The Relationship Between Substance Use Disorder and the Theft Behaviors of Individuals Convicted of Theft, and Impulsivity

Madde Kullanım Bozukluğu ile Hırsızlık Suçundan Hüküm Giymiş Bireylerde Hırsızlık Davranışları Arasındaki İlişki ve Dürtüsellik

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ABSTRACT

This study was conducted to examine the relationship between theft and crimes committed against property to satisfy substance needs, and to investigate the impulsivity factor in the relationship between substance needs and theft. The sample consisted of 400 male volunteers aged 18 and over who had been convicted of theft at the T-Type Closed Prison in Istanbul. Data were collected using a demographic information form and the Barratt Impulsivity Scale Short Form. Relationships between variables were analyzed using the Chi-square test. The results showed that 63.3% (*n* = 253) of the participants committed their first theft offense to obtain drugs, and 85.4% (*n* = 216) continued to commit theft for the same reason. The primary reason for all theft offenses was substance acquisition need, accounting for 55.5% (*n* = 222) of cases. Furthermore, evaluations conducted using the Mann-Whitney U test revealed that individuals who committed theft due to the need to obtain substances had significantly higher impulsivity scores on all subscales compared to those who committed theft for other reasons (*p* < .05). The study emphasizes that preventing substance use should be a priority in order to prevent theft crimes and that impulsivity should be taken into account in policies developed to combat substance use, thereby contributing to the limited scientific literature on the relationship between substance use, theft, and impulsivity.

Keywords: Substance use disorder, drug addiction, substance abuse, crimes against property, theft, impulsivity

ÖZ

Bu araştırma, madde gereksinimini karşılamak amacıyla işlenen hırsızlık ve diğer mal varlığına karşı suçlar arasındaki ilişkiyi incelemek ve madde gereksinimi ile hırsızlık arasındaki ilişkide dürtüsellik etkenini araştırmak amacıyla yürütülmüştür. Araştırmanın örneklemini, İstanbul T Tipi Kapalı Ceza İnfaz Kurumu'nda hırsızlık suçundan hüküm giymiş, 18 yaş ve üzeri 400 erkek gönüllü oluşturmaktadır. Veriler, demografik bilgi formu ve Barratt Dürtüsellik Ölçeği Kısa Formu kullanılarak toplanmıştır. Değişkenler arasındaki ilişkiler Ki-kare testi ile analiz edilmiştir. Bulgular, katılımcıların %63,3'ünün (n = 253) ilk hırsızlık suçunu madde temin etmek amacıyla işlediğini, %85,4'ünün (n = 216) ise aynı nedenle hırsızlık yapmayı sürdürdüğünü göstermektedir. Tüm hırsızlık suçları içinde en temel gerekçenin %55.5 (n = 222) oranıyla madde temin etme gereksinimi olduğu saptanmıştır. Ayrıca Mann-Whitney U testi ile yapılan değerlendirmelerde, madde temini amacıyla hırsızlık yapan bireylerin, diğer nedenlerle hırsızlık yapanlara kıyasla tüm alt boyutlarda anlamlı düzeyde daha yüksek dürtüsellik puanlarına sahip oldukları belirlenmiştir (*p* < ,05). Araştırma, hırsızlık suçlarının önlenmesinde madde kullanımının engellenmesinin öncelikli bir alan olması gerektiğini ve madde kullanımıyla mücadeleye yönelik geliştirilecek politikalarda dürtüsellik özelliğinin dikkate alınmasının önemini vurgulamakta; bu yönüyle madde kullanımı, hırsızlık ve dürtüsellik arasındaki ilişkiye dair sınırlı sayıdaki bilimsel çalışmaya katkı sunmaktadır.

Anahtar Kelimeler: Madde kullanım bozukluğu, uyuşturucu bağımlılığı, madde kötüye kullanımı, malvarlığına karşı suçlar, hırsızlık, dürtüsellik

Introduction

Substance use disorder (SUD), or commonly referred to as substance addiction, is a health problem characterized by harmful substance use and dependence that negatively impacts many areas of an individual's life (World Health Organization [WHO], 2023). According to DSM-5 (2022), the core feature of SUD is a cluster of cognitive, behavioral, and physiological symptoms that indicate the individual continues to use substances despite significant problems related to substance use. According to the WHO's ICD classification, there are seven criteria for diagnosing addiction: strong craving, difficulty controlling use, withdrawal when substance use stops, seeking substances to relieve withdrawal, tolerance, detachment from daily activities, and continued use despite obvious harm. Six of these reflect the addict's urge to obtain the substance and emphasize its intensity. As a result, the behaviors and social relationships of individuals with SUD are shaped by the substance and the urge to obtain it.

Although societies develop policies to combat substance use, the problem remains a global one, as evidenced by the dramatic increase in the variety of substances, with the number of known substances rising from 13 in 2006 to 620 in 2016 (EMCDDA, 2017). In Europe, more than 17 million young adults (aged 15-34) reported using drugs last year (16.9%). Moreover, these figures do not reflect actual usage due to reporting bias (EMCDDA, 2021).

SUD individually impair physical, psychological, and social functioning, affecting individuals and societies in numerous ways. SUD and other mental health issues affected more than 1 billion people worldwide in 2016 and accounted for approximately 7% of the global economic burden (Rehm & Shield, 2019). This situation deepens economic inequalities by affecting both government health expenditures and individual incomes. Individuals with SUD face greater difficulties in maintaining their jobs, which increases the pressure on social security systems (Kendler et al., 2017). SUD also causes a decline in productivity and efficiency in the labor market. Labor force loss and rising unemployment rates slow economic growth in the long term and pose a threat to social welfare (Öztürk Emiral & Gökler, 2024).

In addition to health and economic problems, SUD contributes to increased crime rates, disrupts family structures, weakens social cohesion, and creates a sense of insecurity in society, particularly through criminal behavior among young people (Delisi et al., 2015).

Research confirms a close link between substance abuse and crime. In a study conducted by Ögel et al. (1999) with 369 substance users, 65% of substance users were found to have had problems with the law. Another study supporting this finding involved 1,679 substance users undergoing inpatient treatment, and it was found that 59.7% of them had been incarcerated at least once (Aytaçlar & Türkcan, 1996, as cited in Ögel et al., 1999).

Over time, individuals with SUD experience a decline in work performance and fall into economic hardship. This situation may cause the individual to turn to crimes such as theft, drug dealing, or courier services in order to obtain the substance they need. In addition, substance effects may cause thought and behavioral disorders, which may lead to crime. All these factors demonstrate how strong the direct and indirect links between substance use and crime are (Alpay et al., 1995).

When examining the relationship between substance use disorder and theft, it appears that theft and substance use disorder follow a parallel trend, suggesting a cause-and-effect relationship. Using New York Police Department records (1970-1996), Corman and Mocan (2000) found that substance use was positively and significantly associated with increasing rates of theft; this relationship remained stable and persistent over time.

Studies by Sibusiso et al. (2022) found that substance users' criminal behaviors, particularly theft crimes, were associated with substance use disorder. Danışman et al. (2024) showed that individuals with methamphetamine use disorder have a high likelihood of reoffending; furthermore, these individuals were found to be prone to committing crimes, particularly for the purpose of obtaining drugs.

While there are studies examining the relationship between theft and substance use disorders in many countries, although there are studies on the relationship between substance use disorders and crime in Turkiye, there is a need for studies specifically showing its effect on theft.

In Turkiye, 24.4% (73,444) of prisoners convicted of multiple crimes in 2022 were convicted of theft, which constitutes the highest rate of these crimes (Republic of Turkiye Ministry of Justice, General Directorate of Judicial Records and Statistics, 2023). According to the Penitentiary and Correctional Institution, theft crimes have the largest share among crimes against property, which are the most frequently committed crime category (Republic of Turkiye Ministry of Justice, General Directorate of Criminal Records and Statistics, 2022). Again, according to the same institution's data, parallel to theft crimes, although there

have been declines in some years, crimes related to substance abuse have also increased in recent years. In Turkiye, the percentage of those imprisoned for substance-related crimes rose from 28% in 2019 to 32% in 2020 and 33.6% in 2021. In light of these data, the importance of research examining the relationship between SUD and theft crime is clear.

Another concept related to substance addiction and theft crime is impulsivity. Impulsivity is defined as the tendency to respond suddenly and unplanned to internal or external stimuli, despite negative consequences (Moeller et al., 2001). Impulsivity is related to acting on impulse without planning and limited cognitive evaluation (Artuk & Alşahin, 2017; Dolu, 2015).

According to the DSM-5, impulsivity involves responding quickly to stimuli without considering the consequences, difficulty adhering to plans, and engaging in self-harming behavior during emotional distress (Konuk, 2015). It is considered a core symptom of psychiatric disorders with limited behavioral inhibition, such as borderline and antisocial personality disorders (Özdemir, 2012).

The aim of this study is to examine the effect of substance acquisition needs on theft crimes, which have negative effects on social security, public order, and individual well-being, and to investigate the impulsivity factor in the context of the relationship between these needs and theft. The research aims to shed light on the relationship between theft crimes, which negatively affect social security, the need for safety, and people's gains, and the need to obtain drugs, thereby demonstrating the beneficial effects of the fight against drug use on social security and peace, in addition to protecting the younger generations. In other words, it aims to reveal how important it is to combat substance use in order to prevent theft crimes and the material and moral problems they cause. Furthermore, it aims to demonstrate the relationship between impulsivity and substance use and the subsequent crime of theft, thereby highlighting the need to consider the impulsivity factor in the prevention and rehabilitation of substance addiction, with the goal of increasing the effectiveness of future measures and treatment plans.

The hypotheses of the study are: "The need to obtain drugs is related to the crime of theft," and "Individuals who commit theft to obtain drugs exhibit a higher level of impulsivity compared to individuals who commit theft for other reasons."

Additionally, it seeks to answer the questions: "Are there differences between the group committing theft to obtain substances and the group committing theft for other reasons in terms of age, marital status, education, age at first theft, frequency of substance use before entering prison, age at first substance use, single or multiple substance use, and crimes committed other than theft?"

Methods

Participants

This descriptive study, conducted with the permission of the Ministry of Justice, consisted of 412 adult men (aged 18 and over) who had been convicted of theft as part of property crimes at the Ümraniye T Type Closed Prison in Istanbul, where individuals convicted of theft are concentrated. Participants were selected using purposive sampling (Yıldırım & Şimşek, 2008) because they were directly related to the research topic, were rich sources of information, and were expected to provide detailed and productive work.

The age distribution of the participants was as follows: 13.0% (*n* = 52) aged 18-24, 21.8% (*n* = 87) aged 25-29, 20.5% (*n* = 82) aged 30-34, 19.7% (*n* = 79) aged 35-39, 11.2% (*n* = 45) aged 40-44, 5.8% (*n* = 23) aged 45-49, and 8.0% (*n* = 32) aged 50 and above. In terms of marital status, 28% are married, 68.8% are unmarried (single or divorced), and 71.3% are individuals who do not live in a marital union.

In terms of education level, 3.5% (*n* = 14) are illiterate. 13.2% (*n* = 53) dropped out of elementary school, 8.5% (*n* = 34) are elementary school graduates, 19.5% (*n* = 78) dropped out of middle school, 17.3% (*n* = 69) are middle school graduates, 14.2% (*n* = 57) dropped out of high school, and 18.8% (*n* = 75) are high school graduates. Only 5% (*n* = 20) had a higher level of education.

51.2% (*n* = 205) of participants committed their first theft between the ages of 13 and 17, and 30% (*n* = 120) between the ages of 18 and 24. Thus, 81.2% committed their first theft before the age of 24.

Of the 310 participants with a history of substance use, 61% (*n* = 189) first tried the substance at the age of 13–14. 23.5% (*n* = 73) were aged 15–17, 12.2% (*n* = 38) were aged 18–24, and 3.3% (*n* = 10) were aged 25 and above. Accordingly, 84.5% of substance users started using substances before the age of 18.

The study consisted of two phases. The first phase examined the effect of substance procurement needs on theft crime; the second phase assessed impulsivity in the relationship between theft crime and substance use. The sample for both phases was determined using purposive

sampling due to reasons such as the limited conditions of the prison, participation based on voluntariness, and security measures.

Female participants were not included in the study due to the female crime rate of 4.1% and the theft crime rate of 6.2% reported by the Turkish Statistical Institute (TURKSTAT, 2024), the substance use rate among women being lower than that among men (4%) reported by the General Directorate of Security (Republic of Turkiye Ministry of Interior, General Directorate of Security, 2018), and the unsuitability of female prison conditions.

Data Collection Tools

Within the scope of the study, the assessment of prisoners was carried out using a demographic information form prepared through field research and the Turkish adaptation of the Barratt Impulsivity Scale Short Form (BIS-11-KF).

Demographic Information Form

A 15-question Demographic Information Form was prepared (by the researcher in line with the purpose of the study, based on field research and the opinions of psychologists working in the field) to obtain information about the demographic characteristics of the prisoners. It consists of questions designed to obtain demographic information such as the primary reason for committing the theft offense (which led to their sentencing), the fundamental reason for all theft offenses committed, marital status, age range, educational status, age at first theft, substance use, and age at first substance use. For the question on the reason for theft, which is one of the stages of the research, the first reason for theft that led to their conviction was used for the evaluations due to the clear separation of substance use and other options.

Barratt Impulsiveness Scale Short Form (BIS-11-KF)

The scale, developed by Barratt in 1959, was converted to BIS-11-KF by Spinella in 2007 (Tamam et al., 2013). It is a self-report measure consisting of 15 questions, adapted into Turkish by Tamam et al. in 2013. The scale is a four-point Likert-type scale with the following scoring format: 1 = *Rarely/Never*, 2 = *Sometimes*, 3 = *Often*, 4 = *Almost always/Always*. While other items are scored from 1 to 4, items 1, 5, 6, 11, and 15 are reverse-scored. The scale consists of three subscales: attention impulsivity (2, 3, 7, 8, 9), motor impulsivity (4, 10, 12, 13, 14), and non-planning impulsivity (1, 5, 6, 11, 15).

In the reliability study, the internal consistency of the 15-item new form's subscales was determined as Cronbach's alpha of 0.82 for the total scale, 0.80 for the non-planning (NP) subscale, 0.70 for motor impulsivity (MI), and 0.64 for attentional impulsivity (AI). The total scale and all subscales showed moderate to good (0.31-0.67) positive correlations.

Procedure

The research population consisted of male prisoners convicted of theft at the Type T Closed Prison in Istanbul. The sample size was determined to be 384 according to the Cochran formula and increased to 412 to enhance the power of the analysis (Alp & Şen, 2021). As a result of checking the data forms, 12 forms were excluded from the analysis because they were incompletely filled out, and the final sample consisted of 400 individuals.

Before proceeding to data analysis, the distribution characteristics of the Barratt Impulsiveness Scale Short Form (BIS-11-KF) scores were examined, and it was determined that the variables did not follow a normal distribution. In this context, the Mann-Whitney U test was preferred to compare impulsivity levels between two independent groups. The study aimed to achieve 80% statistical power; however, due to limited resources in prison conditions and reduced voluntary participation, this target could not be met. The power value obtained for the Mann-Whitney U test conducted with the sample sizes (n = 51 and n = 56) is approximately 0.71, indicating a 71% probability of detecting a significant difference, which is considered sufficient for many studies (Zhu, 2021).

The study was conducted in two phases. In the first phase, demographic forms were administered to 400 participants. In the second phase, a total of 106 participants who had also participated in the first phase were included: 51 volunteers (Group A) who stated they committed theft to obtain drugs and 55 volunteers (Group B) who committed theft for non-drug-related reasons. Participants were asked to write the letter "A" or "B" in the upper right corner of their forms to indicate which group they belonged to. In this part of the study, as in the study as a whole, not all participants could be included due to the limiting factors mentioned above and the participants' lack of sufficient interest in participating in the second phase.

The study was conducted between August 18 and September 2, 2023. The sessions were held in the prison's education hall in groups of 15-20 people, arranged so that participants could not see each other's responses. Both phases lasted approximately 20–25 minutes. Prison education staff assisted 14 inmates who were illiterate.

Participants were informed about the purpose of the study, that it was voluntary, and that they could leave at any time, and they signed an "Informed Consent Form. Ethical approval for this study was obtained from the Ethics Committee of the İstanbul Ticaret University (number 305262; December 1, 2023) and the necessary permission was obtained from the General Directorate of Prisons and Detention Houses of the Ministry of Justice (approval no: 57292265-204.04-721/70910).

Inclusion criteria for the study included being an inmate and participating voluntarily, while exclusion criteria included not having a serious psychological/psychiatric diagnosis (schizophrenia, bipolar disorder, etc.).

Data Analysis

Frequencies and percentages for categorical variables in the Demographic Information Form are provided. In the marital status variable, the options "separated" and 'divorced' were combined with the "other" option due to the low participant rate.

In the education level variable, the options "dropped out of associate's degree, associate's degree graduate, dropped out of university, university graduate, dropped out of graduate school, and graduate school graduate" were combined and the option "dropped out of associate's degree or above" was created because the participant rate was very low.

In the age of theft variable, the 40-44, 45-49, and 50+ age groups were combined due to low participant rates, creating the 40 years and older variable.

Since the number of data points for the age of substance use was very small, the "30-39 years old" and "25-29 years old" options were combined and changed to the "25 years old and above" option.

CrossTab was used in the comparison of categorical variables, and the relevant values that meet the assumptions for comparative table analysis are provided.

The reliability analysis of BIS-11-KF was performed. Descriptive statistics for the impulsivity scale total score and subscale scores, including minimum, maximum, mean, standard deviation, median, and interquartile range values, were provided. The normality test for the distribution of the impulsivity scale total score and subscale scores was determined using the Kolmogorov Smirnov test. The tests concluded that the distribution was not normal, and the Mann Whitney U test, a non-parametric test, was applied to compare impulsivity between groups.

The statistical significance level for the study was set at $p <$ .05. Statistical analyses were conducted using Microsoft Excel and the IBM SPSS Statistics software (Version 22.0).

Results

When the data obtained in terms of substance use in the study were evaluated, it was seen that 77.5% (n = 310) of the 400 convicted participants arrested for theft offense had substance use. As seen in Table 1, among these 310 participants, there were 63.3% (n = 253) (people who stated that they committed the crime of theft due to the need to obtain substances, while 18.4% (n = 57) people stated that they did not steal due to substance use, even though they had substance use.

Table 1
Distribution of Participants According to Their İnitial Reason for Theft

What was the cause of the first theft?	n	%
Eating/drinking	62	15.5
For substance supply	253	63.3
Gaming	17	4.3
Other	68	17.0
Total	400	100

As seen in Table 1 and Table 2 respectively, for both the first theft, which constitutes a criminal offense and causes legal punishment, 63.3% (n =253) and for the main reason that causes all theft behaviors in general, 55.5% (n = 222), the need to obtain substances clearly constituted the biggest reason for theft behavior. In Table 2, it is seen in the comparison of the first theft and the main reason for theft that those who commit theft for the two situations are statistically significantly similar (χ2 = 255.471, p = .001), in other words, those who commit their first theft for the purpose of obtaining substances continue to steal for the same reason in the following period (85.4%, n = 216). Namely, the initial reason for theft acted as a trigger and contributed to the continuation of criminal behavior through the addictive cycle associated with SUD.

Table 2

Comparison of the Reasons for Theft of the Participants

Basic need that causes theft behavior	Group 1 n (%)	Group 2 n (%)	Group 3 n (%)	Group comparison
To buy substances	216 (85.4)	6 (4.1)	222 (55.6)	$\chi^2(1) = 255.47, p < .001$
Eating, drinking, and traveling	11 (4.3)	67 (45.9)	78 (19.6)	
Desire for nightlife/luxury lifestyle	19 (7.5)	33 (22.6)	52 (13.0)	
Other	7 (2.8)	40 (27.4)	47 (11.8)	
Total	253 (100)	146 (100)	399 (100)	
Age	Group 1 n (%)	Group 2 n (%)	Group 3 n (%)	Group comparison
18-24	40 (15.8)	12 (8.2)	52 (13.0)	$\chi^2(1) = 50.72, p < .001$
25-29	65 (25.7)	22 (15.1)	87 (21.8)	
30-34	61 (24.1)	20 (13.7)	81 (20.3)	
35-39	50 (19.8)	29 (19.9)	79 (19.8)	
40-44	20 (7.9)	25 (17.1)	45 (11.3)	
45-49	11 (4.3)	12 (8.2)	23 (5.8)	
50+	6 (2.4)	26 (17.8)	32 (8.0)	
Total	253 (100)	146 (100)	399 (100)	
Marital Status	Group 1 n (%)	Group 2 n (%)	Group 3 n (%)	Group comparison
Married	57 (22.5)	58 (39.5)	115 (28.7)	$\chi^2(1) = 13.80, p = .001$
Single	153 (60.5)	65 (44.2)	218 (54.5)	
Other	43 (17.0)	24 (16.3)	67 (16.8)	
Total	253 (100)	147 (100)	400 (100)	
Level of education	Group 1 n (%)	Group 2 n (%)	Group 3 n (%)	Group comparison
Illiterate	5 (2.0)	9 (6.1)	14 (3.5)	$\chi^2(1) = 20.84, p = .004$
Elementary school dropout	32 (12.6)	21 (14.3)	53 (13.2)	
Elementary school graduate	21 (8.3)	13 (8.8)	34 (8.5)	
Middle school dropout	50 (19.8)	28 (19.1)	78 (19.5)	
Middle school graduate	42 (16.6)	27 (18.4)	69 (17.3)	
High school dropout	49 (19.4)	8 (5.4)	57 (14.2)	
High school graduate	45 (17.8)	30 (20.4)	75 (18.8)	
Associate degree dropout and above	9 (3.5%)	11 (7.5)	20 (5.0)	
Total	253 (100%)	147 (100)	400 (100)	
Age of first theft	Group 1 n (%)	Group 2 n (%)	Group 3 n (%)	Group comparison
13–17	146 (57.7)	59 (40.7)	205 (51.5)	$\chi^2(1) = 23.58, p = .004$
18–24	74 (29.2)	46 (31.7)	120 (30.2)	
25–29	20 (7.9)	15 (10.3)	35 (8.8)	
30–34	7 (2.8)	9 (6.2)	16 (4.0)	
35–39	5 (2.0)	7 (4.8)	12 (3.0)	
40+	1 (0.4)	9 (6.2)	10 (2.5)	
13–17	253 (100)	145 (100)	398 (100)	
Substance use status	Group 1 n (%)	Group 2 n (%)	Group 3 n (%)	Group comparison
Yes	246 (97.2)	64 (43.5)	310 (77.5)	$\chi^2(1) = 153.73, p < .001$
No	7 (2.8)	83 (56.5)	90 (22.5)	
Total	253 (100)	147 (100)	400 (100)	
Age of first substance use	Group 1 n (%)	Group 2 n (%)	Group 3 n (%)	Group comparison
13–14	156 (63.4)	32 (50.8)	188 (60.8)	$\chi^2(1) = 19.58, p < .001$
15–17	63 (25.6)	10 (15.9)	73 (23.6)	
18–24	21 (8.6)	17 (27.0)	38 (12.3)	
25+	6 (2.4)	4 (6.3)	10 (3.3)	
Total	246 (100)	63 (100)	309 (100)	

Table 2 (continue)

Comparison of the Reasons for Theft of the Participants

Use one or more types of substances	Group 1 n (%)	Group 2 n (%)	Group 3 n (%)	Group comparison
Single type	64 (73.6)	23 (26.4)	87 (100)	$\chi2(1)$ = 3.12, p = .078
Multiple types	179 (83.3)	36 (16.7)	215 (100)	
Total	243 (80.5)	59 (19.5)	302 (100)	

Note. Group 1 = Participants who committed theft to obtain substances. Group 2 = Participants who committed theft for other reasons, N = 400

Table 2 presents the demographic characteristics of all participants, while at the same time, the differences between the two groups who committed theft due to the need for substance supply and other reasons were compared and statistically evaluated.

According to the comparison based on the ages of the participants, there was a statistically significant difference ($p < .001$) between the first group, which stated the need to obtain substances as the reason for theft, and the second group, which stated that they committed theft for other reasons, and the first group consisted of younger individuals (Table 2).

When the two groups were compared in terms of marital status, it was found that there was a statistically significant difference between the reasons for theft and the marital status of the participant ($p = .001$). The marriage rate of the first group was significantly lower than the second group; 22.5% ($n = 57$) of this group were married, while 39.5% ($n = 58$) of those who stole for other reasons were married (Table 2).

A statistically significant difference was found between the reason for theft and the participants' level of education ($p = .004$). According to the results, the educational level of the first group-those who committed theft to obtain substances-was higher (Table 2).

A significant difference also emerged between the age of first theft and the reasons for stealing ($p < .001$). Notably, 57.7% ($n = 146$) of participants who committed theft to obtain substances reported engaging in theft before the age of 18 (between 13 and 17 years) (Table 2). Overall, participants who committed theft under the age of 18 for either reason constituted 51.5% ($n = 205$) of the total sample.

The analysis revealed a significant association between substance use prior to incarceration and the reason for theft ($p < .001$). Among participants who committed theft to obtain substances, 97.2% ($n = 246$) reported ongoing substance use before imprisonment (Table 2). Similarly, a statistically significant difference was observed in the

duration of substance use before entering prison for theft-related reasons ($\chi2 = 48.565$ and $p < .001$). Among those who stated they committed theft due to substance acquisition, 61.8% ($n = 149$) reported using substances daily, while this rate was found to be 16.1% ($n = 5$) among those who committed theft for other reasons. This rate is 10.4% ($n = 25$) among those who use it once a week, and 27.8% ($n = 67$) and 71% ($n = 22$) among those who use it once a month or less.

When the reason for theft and the age of the participant's first substance use were compared, it was found that there was a statistically significant difference between the reasons for stealing and the age of first substance use ($p = .001$). The first group who stole to obtain substances exhibited theft behavior at an earlier age than the second group who stole for other reasons (Table 2).

There was no statistically significant difference between the reasons for theft and whether the substance used was single or multiple ($p = .078$) (Table 2). However, a statistically significant difference was found when the age of first substance use was compared with single or multiple substance use ($\chi2 = 15.699$ and $p < .001$) and it was observed that the group that started substance use at an earlier age had more than one substance use.

Additionally, the study compared the reasons for participants committing theft, specifically between those who stole to obtain substances and those who stole for other reasons. It was found that those who stole for substance acquisition had a higher rate of committing both another type of crime beside theft and multiple crimes compared to those who stole for other reasons ($\chi2 = 9.874$ and $p = .007$).

In the second stage of the study, as seen in Table 3, the group who stole for substance supply showed significantly more impulsivity both in the overall impulsivity ($p < .001$) and in the sub-dimensions of impulsivity; nonplanning impulsivity ($p = 0.16$), motor impulsivity ($p < .001$) and attention impulsivity ($p = .016$).

Following the Mann–Whitney U tests, Bonferroni and Holm

corrections were applied for multiple comparisons ($k = 4$). According to the Bonferroni adjustment, only motor impulsivity and total impulsivity remained statistically significant ($p < .0125$). However, the Holm correction indicated that all four dimensions of impulsivity remained significant ($p_adj < .05$).

Table 3

Comparison of Impulsivity Total and Subscale Scores According to Reasons for the Theft

Scale Dimension	Group	*n*	Median (IQR)	
Nonplanning impulsivity	Group 1	54	13.5 (4.5)	$Z = 2.403, p = .016$
	Group 2	51	15.0 (5.0)	
Motor impulsivity	Group 1	54	8.0 (4.0)	$Z = 4.514, p < .001$
	Group 2	51	10.0 (3.0)	
Attention impulsivity	Group 1	54	8.0 (3.0)	$Z = 2.409, p = .016$
	Group 2	51	9.0 (3.0)	
Impulsivity (Total)	Group 1	54	30.0 (8.25)	$Z = 4.161, p < .001$
	Group 2	51	35.0 (9.0)	

Note. Group 1= Those who commit theft due to the need to supply substances. Group 2= Those who commit theft for other reasons, IQR = Interquartile Range

Discussion

This study aimed to reveal the relationship between the need to obtain substances arising from substance use disorder and the theft crimes committed, as well as the difference in impulsivity between those who steal to obtain substances and those who steal for other reasons. The research results support the hypotheses that "there is a relationship between theft crimes and the need to obtain substances" and "there is a difference in impulsivity between those who commit theft to obtain substances and those who commit theft for other reasons." The study found that substance acquisition needs accounted for 63.3% of the participants' first theft offenses leading to imprisonment and 55.5% of their subsequent theft offenses, with 85.4% of these individuals being similar.

Similar findings to the research results were also found in studies conducted by Ibrahim et al. (2021). In these studies, substance users' criminal behaviors, particularly theft offenses, were found to be associated with SUD. Ibrahim et al. (2021) determined that 55.8% of individuals committed theft to obtain substances and indicated that substance use was the most significant factor leading to drug dealing offenses. Another study with crystal methamphetamine users found that substance use disorder increased the likelihood of reoffending in theft crimes, with 82.6% of participants committing theft crimes alone (Espinosa, 2018.

Berger (2019), in his study on criminal gangs, showed how the relationship between substance use disorder and theft interacts with crime groups and lifestyle choices. It was found that 83.1% of gang members used substances, and the most common crime committed by gang members was

theft. Substance use is considered an effective factor not only in committing a crime but also in its recurrence. A study by Karlsson and Hakansson (2022) emphasized that criminals who use substances are more likely to commit crimes against property, and therefore theft crimes, which constitute the majority of these crimes. In this study conducted among convicted substance abusers, 78% were involved in property crimes within 2.7 years, and 68% were involved in violent crimes; individuals with higher substance use were found to reoffend more frequently. Factors directly or indirectly related to substance use, such as injection drug use, amphetamine use, history of violent and theft crimes, homelessness, and psychiatric problems, were also effective in the recidivism of crime. In general, substance use increases the likelihood of recidivism in all crime groups, including theft.

When other data obtained in the study were evaluated, it was first determined that there was a significant relationship between the ages of the participants and their reasons for committing theft. Among participants under the age of thirty-five, the proportion of those who committed theft to obtain drugs was found to be higher than those who committed theft for other reasons. Similarly, in a study conducted by Azevedo et al. (2022), theft was determined to be the most common type of crime among university students; it was emphasized that the main reason for this crime was drug use.

Ibrahim et al. (2021) conducted demographic studies showing that the age group with the highest number of users is 21-39, that these individuals commit at least two crimes per week, and that these crimes are substance-related crimes and theft. This is consistent with the high

rates of theft for substance acquisition among the younger age groups in this study.

The study found that 81.3% of participants committed their first theft between the ages of 13 and 24. Similarly, Camilleri and Saliba (2018) noted that early involvement in crime during adolescence is associated with substance use disorders. Involvement in crime during adolescence, especially when combined with substance use, leads to serious substance use disorders and increases the risk of criminal tendencies. It was found that individuals aged 18-29 were more likely to be involved in theft and other violent crimes, while older age groups were more likely to be involved in substance-related crimes; this shows that theft crimes typically begin at a young age and often co-occur with substance use disorders (Mundia, 2020).

When assessed in terms of marital status, a statistically significant difference was found between the reasons for theft and marital status. The percentage of married individuals who commit theft to obtain drugs (22.5%) is lower than those who commit theft for other reasons (39.5%). A study by Ibrahim et al. (2021) found that the majority of individuals detained for substance-related crimes were single. In another study, Mundia (2020) investigated the relationship between marital status and crime tendencies but found no direct link between being married or single and theft or substance acquisition. However, it was emphasized that marital status may affect individuals' motivations for committing crimes, but this is dependent on complex socioeconomic factors. The findings indicate that married individuals are less likely to be involved in theft crimes committed for substance acquisition, but when this situation is evaluated in conjunction with factors such as the fact that those who commit theft for substance acquisition are generally young, started using substances at an early age, have the primary goal of obtaining the substance, and face legal sanctions due to their use, it appears to be the result of a reciprocal causality cycle.

This study found a significant relationship between participants' educational level and their reasons for committing theft, and that those who commit theft to obtain drugs have a higher educational level than those who commit theft for other reasons, despite their high school dropout rates. This may be because the group stealing for other reasons comes from a lower socioeconomic background and steals for the economic reasons that this entails. Young people who use substances can mostly complete their primary education and have the opportunity to pursue higher education, while this rate is low among those who steal solely for economic reasons. It is noteworthy that the dropout rate from middle school and high school among the group that steals to obtain drugs is 24.7% of the participants, while this rate is 9% among those who steal for other reasons, demonstrating the negative impact of drug use on school attendance and academic achievement. Similar results were found in a study by Dervishi and Ibrahimi (2018), where 37.3% of adolescents believed that substance use had a harmful effect on their education. In their study examining the effects of substance use on education, Lorenzetti et al. (2020) showed that children who used marijuana during their school years had lower academic achievement and higher dropout rates in high school compared to children who did not use it. Rodriguez (2021) found a weak relationship between educational level and crime, but emphasized that dropping out of school has an effect on the increase in crime, especially violent crime. This shows the effect of dropping out of school or leaving school on the concept of crime and also explains the high dropout rates in middle and high school revealed by the study's results. On the other hand, Mundia (2020) argued that low educational attainment, combined with social factors such as poverty, family problems, and access to drugs, increases the likelihood of young offenders committing theft. According to another study conducted in Turkiye, no significant difference was found between drug-using and non-drug-using prisoners in terms of educational attainment (Şeker, 2021).

In this regard, new research is needed to explain the causal relationship between education and the concept of crime, particularly the relationship between substance use and theft. In general, the high dropout rates in middle school and high school (at the end of primary education) in the study also suggest the existence of a reciprocal cause-and-effect cycle in terms of SUD and school dropout.

When the participants' age at first theft and their reasons for committing theft were examined, a significant relationship was found between the two variables. Specifically, 57.7% of those who stole to obtain drugs committed theft between the ages of 13 and 17. This shows that substance use and theft are linked at an early age, and that those who commit this crime to obtain drugs start stealing at a younger age. There are studies in the literature that support this finding. For example, Camilleri and Saliba (2018) predict that early substance use during adolescence increases the risk of SUD and, indirectly, theft, and that every £1 spent on substance prevention yields a gain of £3-5 when material losses such as theft and prison expenses are taken into account.

This study found that individuals who commit theft to obtain drugs had a significantly higher frequency of drug use prior to incarceration. Of the participants who stole to obtain drugs, 61.8% reported daily use and 86.7% reported use more than once a month prior to incarceration. Similarly, in a large-scale study conducted among users of amphetamine-type substances in Australia, individuals with a criminal record were found to use drugs more frequently (on more than 13 of the last 28 days) than other participants (Black et al., 2023. According to research conducted by Bukten et al. (2020) with prisoners in Norwegian prisons, 47% of participants reported using drugs daily before entering prison, and 63% reported being under the influence of drugs, alcohol, or both when committing the crime that led to their sentencing. These findings prove that substance use and its frequency are among the factors that cause theft crimes.

Analysis of the age at which participants began using drugs and their reasons for committing theft revealed that individuals who began using drugs at an early age committed theft primarily to obtain drugs, compared to those who began at a later age. This study found that the majority of participants (60.8%) first used drugs between the ages of 13 and 14. This finding is consistent with the literature indicating that early-age substance use increases the risk of developing SUD in later years. In a study by Fosco et al. (2024), conducted in Iowa and Pennsylvania, the PROSPER substance use prevention program, which was implemented for 6th and 7th graders, aimed to prevent substance use. It was found that the program also reduced antisocial behaviors indirectly related to crime and the risk of SUD in the 9th grade (age 15, the age at which use is most common in adolescence) and in the subsequent young adult period. This is another indication that substance use begins much earlier than previously anticipated. It has also been shown that substance use at an early age significantly increases the risk of developing substance use disorders in individuals, especially substance use that begins in adolescence increases the risk of persistent substance use disorders and substance-related problems in later years (Camilleri & Saliba, 2018; Winters et al., 2011). According to this study, individuals who began using substances at a later age had a lower rate of theft.

There is a noticeable difference between EGM data and research findings regarding the age of onset of substance use. When examining the age of onset of substance use among participants who reported substance use in the study, the findings indicate that 84.5% of participants first used substances between the ages of 13 and 14, and under the age of 18, suggesting that substance use begins at a much younger age than previously estimated and recorded by EGM. The 2022 EGM Substance Users Profile Analysis (2023) Narcologist Report states that the average age of initiation is 21.99 years. Since EGM data includes assessments based on criminal records, it is thought that the data on the timing of use beginning in childhood or adolescence does not fully reflect the actual age of initiation. For example, Şirin and Uzun (2021) found that the average age of 250 adolescents receiving inpatient treatment at the Bursa Child Alcohol and Substance Treatment Center (ÇAMATEM) between 2014 and 2019 was 16.24, while the average age of onset of use was 12.83.

In a study conducted in Ankara by Arslan and Sarı (2019), the average age of onset was 14, while Ögel (2022) found that the average age of onset for substance abusers undergoing treatment was 16. The same study showed that the age at which the family became aware was 21, and the age at which problems with the family began was 22. This is another factor explaining the difference between the age in the EGM data and the age obtained in the studies.

In this study, no significant difference was found between the group that stole to obtain drugs and the group that stole for other reasons in terms of the variety of drugs used (multiple drug use). However, a relationship was observed between the age of onset of substance use and single or multiple use, with those who started using substances at an earlier age using multiple substances more frequently. According to the research by Bukten et al. (2020), 46% of substance users in prison use five or more types of substances, and 30% use more than ten types. It is thought that multiple substance use can have many negative consequences. Marvi et al. (2023) stated that the combined use of more than one substance leads to more intense psychological problems such as depression, anxiety, and sleep disorders compared to single use.

The study found a relationship between committing theft and being convicted of crimes other than theft. When participants with records for crimes other than theft were examined, it was found that those who committed theft to obtain drugs had a higher rate of involvement in other crimes. Specifically, among those who committed multiple crimes, the rate of those who committed theft to obtain drugs was found to be 71.3%. Similarly, Liu et al. (2018) demonstrated in their study that young substance users' criminal behavior continued in connection with their substance use. Berger (2022) drew attention to the relationship between substance use disorder and criminal behavior, emphasizing that criminal tendencies that begin

with substance use continue to increase over time. In a review on the relationship between substance use and crime, it was found that individuals who use substances have crime rates 2.8 to 3.8 times higher (Bennett et al., 2008). Furthermore, a study by Baloran et al. (2024) indicated that most crimes committed were substance use-related, particularly prevalent among individuals who committed multiple crimes.

According to the results obtained in the second phase of the study, which examined impulsivity, participants who stated that they committed theft to obtain drugs showed higher levels of impulsivity compared to the group that committed theft for other reasons. Analyses using the BIS-11-KF (short form) analysis showed that individuals who committed theft had higher levels of impulsivity than those who stole for other reasons, both in terms of general impulsivity and in the subdimensions (attention impulsivity, motor impulsivity, and planning impulsivity). This indicates that substance users have difficulty controlling their physical responses and focus on short-term goals without considering the future. A study by Fantin et al. (2024) found that the crime rate among individuals with multiple substance use was 64.9% and that impulsivity was a mediating factor in criminal behavior among individuals with substance use disorders.

According to another study showing that impulsivity is a triggering factor for first-time substance use, impulsive behaviors increase as the severity of substance use disorder increases (Şeker & Zengin Taş, 2023). Lattimore et al. (2010) state that all prisoners who commit repeat offenses use substances and that, as in this study, those who commit repeat offenses show higher impulsivity in all three impulsivity subdimensions (as cited in Şeker & Zengin Taş, 2023). According to these studies, impulsivity is high in all prisoners compared to individuals who have not committed crimes, while prisoners who use substances have higher rates of repeat offenses and impulsivity. The high impulsivity of the group committing theft for substance use is similar to previous studies in the field, and the research findings reveal this situation. However, there are also studies that argue that some subdimensions of impulsivity are not affected by substance use. According to the results of Arrondeau et al.'s (2023) study on cocaine use in rats, motor impulsivity and risk-taking impulsivity run parallel, but motor impulsivity is an important factor that paves the way for substance use, while risk-taking impulsivity has a minimal effect on this relationship. This suggests that risk-taking impulsivity may only be effective during initial use.

According to De Wit (2009), individuals who use substances

are more impulsive than those who do not, and according to both longitudinal and cross-sectional studies, impulsivity is both a cause and a consequence of substance use. Research conducted by Walters (2019) found that theft and other property crimes, as well as drug use and sale crimes, are associated with cognitive impulsivity, while behavioral crimes such as cruelty to animals and bullying at school are more closely associated with cognitive insensitivity. Research generally accepts the effect of impulsivity on the relationship between theft and the need to obtain drugs and supports the findings of this study.

When the general demographic characteristics of individuals convicted of theft who participated in this study were examined, the findings revealed certain trends. In this context, it is seen that participants who committed theft crimes are concentrated in the 18-39 age range. The fact that 73% of the participants are in this age range shows that theft crimes are predominantly committed by young adults. This is consistent with the study's finding that the age of initiation into substance use is predominantly before this age range (84.5%).

When the marital status of the participants was examined, it was found that 71.3% were not married and 54.5% had never been married. This is consistent with findings in the literature regarding the potential impact of social ties, such as marriage, on criminal behavior. While the proportion of married participants was found to be 28%, according to 2023 data from the TURKSTAT, the marriage rate among men under the age of 65 in Turkiye is 61.4%. This difference is thought to be related to multifaceted factors such as substance use, unemployment, early criminal history, and societal perceptions of individuals with criminal records. Furthermore, considering the demographic structure of the participants, the higher proportion of individuals under the age of 40 compared to the general population may also have contributed to this difference. Since TURKSTAT sources do not provide marriage rates by age group, the marriage rates of the group with the highest number of participants could not be directly evaluated.

The low marriage rate and high divorce rate compared to the general population indicate that factors such as social environment, family structure, economic conditions, and education play a role in the formation of crime and offender profiles. Furthermore, marriage and family life can be considered a protective factor that prevents individuals from turning to crime. A study conducted by Shannon et al. (2016) in the United States found that the marriage rate among drug use cases brought to court was 27.7%. This proportional difference has not been observed in other

types of crime; in fact, married individuals have been found to be more prevalent in some crime groups. The same study found that the marriage rate among individuals incarcerated for theft was similar to the marriage rate among individuals brought to court for substance use. A study conducted by Ibrahim et al. (2021) in Malaysia found that 23% of individuals incarcerated for substance use were married, while 58.5% had never been married.

When the educational levels of the participants were examined, it was found that 19.5% had dropped out of middle school and 18.8% were high school graduates. While the rate of those who did not graduate from high school or higher education institutions was 76.2%, the rate of individuals with associate's degrees and higher education was 4.2%. The fact that the rate of high school graduates was 18% and the rate of university graduates was 2.5% demonstrates the impact of projects that enable continuous education in prisons. However, this situation suggests that school dropout rates have changed due to the impact of these projects and that the actual high school and middle school dropout rates may be higher. When comparing the 2022 data from TURKSTAT on the educational status of males over 25 years old with the educational status of participants over 25 years old (348 individuals) in the study, the rate of high school graduation and above in the general population is 52.5%, whereas this rate is 6% among the participants. The rate of illiterate individuals is 0.9% nationwide in Turkiye, while it is 2.9% in the participant group. It is noteworthy that the rate of illiterate individuals among those who committed theft for the purpose of obtaining substances is at the same level as the general population and lower compared to other participants. Although research shows education, crime, and substance use in different dimensions, there is a need for more comprehensive investigation of the cause-and-effect relationship, especially regarding school absenteeism linked to substance use.

The study has certain limitations. First, the sample consisted only of male individuals convicted of theft offenses at the Ümraniye T-Type Closed Prison, which restricts the generalizability of the findings to female offenders and other crime types. Second, the data collection process was constrained by prison conditions, security protocols, time limitations, and participants' willingness to participate. The reduced voluntary participation during the second phase decreased the sample size and, consequently, the statistical power. Finally, the data were obtained through self-report measures, which may have been influenced by social desirability bias or concerns about legal consequences related to substance use, potentially affecting the accuracy of responses.

Conclusion and Recommendations

In conclusion, the study's findings show that individuals who steal to obtain drugs are younger than those who steal for other reasons, become involved in crime at an earlier age, have higher levels of substance use disorder, use multiple substances more intensely and frequently, have lower marriage rates, and have higher levels of impulsivity. Furthermore, these individuals were found to be more prone to committing crimes and to be involved in crimes other than theft too. After these findings, there were four recommendations focusing on prevention strategies and policy development.

Strategies for preventing substance use: Substance use disorder creates negative effects on individuals, families, and society in many areas such as health, economy, and security. The treatment and rehabilitation process is quite difficult, and it is generally not possible to speak of a complete recovery. Therefore, the most effective treatment strategy is to develop policies aimed at preventing the initiation of use.

Research indicates that substance use predominantly begins between the ages of 13 and 15, a period during which individuals' control mechanisms are not yet fully developed. Especially before the age of 13, considering risk factors such as impulsivity, children should be monitored starting from primary education, and at-risk groups should be identified. Within the framework of approaches aimed at preventing stigmatization, a protective system should be established by providing support from family, education, and social environments. It is anticipated that the budget allocated for this system will, in the long term, reduce public health and security expenditures, thereby generating societal benefits.

Impulsivity: The factor of impulsivity must be taken into account in combating substance use disorders, and intervention approaches should be developed according to individuals' impulsivity profiles in both prevention and treatment processes.

Relationship between substance use and crime: The findings of this research show that substance use disorder is one of the most significant causes of theft crimes. According to the research results, substance users often commit not only theft but also at least one other different crime such as murder, assault, robbery, or deprivation of

liberty. Consideringthis situation, the necessity of creating a separate crime category for substance use-related offenses emerges. Such a classification will more clearly reveal the effects of substance use on social security and can contribute to the development of more effective policies in the fight against crime.

References

Alp, Ö., & Şen, S. (2021). Eğitim yönetimi ve denetimi alanında yazılan lisansüstü nicel tezlerin incelenmesi: Bir sistematik derleme [An examination of quantitative postgraduate theses written in the field of educational administration and supervision: A systematic review]. *Türk Eğitim Bilimleri Dergisi [Turkish Journal of Educational Sciences], 19*(1), 24-53. https://doi.org/10.37217/tebd.774591

Alpay, N., Karamustafaoğlu, N., & Kükürt, R. (1995). Madde bağımlılarında suç [Crime among substance addicts]. *Düşünen Adam: The Journal of Psychiatry and Neurological Sciences, 8*(2), 16-17. https://arsiv.dusunenadamdergisi.org/ing/Articledetails 7a9e.html?MkID=646

Amerikan Psikiyatri Birliği. (2022). *Ruhsal bozuklukların tanısal ve istatiksel el kitabı* (5. baskı, metin revizyonu; DSM-5-TR) [Diagnostic and Statistical Manual of Mental Disorders (5th ed., text revision; DSM-5-TR)]. HYB Yayıncılık.

Arrondeau, C., Urueña-Méndez, G., Bellés, L., Marchessaux, F., Goutaudier, R., & Ginovart, N. (2023). Motor impulsivity but not risk-related impulsive choice is associated to drug intake and drug-primed relapse. *Frontiers in Behavioral Neuroscience, 17*, Article 1200392. https://doi.org/10.3389/fnbeh.2023.1200392

Arslan, H., & Sarı, E. (2019). *Ailelerin sosyo-ekonomik seviyeleri ve aile ilişkilerinin ergenlerde madde bağımlılığı üzerindeki etkileri* [Effects of families' socio-economic levels and family relationships on substance addiction among adolescents]. *Medicine Science, 8*(3), 726-731. https://doi.org/10.5455/medscience.2019.08.9064

Artuk, M. E., & Alşahin, M. E. (2017). *Kriminoloji* [*Criminology*]. Adalet Yayınları.

Azevedo, V., Nunes, L. M., & Sani, A. (2022). Is campus a place of (in) security and crime? Perceptions and predictors among higher education students. *European Journal of Investigation in Health, Psychology and Education, 12*(2), 193-208. https://doi.org/10.3390/ejihpe12020015

Baloran, E. T., Mancha, L. J. D., Lomonsod, V. M. J. G. & Amodia, G. A. (2024). 'Looban': A multiple-case study on delinquency of teenagers shaped by dysfunctional families. *European Journal of Social Sciences Studies, 9*(5), 226-243. https://oapub.org/soc/index.php/EJSSS/article/view/1678/2251

Bennett, T., Holloway, K. & Farrington, D. (2008). The statistical association between drug misuse and crime: A meta-analysis. *Aggression and Violent Behavior, 13*(2), 107-118. https://doi.org/10.1016/j.avb.2008.02.001

Berger, R. (2019). Deviant group membership – joining, leaving, and behavior in criminal groups. *International Journal of Social Science Studies, 7*(6), 22-35. https://doi.org/10.1114/ijsss.v7i6.4427

Berger, R. (2022). Drug use/abuse and addiction: Perceived connections to criminal behavior and sadipathic offending. *World Journal of Social Science Research, 9*(3), 1-14. https://doi.org/10.22158/wjssr.v9n3p1

Black, E., Mammen, K., Deacon, R. M., Ezard, N., Mills, L., Dunlop, A. J., Montebello, M., Reid, D., Childs, S., Bruno, R., Shakeshaft, A., Siefried, K. J., Farrell, M., Holmes, J., & Lintzeris, N. (2023). Health and social characteristics of clients reporting amphetamine type substance use at entry to public alcohol and other drug services in New South Wales, Australia, 2016-2019. *Drug and Alcohol Review, 42*(2), 389-404. https://doi.org/10.1111/dar.13588

Bukten, A., Lund, I. O., Kinner, S. A., Rognli, E. B., Havnes, I. A., Muller, A. E., & Stavseth, M. R. (2020). Factors associated with drug use in prison--results from the Norwegian offender mental health and addiction (NorMA) study. *Health & Justice, 8(1),* 1-10. https://doi.org/10.1186/s40352-020-00112-8

Camilleri, N., & Saliba, A. (2018). Risk factors for adolescents developing substance use disorders: What should our prevention programs be targeting? *Substance Abuse Journal, 2*(1), 39-45. https://www.mmsjournals.org/index.php/MDHG/article/view/93

Corman, H., & Mocan, H. N. (2000). A time-series analysis of crime, deterrence, and drug abuse in New York City. *American Economic Review, 90*(3), 584-604. https://doi.org/10.1257/aer.90.3.584

Danışman, M., Uçar Hasanlı, Z., Zengin İspir, G., & Katar, K. (2024). A dramatic case report: Achieved remission in methamphetamine addiction after changing city, yet ended up in prison. *Journal of Addiction Research & Therapy*. https://doi.org/10.21203/rs.3.rs-4481265/v1

De Wit, H. (2009). Impulsivity as a determinant and consequence of drug use: A review of underlying processes. *Addiction Biology, 14*(1), 22-31. https://doi.org/10.1111/j.1369-1600.2008.00129.x

Delisi, M., Vaughn, M. G., Salas-Wright, C. P., & Jennings, W. G. (2015). Drugged and dangerous: Prevalence and variants of substance use comorbidity among seriously violent offenders in the United States. *Journal of Drug Issues, 45*(3), 232-248. https://doi.org/10.1177/0022042615579237

Dervishi, E., & Ibrahimi, S. (2018). Risk factors related to juvenile drug use. *Open Journal for Psychological Research, 2*(2), 53-63. https://doi.org/10.32591/coas.ojpr.0202.01053d

Dolu, O. (2015). *Suç teorileri: Teori, araştırma ve uygulamada kriminoloji*. Seçkin Yayıncılık.

Espinosa, G. J. C. (2018). Gravedad de la adicción al cristal y reincidencia en el delito de robo [Crystal meth addiction severity and reincidence in the theft crime]. *International e-Journal of Criminal Sciences, 12*. https://ojs.ehu.eus/index.php/inecs/article/view/20330/18450

European Monitoring Centre for Drugs and Drug Addiction (EMCDDA). (2017). *European drug report 2017: Trends and developments.* https://www.emcdda.europa.eu/publications/edr/trends-developments/2017_en

European Monitoring Centre for Drugs and Drug Addiction (EMCDDA). (2021). *European drug report 2021: Trends and developments.* https://www.emcdda.europa.eu/publications/edr/trends-developments/2021_en

Fantin, E. H., Benzano, D., Ornell, F., Ruwel, A. G., von Diemen, L., Kessler, F. H. P., & Schuch, J. (2024). Implications of impulsivity on criminal behavior in individuals with substance use disorder. *Substance Use & Misuse.* https://doi.org/10.1080/15504263.2024.2370411

Fosco, G. M., Fang, S., Chen, L., Feinberg, M. E., & Spoth, R. (2024). A case study in developmental discontinuity: PROSPER interventions and adolescent substance use trajectories shape young adult substance use and mental health problems. *Journal of Research on Adolescence.* https://doi.org/10.1111/jora.12940

Ibrahim, F., Zakaria, E. B., Hassan, N. B., Kamaluddin, M. R., Sulaiman, W. S. W., & Yunos, N. A. B. (2021). Profiles and experiences of drug use and criminal involvement among Malay offenders in Malaysia. *EDUCATUM Journal of Social Sciences, 7*(1), 55-66. https://doi.org/10.37134/ejoss.vol7.1.6.2021

Karlsson, A., & Hakansson, A. (2022). Crime-specific recidivism in criminal justice clients with substance use. *International Journal of Environmental Research and Public Health, 19*(3), Article 1234. https://doi.org/10.3390/ijerph19031234

Kendler, K. S., Ohlsson, H., Karriker-Jaffe, K. J., Sundquist, J., & Sundquist, K. (2017). Social and economic consequences of alcohol use disorder: A longitudinal cohort and co-relative analysis. *Psychological Medicine, 47*(5), 925-935. https://doi.org/10.1017/S0033291716003032

Konuk, N. (2015). Dürtü kontrol bozukluklarının sınıflandırılması, kavramları ve tarihsel gelişim süreci [Classification, concepts, and historical development of impulse control disorders]. In L. Tamam (Ed.), *Dürtüsellik ve dürtü kontrol bozuklukları [Impulsivity and impulse control disorders]* (pp. 143-158). Kaknüs Yayınları.

Liu, L., Chui, W. H., & Chen, Y. (2018). Violent and non-violent criminal behavior among young Chinese drug users: A mixed methods study. *International Journal of Environmental Research and Public Health, 15*(3), 432. https://doi.org/10.3390/ijerph15030432

Lorenzetti, V., Hoch, E., & Hall, W. (2020). Adolescent cannabis use, cognition, brain health, and educational outcomes: A review of the evidence. *European Neuropsychopharmacology, 36*, 169-180. https://doi.org/10.1016/j.euroneuro.2020.01.012

Marvi, N., Haddadnia, J., & Fayyazi Bordbar, M. (2023). Evaluation of drug abuse on brain function using power spectrum analysis of electroencephalogram signals in methamphetamine, opioid, cannabis, and multi-drug abuser groups. *Journal of Biomedical Physics & Engineering, 13*(2), 181-192. https://doi.org/10.31661/jbpe.v0i0.2210-1550

Moeller, F. G., Barratt, E. S., Dougherty, D. M., Schmitz, J. M., & Swann, A. C. (2001). Psychiatric aspects of impulsivity. *American Journal of Psychiatry, 158*(11), 1783-1793. https://doi.org/10.1176/appi.ajp.158.11.1783

Mundia, L. (2020). A descriptive profile of selected Brunei convicts: Viewpoint. *Journal of Public Administration and Governance, 10*(3), 57-67. https://doi.org/10.5296/jpag.v10i3.17357

Ögel, K. (2022). *Moodist madde bağımlılığı araştırma raporu [Moodist substance addiction research report].* Özel Moodist Hastanesi. https://moodisthastanesi.com/tr/moodist-madde-bagimliligi-arastirma-raporuyayinlandi/

Ögel, K., Tamar, D., Evren, C., Hızlan, C. & Çakmak, D. (1999). Madde kullanıcılarının özellikleri: Türkiye'de çok merkezli bir çalışma (İkinci aşama) [Characteristics of substance users: A multicenter study in Türkiye (second stage)]. *3P Dergisi, Ek sayı*(4). https://www.ogelk.net/makale/asama2_rapor_3p.pdf

Özdemir, H. (2012). Aleksitimi: Psikolojik bir semptom mu, yoksa bir kişilik özelliği mi? [Alexithymia: A psychological symptom or a personality trait?] *Turkish Journal of Psychology Papers, 15*(30), 25-33. https://psikolog.org.tr/tr/yayinlar/dergiler/1031828/tpy1301996120120000m000099.pdf

Öztürk Emiral, G., & Gökler, M. E. (2024). Madde kullanım bozukluklarının küresel sağlık ve sosyal etkileri [Global health and social impacts of substance use disorders]. *Turkish Medical Journal, 9*(3), 126-132.https://doi.org/10.70852/tmj.1531194

Rehm, J., & Shield, K. D. (2019). Global burden of disease and the impact of mental and addictive disorders. *Current Psychiatry Reports, 21*(10), 10. https://doi.org/10.1007/s11920-019-0997-0

Republic of Turkiye Ministry of Interior, General Directorate of Security. (2018). *Türkiye'de genel nüfusta tütün, alkol ve madde kullanımına yönelik tutum ve davranış araştırması 2018 [Survey on attitudes and behaviors toward tobacco, alcohol, and substance use in the general population in Türkiye, 2018].* https://www.narkotik.pol.tr/kurumlar/narkotik.pol.tr/Duyurular/T%C3%9CRK%C4%B0YE%E2%80%99DE%20GENEL%20N%C3%9CFUSTA%20T%C3%9CT%C3%9CN%20ALKOL%20VE%20MADDE%20KULLANIMINA%20Y%C3%96NEL%C4%B0K%20TUTUM%20VE%20DAVRANI%C5%9E%20ARA%C5%9ETIRMASI.pdf

Republic of Turkiye Ministry of Interior, General Directorate of Security, Department of Anti-Narcotics Crimes. (2023). *Madde kullanıcıları profil analizi: 2022 yılı Narkolog raporu* [Profile analysis of substance users: Narkolog report 2022]. https://www.narkotik.pol.tr/kurumlar/narkotik.pol.tr/TUB%C4%B0M/Ulusal%20Yay%C4%B1nlar/NARKOLOG-2023-PROFIL-ANALIZI.pdf

Republic of Turkiye Ministry of Justice, General Directorate of Criminal Records and Statistics. (2022). *Ceza ve infaz kurumu istatistikleri 2022* [*Prison and correctional institution statistics 2022*]. https://adlisicil.adalet.gov.tr/Resimler/SayfaDokuman/220520231103381%20Ocak-31%20Aral%C4%B1k%202022%20tarihleri%20aras%C4%B1nda%20ceza%20infaz%20kurumlar%C4%B1na%20giren%20h%C3%BCk%C3%BCml%C3%BC%20su%C3%A7%20da%C4%9F%C4%B1l%C4%B1m%C4%B1,%202022.xlsx

Republic of Turkiye Ministry of Justice, General Directorate of Criminal Records and Statistics. (2023). *Ceza infaz kurumu istatistikleri 2023* [*Prison and correctional institution statistics 2023*]. https://adlisicil.adalet.gov.tr/Home/SayfaDetay/ceza-infaz-kurumu-istatistikleri-2023-haber-bulteni-yayimlandi20052024091112

Republic of Turkiye Turkish Statistical Institute (TURKSTAT). (2022). *Ulusal eğitim istatistikleri veri tabanı, Tablo 4* [*National education statistics database, Table 4*]. https://data.tuik.gov.tr/Bulten/Index?p=Ulusal-Egitim-Istatistikleri-2022-49756

Republic of Turkiye Turkish Statistical Institute (TURKSTAT). (2023). *Adrese dayalı nüfus kayıt sistemi sonuçları 2023* [*Address-based population registration system results 2023*]. https://data.tuik.gov.tr/Bulten/Index?p=Adrese-Dayali-Nufus-Kayit-Sistemi-Sonuclari-2023-49684

Republic of Turkiye Turkish Statistical Institute (TURKSTAT). (2024). *Türkiye istatistik portalı* [*Turkish statistical portal*]. https://data.tuik.gov.tr/Search/Search?text=su%C3%A7&dil=1

Rodriguez, A. (2021). Comprehensive human development without violence and seclusion: Is education a mitigating factor? *Research on Humanities and Social Sciences*, *11*(11), 72-78. https://www.iiste.org/Journals/index.php/RHSS/article/view/56707?utm_source=chatgpt.com#google_vignette

Shannon, L. M., Jackson Jones, A., Newell, J., & Neal, C. (2016). Examining the impact of prior criminal justice history on 2-year recidivism rates: A comparison of drug court participants and program referrals. *Criminal Justice and Behavior, 45*(2), 187-204. https://doi.org/10.1177/0093854816678917

Sibusiso, M. L., Setwaba, M., Nel, K., & Govender, I. (2022). Experience and behaviour(s) of students who use nyaope drug at a South African University. *Open Public Health Journal, 15*(1), Article e187494452212061. https://doi.org/10.2174/18749445-v15e221206-2022-94

Şeker, F. D. (2021). *Madde kullanımı olan hükümlülerin saldırganlık düzeyleri ve öfke ifade tarzlarının incelenmesi* [*Examination of the aggression levels and anger expression styles of convicts with substance use*, Doctoral dissertation]. Ege Üniversitesi.

Şeker, F. D., & Zengin Taş, E. (2023). Investigation of the impulsivity levels and substance use characteristics of recidivists. *OPUS Journal of Society Research, 20*(Human Behavior and Social Institutions), 917-928. https://doi.org/10.26466/opusjsr.1357519

Şirin, H., & Uzun, M. E. (2021). Sociodemographic and clinical characteristics of adolescent patients treated in ÇEMATEM with the diagnosis of substance use disorders: Bursa sample. *Turkish Journal of Child and Adolescent Mental Health, 28*(2), 151-158. https://doi.org/10.4274/tjcamh.galenos.2021.46330

Tamam, L., Güleç, H., & Karataş, G. (2013). Turkish adaptation of the Barratt Impulsiveness Scale Short Form (BIS-11 SF). *Archives of Neuropsychiatry, 50*(2), 130-134. https://doi.org/10.4274/npa.y6296

Walters, G. D. (2019). Animal cruelty and bullying: Behavioral markers of delinquency risk or causal antecedents of delinquent behavior? *International Journal of Law and Psychiatry, 62*, 77-84. https://doi.org/10.1016/j.ijlp.2018.11.005

Winters, K. C., Botzet, A. M., & Fahnhorst, T. (2011). Advances in adolescent substance abuse treatment. *Current Psychiatry Reports, 13*(5), 416-421. https://doi.org/10.1007/s11920-011-0214-2

World Health Organization. (2023). *Substance use disorders: Harmful use and dependence.* WHO Technical Brief. https://tbksp.who.int/en/node/2653

World Health Organization. (n.d.). *ICD-10 classification of mental and behavioural disorders: Clinical descriptions and diagnostic guidelines.* https://cdn.who.int/media/docs/default-source/substance-use/icd10clinicaldiagnosis.pdf?sfvrsn=96aa4de5_9&ua=1

Yıldırım, A., & Şimşek, H. (2008). *Sosyal bilimlerde nitel araştırma yöntemleri* [*Qualitative research methods in the social sciences*] (6th ed.). Seçkin Yayıncılık.

Zhu, X. (2021). Sample size calculation for Mann-Whitney U test with five methods. *International Journal of Clinical Trials, 8*(3), 184-195. https://doi.org/10.18203/2349-3259.ijct20212840