substance use in inmates

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Abstract

Objective: A substantial proportion of the incarcerated population is imprisoned for substance-related offenses, including illegal possession and drug-induced violent crimes. Given this context, this study aimed to investigate, through a systematic review of the literature, the relationship between impulsivity and the use of alcohol and other drugs among incarcerated adults, considering the contributions of cognitive neuroscience to understanding this association in populations characterized by deviant behavior.

Methods: This systematic review, conducted in accordance with PRISMA guidelines, examined 547 studies retrieved from PsycInfo, PubMed/Medline, Embase, SCOPUS, and Web of Science.

Results: After applying the inclusion and exclusion criteria, nine studies were selected for full analysis. The findings revealed a significant association between impulsivity and a history of substance use, especially in cases involving higher levels of consumption. Low educational attainment was also a prevalent characteristic among the analyzed samples.

Conclusions: These findings underscore the importance of prevention and intervention strategies that integrate neuropsychological and educational components as fundamental elements of treatment and social reintegration efforts.

Keywords: Impulsivity; alcohol; drug; prison; inmate; adulthood.

Introduction

In Brazil, there has been a substantial increase in the prison population, with growth exceeding 575% over the past three decades, currently ranking third worldwide, with more than 840,000 incarcerated individuals.[1–3] Drug-related offenses are cited as the justification for approximately 30% of incarcerations in the country, highlighting that the war on drugs plays a central role in the expansion of the prison population in Brazil.[3,4]

A variety of sociocultural factors have been identified as contributing to the increase in incarceration rates.[5–7] Among them, institutional selectivity disproportionately affecting marginalized populations,[4] legislative changes over the years,[7,8] and the worsening of social inequalities — characterized by limited access to education and employment, combined with rising violence in communities — stand out.[9,10] These

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dynamics are evident when analyzing the profile of the Brazilian incarcerated population, which is predominantly male (95.66%), Black (64.01%), and aged between 18 and 34 years (59.16%). Additionally, a significant portion of this population has not completed elementary school (46.7%) or high school (75.4%).[3]

The complexity of arrested adults[5,6] prompts a closer investigation into specific aspects, including the use of alcohol and other substances. In this regard, Mundt et al.[11] conducted a meta-analysis to examine the prevalence of substance use during incarceration in low- and middle-income countries. The findings indicate that countries in the Americas, such as Brazil and Mexico, report notably high rates: 58% for nicotine use (compared to a global average of 55%), 27% for alcohol use (global average of 16%), and 34% for illicit drug use (global average of 24.5%). These results underscore that, although substance use in prison is a global concern, its prevalence appears to be particularly elevated in certain Latin American contexts.

A key variable for understanding substance use is developmental stage and young adults, aged 18 to 29—an age group that accounts for nearly half of the incarcerated population—are more prone to alcohol and drug use,[12–14] and tend to exhibit higher levels of impulsivity.[15,16] Furthermore, individuals in this age group are more likely to engage in risky situations, as the prefrontal cortex, responsible for inhibitory control, is not yet fully developed.[17–21]

Evidence suggests that brain maturation extend to the 3rd decade of life.[19,22–24] The late maturation of the prefrontal cortex occurs because the process of neuronal differentiation and the development of synaptic connections extend into the third decade of life, due to the complexity of the cognitive functions it supports and the need for the progressive refinement of neural systems through an initial phase of

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overproduction followed by the selective elimination of synapses and neurochemical components. [25–27]

Neurobiological findings with adult population of different ages also corroborate the relation between increasing in impulsivity-tendency to make poorly thought-out and sudden decisions, despite negative consequences, involving little or no thinking on behavior[18,28,29] – and the increase in aggressive behaviors,[30] besides a higher probability of risky behaviors, given the staged development of subcortical rewarded networks and prefrontal control.[20]

Chronic use of psychoactive substances has been consistently associated with impairments in executive control, manifested by deficits in decision-making and inhibitory regulation, and consequently by increased impulsivity.[31] In a study conducted analyzing different drugs, the results showed that there is correlation between alcohol, cannabis and cocaine abuse followed by verbal fluency and decision-making prejudice.[32]

It is important to emphasize that, just as substance abuse is associated with higher levels of impulsivity, elevated impulsivity is also related to substance abuse, forming a self-reinforcing cycle that produces significant impairments in individuals' lives.[33,34] High-risk behaviors linked to this process include unprotected sexual activity, self-harm, suicide, and violence.[21,35–37] Within the prison context, these risks become even more concerning, as they may manifest in rule-breaking behaviors, increased vulnerability to mental health problems, and, consequently, a higher likelihood of criminal recidivism and re-incarceration, in addition to being associated with elevated rates of overdose-related mortality.[29,38–43]

Investigating the link between alcohol and other drug use and impulsivity in incarcerated adults, based on neuroscience evidence, contributes to expanding

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knowledge in this field. We need to highlight the huge difficulty to assess this group of people, which are in prison. Moreover, the scarcity of studies on the topic highlights the need for a systematic review, which can provide a more comprehensive and multidimensional understanding of the issue. The main objective of this study was to carry out a systematic review of the literature in order to understand through empirical evidence whether there is and what is the relationship between impulsivity and the use of alcohol and other drugs in adults who are serving time. In addition, we sought to investigate the next topics: (1) Identify the most commonly used instruments for assessing impulsivity and the use of alcohol and other drugs, as well as the methods employed; (2) Analyze and interpret the results reported in these studies; and (3) Examine how the literature has addressed impulsivity in younger adults compared to older adults. The hypothesis posits that impulsivity and the use of alcohol and other drugs are directly related among young inmates.

Method

The present systematic review is structured in accordance with the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses - PRISMA.[44,45] Accordingly, and in compliance with PRISMA guidelines, the review protocol was prospectively registered on the PROSPERO platform (registration number: CRD420251009228).

Research Strategy

The following research question was formulated: "What is the relationship between impulsivity and the use of alcohol and other drugs among incarcerated adults?" Similarly, the PEO (Population, Exposure, Outcome) strategy was developed, which

includes: (P) incarcerated adults, (E) impulsivity and the use of alcohol and drugs, and (O) the relationship between these variables.

A search for articles was carried out in the following databases: PsycInfo, PubMed/Medline, Embase, SCOPUS, and Web of Science. The descriptors used were: Impulsive Behavior, Alcohol OR Drugs, and Prisoners. They have been applied identically in all databases, but with variations due to inherent terms used by each platform.

Eligibility Criteria

The inclusion criteria adopted were as follows: studies published between June 2013 and February 2025, available in full text in Portuguese, English, or Spanish, and focused on incarcerated adults aged 18 and older. Additionally, studies examining variables such as impulsive behavior and substance use were also considered for inclusion. The exclusion criteria included literature review articles or meta-analyses, theses, dissertations, book chapters, undergraduate theses, or conference publications, as well as studies employing qualitative methods. In addition, studies primarily focused on psychopathologies – such as bipolar disorder, schizophrenia, or other severe mental illnesses – were also excluded.

Selection Process and Data Extraction

In accordance with the PRISMA guidelines,[45] after searching the databases, two independent and blinded researchers screened the articles using the Rayyan platform. In the initial phase, studies were selected based on the title, abstract, and keywords, applying the predefined inclusion and exclusion criteria. Subsequently, a full-text review was conducted to determine study eligibility. In cases of disagreement between

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reviewers, discrepancies were resolved by consensus or, if necessary, through the intervention of a third independent reviewer.

The data extraction strategy was developed by the research team and includes the following information: author, year, country, study design, sample size, measures used, substances analyzed, relationship between the variables of interest, and main findings. Data extraction was carried out entirely by the principal author.

Study Risk of Bias Assessment

The primary reviewer independently evaluated the risk of bias in the included studies using the Joanna Briggs Institute (JBI) critical appraisal tools, selected according to the specific study design.[46] Any discrepancies were addressed through discussion, and when required, a third independent reviewer was consulted to reach a consensus.

Results

Selection and Characteristics of Included Studies

The database search resulted in 547 relevant articles. After removing duplicates, outdated articles, and screening titles, abstracts, and full texts,[45] 9 articles were included in the review (see Figure 1).

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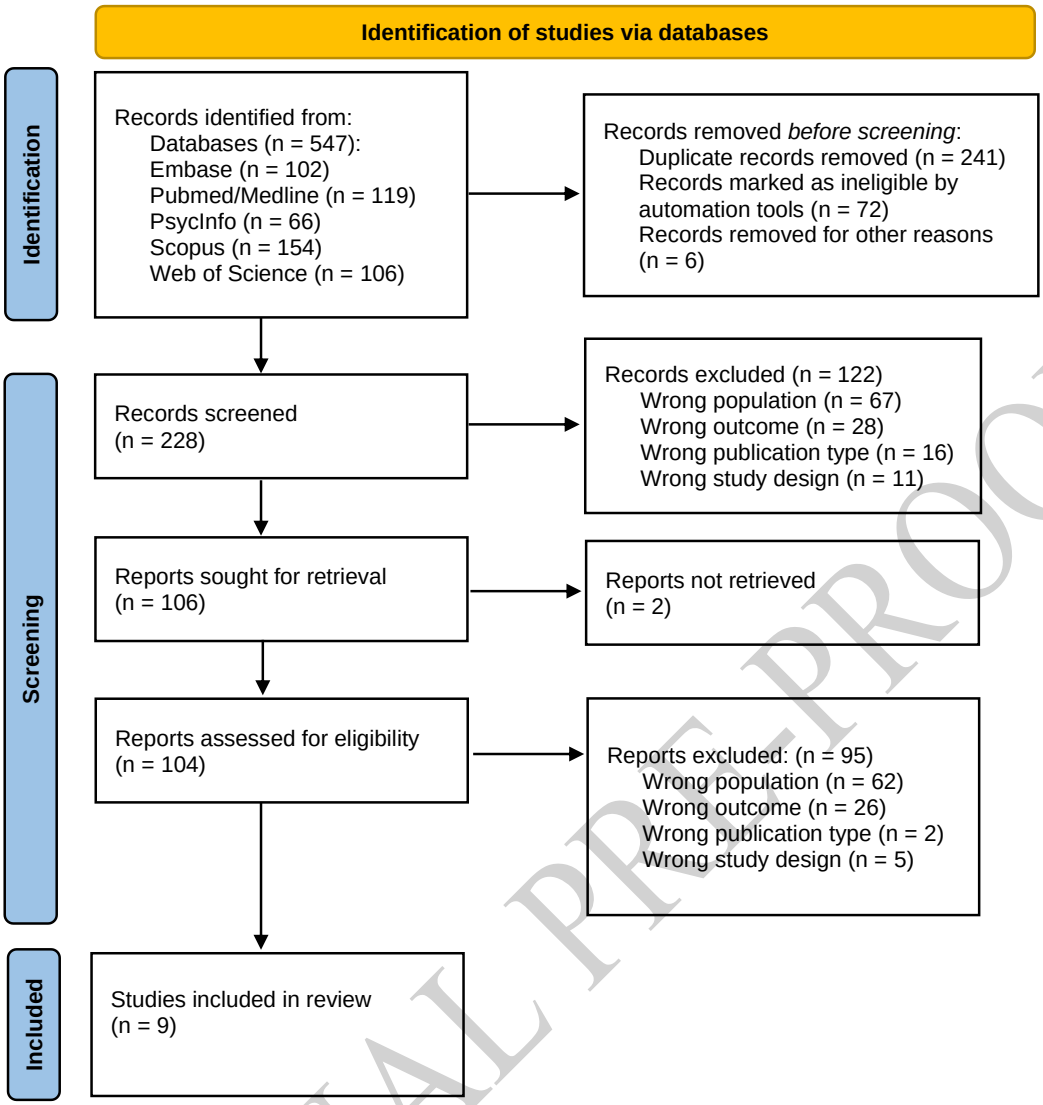

Figure 1 - PRISMA flow diagram for systematic review

Note. Selection of articles according to the PRISMA protocol.

The studies included in this review were published between 2013 and 2024 and demonstrated variability in both research design and geographic origin. Of the nine studies, one employed a longitudinal or quasi-experimental design,[47] seven utilized comparative cross-sectional designs,[48–53] and two adopted correlational cross-sectional designs [54,55]. Regarding geographic distribution, one study was conducted in Spain, one in Australia, one in Italy, two in the United Kingdom, two in Brazil, and

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two in the United States (see Table 1). All the studies analyzed were published in English.

Participants

The number of participants across the included studies ranged from 49 to 2,388, with a total sample of 4,288 individuals and a mean of approximately 476 participants per study. Most studies included only male participants (67%), while 11% included only female participants, and 22% comprised mixed-gender samples. The weighted mean age of participants was approximately 34.25 years.

Although not all studies reported educational attainment, the available data indicate a predominance of low to medium levels of education among participants. In several studies, the majority of individuals had completed no more than the 7th grade or had not finished high school, with reported rates of low educational attainment ranging from 62% to 74.9%. One study reported an average of 8.14 years of schooling. Overall, the findings suggest a consistent trend of limited formal education among the study populations of adult inmates.

Information about previous participants' work has been mentioned in one of these studies.[48]

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Table 1 - Description of the studies analyzed in this review (n = 9)

First author / Year / Local	N / Mean Age ± DP	Education	Measure	Design	Drugs scanned	Main Results
Capuzzi[51] / 2024 / Italy	479 men / 41.7 ± 12.9	82.9% had low or medium educational attainment	BIS-11, JSAT	Cross-sectional comparative study	Alcohol, Cannabis, Cocaine, Opioids and Others	Among 479 participants, 57.6% had a history of previous imprisonment. The analysis identified that older age, being married or in a relationship, lower educational attainment, housing instability, low or no income, recent cocaine use disorder, and a history of non-suicidal self-injury (NSSI) were significant predictors of repeated incarceration. Additionally, recurrent incarcerations were associated with a higher prevalence of personality disorders and elevated levels of attentional and motor impulsivity.
Eriksson[54] / 2021 / Australia	262 men, 40 women / 42.6	63.3% completed high school, 32.7% not completed high school	AUDIT, CTS, DAST-10, PCS-Q, STAXI-2, SCS,	Cross-sectional correlational study	Alcohol, cannabis, hallucinogens, opioids, sedatives, and stimulants.	Offenders with high levels of substance use are more likely to exhibit elevated anger, impulsivity, and risk-taking compared to those with lower levels of problematic substance or alcohol use. A substantial proportion of individuals convicted of murder or manslaughter report significant alcohol and/or drug-related issues in the year preceding the offense. Those with chronic substance use problems are also more likely to have experienced adverse childhoods, prior criminal involvement, low socio-economic status, and poor self-regulation.
Aguiar[48] / 2021 / Brazil	179 men / 31.67 ± 9.44	62% had 7th grade or less education, and 38% had more than 7th grade	AUDIT, BIS, DAST, NEO-FFI	Cross-sectional comparative study	Alcohol, cannabis, cocaine, and multiple	Reincarcerated drug traffickers were younger, more likely to be non-White, had higher pre-sentence illicit drug use, and more severe alcohol use than non-recidivists. No significant difference in impulsivity was found. Neuroticism, extraversion, alcohol severity, and prior drug use were positively correlated with recidivism. Openness to experience was unrelated to recidivism but associated with better school performance.
Hardy[47] / 2019 / United Kingdom	49 men / 34.81 ± 12.97	Not mentioned	AEQ, AASE, ARA, DAOS, MASQ, STAXI-2, UPPS-P	Longitudinal study, without a control group	Alcohol	A population with a history of alcohol-related violence and a medium to high level of recidivism was analyzed. Improvements were observed in alcohol expectancies (sociability and liquid courage), impulsivity (negative urgency – UPPS), and trait aggression, along with increased self-confidence in managing alcohol use and offending behavior. No improvements were found in the remaining UPPS subscales.
Dargis[52] / 2018/ United States	2,388 men / 31.95 ± 7.56	All participants demonstrated reading proficiency at or above the fourth-grade level	ASI-Lite, BDI-II, Digits backward, MPQ-BF, PCL-C, PCL-R, SCID, STAI, UPPS-P, WAIS-R, WRAT-3	Cross-sectional comparative study	Alcohol, cannabis, opioids, cocaine, and chronicity	Among all the variables evaluated, in all six groups of personality, impulsivity, and drug use were directly proportional. (For ex; the Psychopathic-Negative Affect group with the most severe scores on measures of substance use and impulsivity; and the High Well-Being group with the lowest levels of substance use, and impulsivity). Subsequent analyses revealed significant differences between groups on measures of cognitive ability, affect dysregulation, antisociality, substance use, and impulsivity.
Moreno-Ramos[53] / 2016 / Spain	134 men / 34.16 ± 6.84	8.14 years of education	UPPS-P, SPSR	Cross-sectional comparative study	Cocaine, heroin, Methadone, benzodiazepines, and polydrug users in abstinence	The study compared two groups of cocaine and heroin users undergoing pharmacological intervention, one group of abstinent users, and a control group of non-dependent individuals. Overall, the three groups with a history of substance dependence did not differ significantly from each other. However, when compared to the control group, they exhibited significantly higher scores in reward sensitivity,

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						positive urgency, negative urgency, and sensation seeking..
Bernstein[50] / 2015 / United States	158 men, 84 women / 35.58 ± 9.19	64.6% Did not complete High School	ASI, BIS	Cross-sectional comparative study	Alcohol, opiate, benzodiazepine, cocaine, cannabis, hallucinogen, and polysubstance use	A lifetime history of non-clinical substance use is positively associated with impulsivity among prison inmates. Impulsivity was higher among lifetime users (versus never users) of all substances other than cannabis. Thirty-day drug use frequency was only related to impulsivity for opiates and alcohol.
Baltieri[49] / 2014 / Brazil	315 women / 31.64 ± 8.99	74.92% had 7th grade or less education, and 25.08% had more than 7th grade	AUDIT, BDI, BIS-11, DAST, FSFI, SAST	Cross-sectional comparative study	Alcohol, Cocaine, Cannabis	The variables were associated with significantly increased odds of self-reported drug use in prison, which were younger age, history of being sexually abused in childhood, having committed robbery (when compared to homicide), earlier age of onset of criminal activities, higher mean AUDIT, DAST and SAST (sexual impulsiveness) scores, alcohol use in prison, and same-sex relationships inside prison. Impulsivity, as assessed by the BIS, did not predict increased substance use in the binary model.
Ireland[55] / 2013 / United Kingdom	200 men. / 36.10 ± 10.2	Not mentioned	AUDIT, BIS-15, BSSS, DAST-20, TIPI	Cross-sectional correlational study	Alcohol dependent, drug dependent (not including alcohol), and poly substance dependent	The findings indicated that sensation-seeking, as measured by the BStim-SS, did not consistently predict substance dependency, whereas impulsivity did. Higher levels of impulsivity were associated with drug, alcohol, and combined (drug and alcohol) dependency. In contrast, elevated sensation-seeking predicted only drug and combined dependency, but not alcohol dependency alone. Furthermore, distinct components of impulsivity were linked to specific forms of substance dependency: 'lack of planning' predicted drug dependency exclusively, while 'behavioral and cognitive impulsivity' was associated with alcohol and combined dependency.

Note. AASE = Alcohol Abstinence Self-Efficacy Scale; AEQ = Alcohol Expectancy Questionnaire; ARA = Alcohol-Related Aggression Questionnaire; AUDIT = Alcohol Use Disorders Identification Test; ASI = Addiction Severity Index modified; BDI = Beck Depression Inventory; BIS = Barratt Impulsiveness Scale; BSSS = Brief Sensation Seeking Scale; CTS = Conflict Tactics Scales; DAOS = Drug and Alcohol Outcome Star; DAST = Drug Abuse Screening Test, Short Form; FSFI = Female Sexual Function Index; JSAT = Jail Screening Assessment Tool; MASQ = Mood and Anxiety Symptom Questionnaire; MPQ-BF = Multidimensional Personality Questionnaire–Brief Form; NEO-FFI = NEO-Five-Factor Inventory; PCL-C = Posttraumatic Stress Disorder Checklist–Civilian Version; PCL-R = Psychopathy Checklist-Revised; PCS-Q = Parental Caregiving Style Questionnaire; SAST = Sexual Addiction Screening Test; SCID = Structured Clinical Interviews for the DSM; SCS = Self-Control Scale, Grasmick et al.; SPSR = Sensitivity to Punishment/Sensitivity to Reward Questionnaire; STAI = State-Trait Anxiety Inventory; STAXI = State–Trait Anger Expression Inventory; TIPI = Ten-Item Personality Inventory; UPPS/UPPS-P = Urgency, Premeditation, Perseverance, Sensation Seeking, Positive Urgency, Impulsive Behavior Scale; WAIS-R = Wechsler Adult Intelligence Scale–Revised; WRAT-3 = Wide Range Achievement Test-Third Edition.

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Drugs Assessed

Across the nine studies reviewed, a diverse range of psychoactive substances was assessed. Alcohol was the most frequently investigated substance, appearing in eight of the nine studies. Cannabis and cocaine were examined in six studies, followed by opioids or opiates in four. Benzodiazepines and hallucinogens were each reported in two studies, while sedatives, stimulants, heroin, and methadone were each assessed in one. Additionally, polysubstance use or unspecified drug dependence was identified in four studies, reflecting the complex and often overlapping nature of substance use profiles. These findings highlight the predominance of alcohol-related issues, which frequently co-occurred with other substances across the sample of adult inmates.

Measurement Instruments

Some instruments were used to assess substance use, psychological traits, and behavioral characteristics. The most frequently administered measure was the Barratt Impulsiveness Scale (BIS/BIS-11/BIS-15), used in five studies. Both the Alcohol Use Disorders Identification Test (AUDIT) and the Drug Abuse Screening Test (DAST) appeared in four studies each. The UPPS-P Impulsive Behavior Scale was reported in three studies, while the Addiction Severity Index (ASI and its variants), the Beck Depression Inventory (BDI/BDI-II), and the State-Trait Anger Expression Inventory-2 (STAXI-2) were each used in two studies. A variety of additional instruments were employed in individual studies to assess cognitive, emotional, and personality-related variables, reflecting the multifaceted nature of substance use research.

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Risk of Bias

Most of the studies included in the analysis demonstrated some type of bias (see Table 2). Only two studies showed no identified issues.[48,51] Regarding the risk of bias in cross-sectional studies, four studies either did not report or reported unclear criteria for the inclusion or exclusion of participants.[49,53–55] Four studies failed to clearly identify or insufficiently reported confounding variables,[52–55] as well as strategies to address them [52–55]. Three studies provided unclear or insufficient descriptions of the participants included in the sample.[52,53,55] In two of the studies analyzed, the condition of interest was not measured reliably or clearly, either due to the lack of explicit criteria or the use of modified standardized instruments.[50,53] Regarding the quasi-experimental study,[47] the most notable limitations were the absence of a control group and the high attrition rate, which partially compromises the reliability of the results.

Table 2 - Risk of Bias in included studies (n = 9)

JBI critical appraisal tool for the assessment of risk of bias for quasi-experimental studies									
First author	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Hardy	Y	N	Y	N/A	Y	Y	U	Y	Y

JBI critical appraisal tool for the assessment of risk of bias for cohort studies								
First author	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Capuzzi[51]	Y	Y	Y	Y	Y	Y	Y	Y
Eriksson[54]	N	Y	Y	Y	U	N	Y	Y
Aguiar[48]	Y	Y	Y	Y	Y	Y	Y	Y
Dargis[52]	Y	N	Y	Y	U	N	Y	Y
Moreno-Ramos[53]	N	U	N	U	U	N	Y	Y
Bernstein[50]	Y	Y	U	Y	Y	Y	Y	Y
Baltieri[49]	U	Y	Y	Y	Y	Y	Y	Y
Ireland[55]	N	U	Y	Y	N	N	Y	U

Note. Y = yes, N = no, U = unclear or not specified, N/A = not applicable.

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Outcomes

Evidence from the analyzed studies suggests an association between higher levels of impulsivity and alcohol/drug use among incarcerated adults. Five of the studies identified a direct relationship between substance use and elevated impulsivity levels.[50,52–55] Two studies did not find statistically significant differences in impulsivity between groups, but reported differences in substance use.[48,49] One study indicated an indirect association between the variables, in which both high impulsivity and substance use were predictors of a third outcome.[51] Finally, one study examined an intervention targeting alcohol use and impulsivity.[47]

Impulsivity and Alcohol/Drugs

Among the studies analyzed that reported positive findings, the pattern of association between substance use and impulsivity was heterogeneous, with variations in the types of substances examined, the dimensions of impulsivity assessed, and the methodological approaches employed. The study by Bernstein et al.[50] demonstrated that lifetime use of alcohol, cocaine, benzodiazepines, and opioids is a significant predictor of higher levels of impulsivity among incarcerated individuals. However, only recent use (within the last 30 days) of alcohol and opioids emerged as a strong predictor of current impulsivity levels. In line with these findings, the studies by Eriksson et al.[54] and Dargis & Koenigs[52], analyzing different groups of substance users, showed that average impulsivity levels tend to increase as substance use problems become more severe.

Moreover, some studies have indicated that different facets of impulsivity are associated with substance use in distinct ways. Ireland & Higgins[55] found that

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alcohol dependence, as well as combined dependence on alcohol and other drugs, is associated with increased global impulsivity. In contrast, dependence on drugs excluding alcohol was more strongly linked to the planning difficulties facet of impulsivity. Complementarily, the study by Moreno-Ramos et al.[53], analyzing heroin/cocaine users and abstinent individuals, identified impairments in several facets of impulsivity compared to a control group, including sensation seeking, negative urgency, positive urgency, and reward sensitivity.

Similarly, Hardy et al.[47], using the same impulsivity measure (UPPS) as the previous study, evaluated the effects of a cognitive-behavioral therapy-based intervention program for alcohol users convicted of violent crimes. The results indicated improvements only in the negative urgency dimension when comparing pre- and post-intervention scores.

In contrast, the studies by Baltieri[49] and Aguiar et al.[48] did not find significant differences in impulsivity levels between the groups analyzed. However, Baltieri[49] did report an association between substance use and sexual compulsivity, which is interpreted in the article as a manifestation of sexual impulsivity.

Impulsivity in young adults

None of these studies focused their methodology on the specificities of young adults.

Substance Use and Criminal Behavior

Five of the analyzed studies established a connection between substance use and characteristics of criminal profiles.[48,49,51,52,54] The investigations by Aguiar et al.[48] and Capuzzi et al.[51] linked substance use to reincarceration, indicating that

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both the severity of alcohol use and a prior history of drug use are associated with the persistence of criminal behavior. The studies by Eriksson et al.[54] and Dargir & Koenigs[52] identified a relationship between substance use and the commission of violent crimes. Finally, Baltieri [49] demonstrated that both early onset of criminal activity and a history of offenses—particularly theft—are predictors of substance use during incarceration.

Discussion

This study aimed to review the scientific literature addressing the relationship between alcohol and/or drug use and impulsivity in a sample of incarcerated youths. To this end, priority was given to studies conducted in prison contexts, with the objective of understanding how this relationship manifests specifically within this population. A significant association between substance use and high levels of impulsivity was found. However, notable methodological gaps were identified in several of the reviewed studies, contributing to an increased risk of bias.

Previous research has already indicated a correlation between impulsivity and substance use in the general population.[33,57,58] Nevertheless, the prevalence of substance use in prison populations is particularly concerning, especially in light of evidence pointing to its global increase.[11,59,60]

The findings of this review suggest that increased substance use is associated with higher rates of criminal recidivism and with the nature of crimes committed. A cohort study involving 13,000 individuals released from correctional facilities in Canada showed that those with co-occurring mental health conditions and substance use disorders had a significantly higher risk of reincarceration

compared to incarcerated individuals without these conditions.[61] Additionally, other studies support the notion that excessive use of alcohol and other drugs is linked to violent criminal behavior, suggesting that a considerable number of offenses might not have occurred had the individuals not been under the influence of such substances.[62–64]

This increased prevalence of substance use during incarceration may be a contributing factor to the persistence of criminal behavior. While structural determinants such as social inequality, limited access to healthcare, and low income are commonly cited as explanatory factors,[65] the quality of the prison environment also warrants attention. The reviewed studies highlight associations between drug use and violent crime within prisons, reinforcing findings in the literature that link higher levels of impulsivity and substance-related issues to misconduct during incarceration.[66–69]

Contrary to expectations, none of the reviewed studies focused specifically on young adult populations, nor did they define precise age ranges for analysis. This lack of specificity may represent a methodological bias, particularly in studies exploring cognitive functioning, as brain development and maturation are age-dependent variables.[70,71] Moreover, several studies indicate that earlier onset of substance use is a predictor of future criminal involvement and more severe substance-related problems in adulthood.[72–75]

Another important finding of this review was the high prevalence of low educational attainment among incarcerated individuals. This suggests that school dropout may contribute to both substance use and criminal behavior. In this regard, Sapouna,[76] in a study with 739 offenders aged 18 to 25, found that individuals who began engaging in criminal activity only in adulthood reported

stronger attachment to school during adolescence. The author argues that educational institutions may act as protective factors against early criminal behavior. Thus, the combination of low educational levels and ineffective public policies and rehabilitation strategies may lead to the failure of the resocialization process. In Brazil, for example, less than 25% of incarcerated individuals participate in educational activities or complete basic education while serving their sentences.[3,9]

The analysis of the instruments employed for data collection indicated that the most frequently utilized measures were the BIS scale (for assessing impulsivity) and the AUDIT and DAST scales (for screening substance use). The BIS is regarded as a gold-standard instrument for the assessment of impulsivity, with a well-established history in empirical research and relatively brief administration time, contingent upon the version implemented.[77] Likewise, both the AUDIT and the DAST are recognized as brief screening tools with strong psychometric properties, making them among the most reliable and widely adopted instruments for identifying alcohol and drug use patterns in various populations.[78] Nonetheless, an increasing body of evidence suggests that impulsivity constitutes a multidimensional construct.[79,80] Accordingly, it is recommended that future investigations adopt instruments capable of capturing this complexity, such as the UPPS-P scale, which was specifically developed to assess five distinct dimensions of impulsivity.[81]

Several limitations of this review must be acknowledged. First, most included studies employed cross-sectional designs, with only one longitudinal study identified, which itself presented methodological limitations such as the absence of a control group. Second, all reviewed studies relied exclusively on self-report

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measures for data collection, which may compromise the accuracy and validity of the findings.

In light of these limitations, future research should employ more robust methodological designs, such as longitudinal studies with appropriate control groups, to better understand how substance use patterns evolve over time and their impact on the cognitive functioning of incarcerated individuals. Considering the unique characteristics of the prison environment, future studies should also incorporate complementary methods of analysis—including biological markers, behavioral assessments, and brain function evaluations—to strengthen data reliability and to elucidate how these environmental factors interact with cognitive functioning.

Conclusion

Evidence from the reviewed literature indicates a consistent association between impulsivity and substance use—both alcohol and drugs—among incarcerated individuals, thereby corroborating previous findings. Empirical studies conducted within this population suggest that inmates who engage in substance use tend to exhibit elevated levels of impulsivity, with a directly proportional relationship frequently observed. Moreover, among individuals who report alcohol and/or drug use, more severe and chronic patterns of consumption are consistently linked to heightened impulsivity levels. In light of these findings, it is reasonable to posit that both impulsivity and substance use function as significant risk factors, particularly among youth. Accordingly, it is imperative to underscore the importance of protective factors—especially within younger populations—as they may play a pivotal role in mitigating the emergence and persistence of such

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behaviors.

Conflict of Interest

No authors have any conflict of interests to report.

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