

# The intersection of addiction and crime: Criminal thinking tendencies in individuals diagnosed with substance use disorder

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## SUMMARY

**Objective:** This study aims to examine the relationship between the severity of addiction and levels of criminal thinking in individuals diagnosed with substance use disorder. Additionally, it seeks to determine whether addiction severity predicts crime-related cognitive patterns.

**Method:** Conducted within a cross-sectional and quantitative research design, the study involved 198 inpatients receiving treatment at a public hospital in Istanbul. All participants were diagnosed with substance use disorder according to DSM-5 criteria. Data were collected using the Addiction Profile Index (API) and the Criminal Thinking Scale (CTS). The data were analyzed through Pearson correlation and simple linear regression techniques.

**Results:** Analyses revealed a weak but statistically significant positive correlation between addiction severity and criminal thinking levels ( $r = .185$ ;  $p < .01$ ). In particular, the subdimensions of "entitlement," "power orientation," and "criminal rationalization" were significantly associated with addiction severity. The regression model indicated that addiction severity significantly predicted criminal thinking ( $\beta = .371$ ;  $p < .05$ ); however, the explanatory power of the model was limited ( $R^2 = .03$ ).

**Discussion:** The findings suggest that as addiction severity increases, individuals are more likely to exhibit cognitive patterns associated with criminality. This highlights the importance of addressing not only behavioral aspects but also cognitive tendencies during addiction treatment processes, underscoring the need for a holistic intervention approach.

**Key Words:** Substance use disorder, addiction severity, criminal thinking, propensity for crime

## INTRODUCTION

Addiction is a chronic and relapsing disorder that profoundly affects an individual's life on biological, psychological, and social levels. The American Society of Addiction Medicine (ASAM) defines addiction as a neuropsychiatric disease characterized by dysfunctions in the brain's reward, motivation, and memory systems (1). These dysfunctions manifest through symptoms such as impaired behavioral control, intense craving, and diminished functionality in interpersonal relationships. Substance use disorder (SUD), on the other hand,

is a syndrome marked by cognitive, behavioral, and physiological symptoms in which the individual continues using substances despite experiencing significant harm. Diagnosis is typically based on patterns of pathological use, while the severity of the disorder is determined by the extent of impairment in the individual's functional domains (2). Addiction severity is a multidimensional construct encompassing the overall impact on physical health, psychological well-being, social relationships, and occupational functioning. In recent years, increasing attention has been given to the role of cognitive processes in addictive behaviors, suggesting that addiction cannot be fully explained

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by neurobiological factors alone. In this context, the concept of criminal thinking has gained prominence. Criminal thinking refers to cognitive patterns that include the rationalization of criminal behavior, externalization of responsibility, deviation from social norms, and deficiencies in impulse control (3,4).

Such patterns of thinking may play an influential role in the internalization and maintenance of criminal behavior. The main components of criminal thinking include subdimensions such as entitlement, personal irresponsibility, justification, power orientation, cold heartedness, and rationalization (5). For example, entitlement refers to perceiving one's desires as needs and thereby subordinating the rights of others. Personal irresponsibility expresses the tendency to hold others accountable for one's own actions, whereas rationalization denotes the process of legitimizing criminal behaviors through various justifications. These cognitive distortions have been shown to be effective in the continuation and recurrence of criminal behavior (6). The development of criminal thinking is shaped by social learning processes, early life experiences, and personality traits. In particular, impulsivity, lack of empathy, and low cognitive flexibility are common determinants of both addiction and criminal behavior (7,8). In addition, social injustice, familial risk factors, and traumatic life experiences may contribute to the reinforcement of these cognitive distortions.

The relationship between substance use disorder and criminal thinking holds critical importance for both clinical and forensic interventions. However, in Turkey, quantitative studies that directly examine the relationship between these two variables remain limited. The existing literature primarily focuses on the association between addiction and psychiatric symptoms such as depression and anxiety, while cognitive patterns related to criminality have been largely overlooked (4,9,10). Yet, criminal thinking structures encompass cognitive tendencies that may be decisive for the treatment process, risk of relapse, and social reintegration (11,12). This study statistically examined the relationship between addiction severity and the level of criminal thinking, as well as the predictive role of addiction severity on criminal cognition. The pri-

mary aim was to gain a deeper understanding of the cognitive mechanisms associated with criminal tendencies among individuals with substance use disorder. The findings are expected to provide a scientific basis for supporting substance use treatment not only through symptom-focused approaches but also through structured intervention programs that specifically address crime-related cognitive patterns.

### Research Questions

- 1) Is there a significant relationship between addiction severity and the level of criminal thinking in individuals diagnosed with substance use disorder?
- 2) Does addiction severity significantly predict the level of criminal thinking among these individuals?

### METHOD

#### Research Design

This study was structured as a descriptive, cross-sectional, and quantitative research based on a relational survey model. Relational survey designs aim to determine the degree and direction of relationships between two or more variables and are employed to explain the existing state of phenomena (13).

#### Participants

The study was conducted at the Adult Detoxification Unit of Bakırköy Prof. Dr. Mazhar Osman Mental and Neurological Diseases Hospital in Istanbul. The participants included individuals who had been diagnosed with substance use disorder according to DSM-5 diagnostic criteria and were receiving inpatient treatment at the time of the study. The data collection process was carried out between September and December 2023.

#### Inclusion Criteria

- Being 18 years of age or older,

- Having adequate cognitive capacity as determined by clinical evaluation,
- Having completed the withdrawal (detoxification) process,
- Not having severe comorbid psychiatric diagnoses such as schizophrenia, bipolar disorder, or major depressive disorder,
- Voluntarily agreeing to participate by signing an informed consent form.

### Exclusion Criteria

- Patients with short-term hospitalization plans (Patients with short-term hospitalization plans are defined as those discharged before completing the treatment process. Such cases may occur due to personal request, non-compliance with clinical operational rules, or behaviors with the potential to negatively affect the treatment process of other patients),
- Individuals who are clinically unstable.

The required sample size for the study was calculated using the G\*Power 3.1.10 software. Based on a medium effect size ( $r = 0.25$ ), a statistical power of 95%, and a significance level of 5%, a minimum of 159 participants was targeted. During the data collection process, some participants were excluded due to incomplete responses or inconsistent answer patterns in their questionnaires. These forms were removed from the dataset, and the final analyses were conducted with data from 198 participants.

### Data Collection Instruments

*Clinical and Demographic Information Form:* This form, developed by the researchers, includes information on participants' basic demographic characteristics as well as their clinical and forensic backgrounds. Variables covered in the form include age, gender, educational level, marital status, occupation, history of criminal behavior, family history of substance use, and the presence of psychiatric di-

sorders within the family.

*Addiction Profile Index (API):* The Addiction Profile Index (API), developed by Ögel et al. (2015), is a 37-item self-report instrument designed to assess the level of addiction in individuals. The scale consists of five subdimensions: Substance Use Characteristics, Diagnosis, Impact on Life, Craving, and Motivation. Each item is rated on a 5-point Likert-type scale ranging from 0 to 4. The total score is calculated using a weighted formula, classifying addiction severity into three levels: low ( $<12$ ), moderate (12–14), and high ( $>14$ ) (14). The API provides a comprehensive measure of addiction by combining behavioral, psychological, and motivational components. The scale has demonstrated high internal consistency, with a Cronbach's alpha of  $\alpha = .89$  reported in the original validation study. In the current study, the internal consistency coefficient was calculated as  $\alpha = .85$ .

*Criminal Thinking Scale (CTS):* The Criminal Thinking Scale (CTS), developed by Knight et al. (2006) and adapted into Turkish by Duyguner and Gölge (2019), consists of 23 items and six subdimensions: entitlement, personal irresponsibility, justification, power orientation, cold-heartedness, and criminal rationalization. Each item is rated on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The overall internal consistency coefficient of the scale was reported as  $\alpha = .79$  in the original study, while in the present study it was calculated as  $\alpha = .74$ .

### Statistical Analysis

Data were analyzed using IBM SPSS Statistics 26.0. Descriptive statistics were computed based on total scores from the scales. Skewness and kurtosis values were examined, and all scores fell within the  $\pm 1.5$  range, indicating normal distribution (15). Accordingly, parametric tests were applied. An independent samples t-test was used for group comparisons. Pearson correlation was conducted to assess the relationship between addiction severity and criminal thinking. Simple linear regression was used to examine whether addiction severity predicted criminal thinking. The significance level was set at  $p < .05$  with a 95% confidence interval.

**Table 1.** Comparison of Addiction Profile Index (API) and Criminal Thinking Scale (CTS) Scores by family history of psychiatric disorder, family history of substance use, and criminal record (t-Test Results)

Variable	Group	N	X	SS	t	t test		Difference
						sd	p	
API	Family history of psychiatric disorder: Yes	41	13,4766	2,16224	,873	,49985	P>.05	-
	Family history of psychiatric disorder: No	157	13,0400	3,00110				
	Family history of substance use: Yes	29	13,2031	2,89799	,110	,57313	P>.05	-
	Family history of substance use: No	168	13,1401	2,84207				
	Criminal record: Yes	96	13,7859	2,35038	3,243	,39239	P?.05	1>2
	Criminal record: No	102	12,5134	3,13609				
	Family history of psychiatric disorder: Yes	41	27,3489	4,11301	1,961	,80303	P>.05	-
	Family history of psychiatric disorder: No	157	25,7740	6,03855				
CTS	Family history of substance use: Yes	29	28,1859	4,80524	2,124	1,14188	P?.05	1>2
	Family history of substance use: No	168	25,7609	5,81218				
	Criminal record: Yes	96	26,9882	5,79154	2,139	,80611	P?.05	1>2
	Criminal record: No	102	25,2643	5,55107				

## RESULTS

### Descriptive Statistics

Among the 198 participants included in the study, 69.7% (n = 138) were male, 42.9% (n = 85) had completed primary education, and 52.5% (n = 104) were married. A total of 44 participants (20.2%) reported a family history of psychiatric disorders, while 30 individuals (15.2%) had a family history of substance use. Nearly half of the participants (n = 96; 48.5%) had previously received a criminal sentence. Regarding addiction severity levels, 73 participants (36.9%) were classified as having high addiction severity, 68 (34.3%) as moderate, and 57 (28.8%) as low.

### Group Comparisons Based on Clinical Variables

Independent samples t-test results examining the relationship between API and CTS scores and various clinical variables are presented in Table 1. Participants with a history of criminal conviction had significantly higher API scores than those without such a history (t = 3.243, p < .05). Likewise, CTS scores were also significantly higher in this group (t = 2.139, p < .05). A significant difference was found in CTS scores between participants with and without a family history of substance use (t = 2.124, p < .05), while API scores did not differ sig-

nificantly between these groups (p > .05). No significant differences were observed in either API or CTS scores based on the presence of a family history of psychiatric disorders (p > .05) (Table 1).

### Relationship Between Addiction Severity and Criminal Thinking

Pearson correlation analysis results examining the relationship between addiction severity (API) and criminal thinking (CTS) are presented in Table 2. The analysis revealed a weak but statistically significant positive correlation between API and overall CTS scores (r=.185, p=.009). When CTS subdimensions were analyzed, significant positive correlations were found between API and the entitlement (r=.181, p=.011), criminal rationalization (r=.154, p=.031), and power orientation (r=.179, p=.034) subscales. No significant correlations were observed between API and the remaining subdimensions: cold-heartedness, justification, and personal irresponsibility (p > .05) (Table 2).

### Predictive Effect of Addiction Severity on Criminal Thinking

Findings from the simple linear regression analysis conducted to examine whether addiction severity (API) predicts criminal thinking (CTS) are presented in Table 3. The results indicate that the

**Table 2.** Pearson correlation analysis examining the relationship between addiction severity and criminal thinking

	1	2	3	4	5	6	7	8	
API Total Score <sup>1</sup>	r	1							
	p								
CTS Total Score <sup>2</sup>	r	,185*	1						
	p	,009							
Entitlement <sup>3</sup>	r	,181*	,760*	1					
	p	,011	,000						
Criminal Rationalization <sup>4</sup>	r	,154*	,747*	,445*	1				
	p	,031	,000	,000					
Power Orientation <sup>5</sup>	r	,179*	,634*	,468*	,398*	1			
	p	-,034	,000	,000	,000				
Cold-Heartedness <sup>6</sup>	r	,633	,419*	,126	,025	,085	1		
	p	,198	,000	,078	,723	,232			
Justification <sup>7</sup>	r	,098	,498*	,319*	,333	,325*	-,069	1	
	p	,168	,000	,000	,000	,000	,334		
Personal Irresponsibility <sup>8</sup>	r	,136	,495**	,272**	,428	,203*	-,046	,232*	1
	p	,056	,000	,000	,000	,004	,522	,001	

\* $p < .05$  indicates a statistically significant correlation.

model is statistically significant ( $F(1,196) = 6.908, p < .05$ ). Addiction severity was found to be a significant positive predictor of criminal thinking ( $\beta = .371, t = 2.628, p < .05$ ). The model accounted for approximately 3% of the variance in criminal thinking scores ( $R^2 = .034$ ; adjusted  $R^2 = .029$ ) (Table 3).

## DISCUSSION

The findings show that individuals with a criminal history scored significantly higher in both addiction severity and criminal thinking. This supports the view that the link between addiction and criminal behavior should be addressed at the cognitive as well as behavioral level. Higher addiction scores among those with a criminal background may suggest that addiction increases criminal tendencies or, conversely, that criminal involvement reinforces addiction. This bidirectional relationship is often highlighted in forensic psychiatry (11,12,16). Additionally, individuals with a family history of substance use or psychiatric disorders displayed significantly higher criminal thinking scores. This suggests that deviant cognitive patterns may be acquired through social learning. Early exposure to maladaptive role models during childhood and adolescence is known to shape one's value systems and boundaries (17,18). Familial risk factors not only provide environmental context but also influ-

ence how individuals interpret and legitimize criminal behavior.

These findings are consistent with numerous studies in the literature and indicate that criminal tendencies in individuals with addiction should be evaluated not only in terms of individual psychopathology, but also within familial, social, and cognitive contexts (4,19). Considering such cognitive patterns in clinical and forensic interventions is critically important for improving both treatment adherence and social functioning.

The findings revealed that as addiction severity increased, criminal thinking scores also rose significantly. Individuals with high levels of addiction were more likely to rationalize criminal behavior and internalize distorted cognitive patterns. This relationship supports Walters' (2012) cognitive distortion model, which links addiction to structures such as entitlement, externalization, and personal irresponsibility (4). Similarly, Caudy et al. (2015) and Bakken et al. (2023) reported that substance use contributes to recidivism and reinforces crime-justifying thought processes (11,12). Becker and Murphy's (1988) rationalization theory posits that individuals with addiction develop cognitive distortions to justify deviant acts (20), while Elster and Skog (1999) argue that as addiction intensifies, vio-

**Table 3.** The Effect of Addiction Severity on Criminal Thinking

Variable	Unstandardized		Bootstrapping BCa 95%CI		□	t	pr
	B	SE <sub>B</sub>	Lower limit	Upper Limit			
Constant	21,235	1,894	17,500	24,970		11,212	
Addiction Severity	,371	,141	,093	,649	,371	2,628	-,034

$R = .185, R^2 = .034, R^2_{adj} = .029, F(1, 196) = 6.908, p < .05$

Dependent Variable: Criminal Thinking

lations of social norms are more easily rationalized (21). Smith and Saldana (2013) and Weber and Lynch (2021) found strong correlations between addiction and criminal thinking, suggesting that criminal behavior may be perceived as inevitable or legitimate (22,23). Fix and Fix (2015) emphasized that high addiction severity reinforces a sense of exemption from social norms (24). From a neuropsychological perspective, Baker (2018) and Lovenstein (2001) demonstrated that addiction impairs key cognitive functions such as judgment, empathy, and impulse control, facilitating the emergence of criminal justifications (25,26). Additionally, Brunelle et al. (2013, 2015) reported that individuals with high addiction severity often live in socially disadvantaged environments, which normalize criminal behavior and complicate treatment processes (27,28). Collectively, these findings underscore that increasing addiction severity is associated with stronger cognitive tendencies toward criminality, highlighting the need to address these mechanisms in both clinical and forensic interventions.

The simple linear regression analysis conducted in this study demonstrated that addiction severity significantly predicts levels of criminal thinking. The model was found to be statistically significant, with addiction severity accounting for 3% of the variance in criminal thinking scores ( $R^2 = .03$ ). The positive regression coefficient indicates that higher levels of addiction are associated with stronger cognitive tendencies related to criminality. This finding suggests that addiction is linked not only to behavioral patterns but also to cognitive distortions. Walters (2012) emphasized that cognitive structures associated with criminal behavior—particularly entitlement, externalization, and personal irresponsibility—are more prevalent among individuals with substance use disorders (4). Similarly, Smith and Saldana (2013) and Weber and Lynch (2021) reported significant correlations between addiction and criminal thinking (22,23).

At the theoretical level, Becker and Murphy's (1988) rationalization model suggests that individuals develop cognitive distortions to justify their criminal behavior (20). Elster and Skog (2007) similarly emphasize that as addiction increases, the rationalization of social norm violations becomes

easier (21). In addition, Baker (2018) and Lovenstein (2001) have shown that chronic substance use weakens higher-order cognitive functions such as judgment and impulse control, thereby facilitating the development of such distortions (25,26). In conclusion, addiction severity is a significant predictor of criminal thinking, and this relationship should be considered at both theoretical and practical levels. Intervention processes should address not only behavioral symptoms but also the underlying cognitive structures.

This study was conducted at a single treatment center in Istanbul, and the sample was predominantly male, which limits the generalizability of the findings to female populations. The use of self-report measures may have introduced risks of social desirability and recall bias. In particular, criminal history data were obtained solely through participants' self-reports, without verification from official records, which may have introduced reporting bias. Furthermore, the study did not differentiate between types of addiction (e.g., substance use, alcohol use, or behavioral addictions), as this variable was beyond the primary scope and objectives of the research; this may have somewhat limited the ability to explore potential differences in criminal thinking patterns across addiction types. Although the scales used were culturally adapted, certain cognitive constructs may still be interpreted differently depending on context, posing potential measurement limitations. Additionally, variables such as trauma history, personality traits, and social support were not included in the analysis, which may have influenced the outcomes. Although addiction severity was found to be a significant predictor of criminal thinking, the explained variance was limited, suggesting the need for more comprehensive models. Despite these limitations, the study offers a meaningful contribution to the literature as one of the few empirical investigations into the relationship between addiction severity and criminal thinking, and it provides a foundation for future research in this area.

This study examined the relationship between addiction severity and criminal thinking among individuals diagnosed with alcohol or substance use disorder. The findings revealed that higher addiction severity is significantly associated with eleva-

ted levels of criminal thinking. Moreover, individuals with a history of criminal behavior or a family history of substance use exhibited higher levels of criminal cognition.

Correlation and regression analyses indicated that addiction severity is a significant positive predictor of criminal thinking. This suggests that addiction is not solely a physiological or behavioral issue, but is also linked to cognitive patterns related to criminality—particularly justification of crime, externalization of responsibility, and power-oriented thinking. The study's key contribution lies in its predictive modeling of this relationship and its discussion of clinical implications, addressing a gap often overlooked in previous correlation-based research.

These results highlight the need to integrate crime-related cognitive patterns into addiction assessment and intervention processes. Identifying and addressing such distortions, especially in individuals with a forensic background, may enhance treatment outcomes.

Future studies should explore variables such as type of offense, duration of addiction, substance type, and co-occurring psychiatric diagnoses. Qualitative approaches could further illuminate this complex relationship, providing a foundation for comprehensive and evidence-based strategies to disrupt the addiction–crime cycle.

### Statements and Declarations

**Ethics Committee Approval:** All participants in the study were presented with an informed consent form for voluntary participation, and the data were collected anonymously. Prior to the implementation of the survey, ethics committee approval was obtained from the Ethics Committee for Social and Human Sciences of Istanbul Medipol University, with decision number 101.

**Consent to participate:** Written informed consent was obtained from the participants.

**Consent for publication:** Not applicable.

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