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RESEARCH

The effect of prison history and probation on addiction profiles in individuals with substance use disorders

Madde kullanım bozukluğu olan bireylerde cezaevi geçmişi ve denetimli serbestliğin bağımlılık profillerine etkisi

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Abstract

Purpose: This study aims to compare the psychological and behavioral profiles of individuals with substance use disorders (SUD) according to their prison history and probation status.

Materials and Methods: This retrospective study included 607 inpatients aged 18–25 diagnosed with SUD and treated at the AMATEM service of a private addiction hospital in Istanbul between 2022 and 2023. The Addiction Profile Index (API), a validated multidimensional assessment tool, was used to measure addiction severity, psychological symptoms, and behavioral traits.

Results: Individuals under probation exhibited significantly higher levels of addiction severity, diagnostic scores, life impact, and craving compared to those not under probation. Their total API scores were also significantly elevated, alongside increased anger and reduced self-confidence. Crack use was significantly more common among those with a prison history, while cocaine use was higher among probationers.

Conclusion: These results suggest that legal status is closely linked to addiction severity and psychological symptom patterns. The findings also indicate a bidirectional and multidimensional relationship between SUD and criminal behavior. Intervention programs should be structured not only according to addiction symptoms but also according to the individual's criminal history and psychosocial needs.

Keywords:. Substance use disorder, prison history, probation, addiction Profile Index, psychological symptoms

Öz

Amaç: Bu çalışmanın amacı, madde kullanım bozukluğu (MKB) olan bireylerin psikolojik ve davranışsal profillerini cezaevi geçmişleri ve denetimli serbestlik durumlarına göre karşılaştırmaktır.

Gereç ve Yöntem: Bu retrospektif çalışmaya, 2022-2023 yılları arasında İstanbul'daki özel bir bağımlılık hastanesinin AMATEM servisinde yatarak tedavi gören ve MKB tanısı konan 18-25 yaş arası 607 hasta dahil edilmiştir. Bağımlılık şiddetini, psikolojik semptomları ve davranışsal özellikleri ölçmek için doğrulanmış çok boyutlu bir değerlendirme aracı olan Bağımlılık Profil İndeksi (API) kullanılmıştır.

Bulgular: Denetimli serbestlik altındaki bireyler, denetimli serbestlik altında olmayanlara kıyasla önemli ölçüde daha yüksek düzeyde bağımlılık şiddeti, tanı puanları, yaşam etkisi ve aşerme sergilemiştir. Toplam API puanları da önemli ölçüde yükselmiş, öfke artmış ve özgüven azalmıştır. Hapishane geçmişi olanlar arasında kokain kullanımı önemli ölçüde daha yaygınken, şartlı tahliye edilenler arasında kokain kullanımı daha yüksekti..

Sonuç: Bu sonuçlar, yasal statünün bağımlılık şiddeti ve psikolojik belirti örüntüleriyle yakından bağlantılı olduğunu göstermektedir. Bulgular, MKB ile suç davranışı arasında çift yönlü ve çok boyutlu bir ilişki olduğunu göstermektedir; müdahale programları sadece bağımlılık semptomlarına göre değil, aynı zamanda bireyin suç geçmişine ve psikososyal ihtiyaçlarına göre de yapılandırılmalıdır.

Anahtar kelimeler: Madde kullanım bozukluğu, cezaevi geçmişi, denetimli serbestlik, bağımlılık profil indeksi, psikolojik belirtiler.

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INTRODUCTION

Substance abuse and addiction are significant public health challenges that have considerable psychosocial, medical, and economic consequences worldwide. The disorders have been demonstrated to exert a significant influence on the prevalence of morbidity and mortality. Moreover, they are closely associated with criminal behavior and societal dysfunction[1]. It is imperative to comprehend the intricate interplay between substance use and legal involvement to formulate efficacious prevention and rehabilitation strategies.

Crime has been conceptualized from various social and academic perspectives throughout history and is generally understood to encompass abnormal behavioral patterns indicative of psychological maladjustment[3]. A considerable body of research has indicated that a significant proportion of individuals who engage in substance use are also involved in criminal or illegal activities[4]. The extant literature demonstrates a consistent correlation between the history of substance use and elevated rates of offending, in comparison with non-users[5]. Ögel et al.[1] found that 65% of individuals with substance use issues had encountered legal problems, with 24% having done so before the onset of substance use. Furthermore, there is evidence to suggest that both substance abuse and criminal behavior are frequently associated with co-occurring mental disorders[6]. The prevalence of psychiatric conditions, including depression and anxiety, has been observed among this group of individuals[7]. Of particular significance is the bidirectional relationship between substance abuse and criminality. Indeed, substance use is prevalent among individuals engaged in criminal activity, which in turn perpetuates a cycle of continued substance use[8]. This cyclical relationship emphasizes the necessity for comprehensive interventions targeting substance-related criminal behavior[9]. To comprehend the cognitive mechanisms that underpin this relationship, it is necessary to undertake a more detailed examination of the relevant mental processes. Furthermore, it has been demonstrated that psychiatric diagnoses, such as antisocial personality disorder, can further exacerbate this complex dual relationship[10].

The Addiction Profile Index (API) is a multidimensional assessment tool that facilitates the evaluation of the psychological, behavioral, and social aspects of substance use[11,12]. It offers valuable insights into individual addiction patterns by systematically assessing factors such as addiction severity, craving intensity, motivation to quit, and concurrent psychological symptoms including anxiety, anger, and depression[13,14]. The utilization of API (Addiction Severity Index) assessments in individuals with criminal histories has been demonstrated to reveal a heightened manifestation of addiction symptoms and an augmented prevalence of psychological dysfunction[15]. These findings emphasize the necessity for customized intervention strategies that are specifically tailored to this demographic. A mounting corpus of literature utilizing the API framework posits that individuals with criminal records exhibit heightened impulsivity, emotional dysregulation, and a propensity toward risk-taking in decision-making processes[16]. Conversely, deficits in emotional regulation, socio-emotional stress, and inadequate coping strategies have been demonstrated to contribute to both substance abuse and criminal conduct[17,18]. As with gambling addiction, it is widely accepted that cognitive distortions and executive dysfunctions are key contributing factors in the development of substance-related criminal behaviors[19,20]. About engagement with treatment and its outcomes, specific addiction profiles have been identified as factors that influence treatment compliance among individuals with a history of criminal activity. The efficacy of personalized intervention approaches in achieving successful treatment outcomes has been demonstrated in several studies[21,22].

The primary objective of this study is to conduct a comparative analysis of the cognitive processes observed in individuals with a history of substance abuse, with and without criminal backgrounds. Within this framework, the relationship between subdimensions such as impulsivity, thrill-seeking, risky behavior, depression, and criminal history is examined using the Addiction Profile Index. The objective is for the findings to inform the understanding of the links between substance addiction and criminal behavior, and to support the development of evidence-based intervention programs. The present study contributes to the extant literature by providing empirical evidence on how legal status intersects with addiction symptomatology and psychological distress among young adults in inpatient treatment. The present study hypothesizes that individuals with a history of

imprisonment and/or probation will exhibit higher levels of addiction severity, impulsivity, excitement seeking, poor anger management, depression, anxiety, and increased use of high-risk substances such as heroin and amphetamines, compared to those without such legal backgrounds.

MATERIALS AND METHODS

The present study employs relational survey design, a subtype of descriptive research used to examine the direction and strength of associations among multiple variables. This approach enables researchers to explore the nature and magnitude of relationships between variables and determine the prevalence and levels of specific characteristics within a target population. The data was collected retrospectively from individuals diagnosed with substance use disorders. A comprehensive analysis was conducted on the subjects' substance use patterns and diagnostic criteria, with a particular focus on their legal status, including any prior incarceration and probation records. This methodological framework offers valuable insights into the impact of legal interventions on addiction profiles.

Sample

The sample size of 607 participants was determined based on an a priori power analysis conducted using G*Power (version 3.1), which indicated that a minimum of 607 participants would be required to detect a medium effect size (Cohen's d = 0.50) with a significance level of $\alpha = 0.05$ and a statistical power of 0.80.

The study population consisted of individuals diagnosed with substance use disorder according to DSM-5 criteria who received inpatient treatment at a private addiction treatment facility (MOODIST Hospital) in Istanbul between 2022 and 2023. The research sample comprised 607 individuals who completed the Addiction Profile Index (API). Participants were 18 to 25 years old, falling within the young adult category. No selection bias was introduced regarding gender, socioeconomic status, or the type of substance used; participation was entirely voluntary. This inclusive approach ensured that the sample broadly represented the characteristics of the clinical population. The diagram below illustrates the participant inclusion process, resulting in a final sample of 607 individuals diagnosed with substance use disorder:

This retrospective descriptive study examined the records of 947 individuals diagnosed with a substance use disorder who presented at Moodist AMATEM in Istanbul between May 2021 and March 2024. During the initial screening phase, 85 individuals were excluded: 76 did not meet the inclusion criteria, 21 declined to participate, and six were excluded for other reasons, such as incomplete or inconsistent documentation. Following these exclusions, 759 participants were deemed eligible for cohort inclusion. Of these, 751 individuals received the allocated intervention. However, a subset of cases (n = 140) was identified as having missed or incomplete values during the data integration phase. Ultimately, the final descriptive analysis included 607 participants who had confirmed diagnosis, actively participated in treatment, and had complete sociodemographic, clinical, and legal records.

Inclusion criteria were being 18 years of age or older, having a diagnosis of substance use disorder (according to DSM-5 criteria), currently receiving treatment at Moodist Hospital and voluntarily participating in the study. Exclusion criteria were exhibiting symptoms of acute psychosis or severe cognitive impairment, lacking sufficient Turkish literacy and being discharged from the institution during treatment.

Participants in this study were selected based on specific eligibility criteria to ensure the integrity and relevance of the dataset. Individuals were included if they met the following conditions: they had received a formal diagnosis of Substance Use Disorder (SUD) according to the DSM-5 diagnostic criteria, were 18 years or older, and had accessible records regarding their legal status, such as a history of incarceration or probation status. Additionally, participants were required to have applied for treatment or evaluation within the defined data collection period. Conversely, individuals were excluded from the analysis if their records contained missing or inconsistent data (n = 85), or if they were diagnosed with mental or behavioral disorders unrelated to substance use (n = 76). These exclusion criteria ensured a focused and analytically consistent sample of 607 participants, drawn from an initial population of 768 individuals.

Procedure

The study has been approved by the Ethics Committee of Istanbul Gelişim University, as per its decision dated March 1, 2023, numbered 2023/134. Informed consent was obtained from all participants

in the study through an informed consent form. The study was conducted at the psychiatry department and related units of the Private Moodist Hospital in Istanbul. The hospital complies with high standards of confidentiality and file security in terms of electronic patient record systems and psychiatric evaluation files. Data collection was carried out by researchers trained in mental health and hospital staff. Standard procedures were followed during the application of measurement tools, and data accuracy was cross-checked with hospital records.

The data used in this study were obtained from the digital records of the institution, specifically from archived API response forms. The API was administered during the participants' inpatient treatment process in the presence of mental health professionals (psychologists), and each administration lasted approximately 30 to 40 minutes. As the data were collected retrospectively, no additional intervention was performed, and only existing scale scores were included in the statistical analyses. All procedures adhered to ethical guidelines and confidentiality standards.

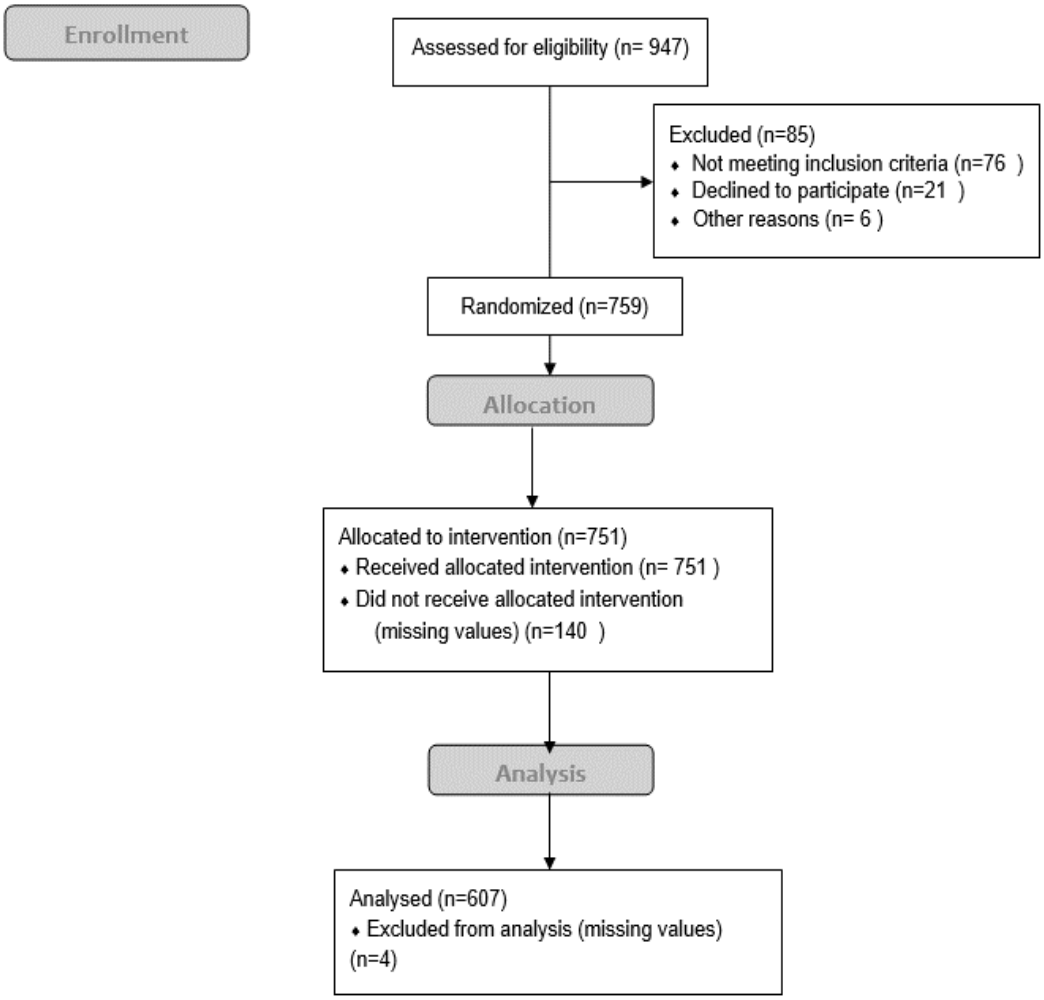

Figure 1. Cohort flow diagram.

Measures

Addiction Profile Index (API) Scale

In this study, the Addiction Profile Index (API) developed by Ögel and colleagues (2012) was used to assess the level of addiction. The API consists of five subscales: substance use frequency, addiction severity, motivation, psychosocial problems, and support system, and comprises 33 items scored on a scale of 0 to 3. Higher scores indicate higher addiction severity and accompanying problems. In the Turkish sample, the Cronbach's alpha coefficient of the scale was found to be 0.89. The Addiction Profile Index (API) used in this study is a psychometric measure developed by Ögel and colleagues[1] and adapted for the Turkish sample. The scale assesses the level of substance dependence and accompanying psychosocial problems in individuals with substance dependence. It consists of 33 items in total. The subscales include substance use frequency and severity, psychological symptoms (anxiety, depression, anger), lack of social support, impulsivity and thrill-seeking, motivational state, and readiness for treatment. Each item is scored on a scale from 0 (none) to 3 (very much). Higher scores indicate higher levels of addiction or problem severity. The Cronbach's alpha coefficient was reported as 0.89. Its validity was confirmed by factor analysis, which identified a five-factor structure.

The research data were collected using the Addiction Profile Index (API), a scale developed by Ögel, et al.[23] to assess various dimensions of addiction and measure the severity of substance dependence. Psychometric evaluation of the scale indicated a high level of reliability: the overall Cronbach's alpha coefficient was 0.89, while the subscale coefficients ranged from 0.63 to 0.86. Item-total correlation coefficients varied between 0.42 and 0.89, and correlations between the subscales and the total score ranged from 0.47 to 0.86. Furthermore, split-half reliability analysis yielded a Spearman-Brown coefficient of 0.83 and a Guttman coefficient of 0.82.

Statsitical analysis

The data obtained in this study were analyzed using SPSS (Statistical Package for the Social Sciences) 26.0 statistical software. As part of the statistical analysis process, the Kolmogorov-Smirnov and Shapiro-Wilk normality tests were initially employed to assess the normality of the data distribution. In the context of the present study, parametric tests were selected for continuous variables that exhibited a normal distribution, while non-parametric tests were chosen for data that did not follow a normal distribution. The demographic characteristics of the participants, including gender, age, educational status, marital status, and economic status, along with their clinical data, such as the type of substance use, history of psychological treatment, probation, and prison history, were summarized using descriptive statistics. These statistics included frequency (n), percentage (%), mean ($\bar{X}$), and standard deviation (SD). The tests and variables employed for intergroup comparisons were structured as follows. To examine the differences between two independent groups, the Addiction Profile Index (API) subscale scores of individuals with and without a history of incarceration were compared using an independent samples t-test. The same analysis was conducted between groups based on probation status. To assess the relationships between categorical variables, the relationship between prison history and nominal-level variables such as substance type, education level, and marital status was analyzed using the chi-square (χ^2) test. Pearson correlation analysis was applied to evaluate the linear relationships between continuous variables (e.g. age) and BAPI subscale scores. Logistic regression analysis was employed to determine the predictability of participants' prison history about demographic variables and psychological symptom levels. The same analytical approach was adopted in the examination of the status of probation. The statistical significance level was set at $p<.05$ for all tests. The findings were presented in tabular form, and significant differences were discussed in detail in the text.

The subsequent analysis involved the computation of descriptive statistics, including frequencies, percentages, means, and standard deviations. The normality of data distribution was assessed using the Kolmogorov-Smirnov test. For variables that did not follow a normal distribution, the Mann-Whitney U test was applied; for normally distributed variables, the independent samples t-test was used. The associations between categorical variables, including gender, history of incarceration, probation status, and substance use behaviors, were evaluated using the Pearson χ^2 test. For this study, a significance level of .05 was adopted for all statistical analyses.

RESULTS

Table 1. Results of sociodemographic descriptive analysis of participants

Variable	Category	n	%
Gender	Female	70	11.53
	Male	537	88.47
	Total	607	100.00
Education Level	Literate	3	0.49
	Primary School	47	7.74
	Middle School	136	22.41
	High School	231	38.06
	University	190	31.30
	Total	607	100.00
Marital Status	Married	218	35.91
	Single	343	56.51
	Separated	2	0.33
	Divorced	38	6.26
	Widow	5	0.82
	Other	1	0.16
	Total	607	100.00
Economic Situation	Very Good	96	15.82
	Good	269	44.32
	Average	196	32.29
	Bad	31	5.11
	Very Bad	15	2.47
	Total	607	100.00
Physical Health Status	Very Good	86	14.17
	Good	291	47.94
	Average	140	23.06
	Bad	80	13.18
	Very Bad	10	1.65
	Total	607	100.00
Receiving Psychological Treatment	No	262	43.16
	Yes	345	56.84
	Total	607	100.00
Benefiting from Probation	No	262	43.16
	Yes	345	56.84
	Total	607	100.00
Prison History Status	None	477	78.58
	Related to Substance Use	51	8.40
	Not Related to Substance Use	68	11.20
	Total	607	100.00

Of the total 607 subjects who participated in the study, 88.47% were male (n = 537) and 11.53% were female (n = 70), thus demonstrating a predominantly male gender distribution within the sample. When the educational level is analyzed, the largest group is constituted of high school graduates (38.06%) and university graduates (31.30%), while the lowest rate belongs to the literate participants (0.49%). The data about marital status indicates that 56.51% of the participants are unmarried, 35.91% are married, 6.26% are divorced, 0.33% are separated, 0.82% are widowed, and 0.16% are in the "other" category. With respect to the economic situation, 44.32% of the participants evaluated their circumstances as

"good", 32.29% as "moderate", and 15.82% as "very good". The proportion of respondents who characterized their situation as "bad" or "very bad" was 5.11% and 2.47%, respectively. With respect to their physical health status, approximately half of the participants (47.94%) assessed themselves as "good". 14.17% of respondents rated their experience as "very good", 23.06% as "moderate", 13.18% as "bad" and 1.65% as "very bad". The distribution of psychological treatment and probation was found to be uniform, with 56.84% of subjects reporting a positive impact from these interventions. Regarding the history of imprisonment, 78.58% of respondents indicated that they had no prior experience of imprisonment. Of the individuals with a history of imprisonment, 8.40% were imprisoned for reasons related to substance use, 11.20% for reasons unrelated to substance use, and 1.81% for both reasons. Regarding the issue of self-harm, 65.90% of the participants stated that they had never harmed themselves, 19.28% stated that they had harmed themselves 1-2 times, and 14.82% stated that they had harmed themselves more than three times.

Table 2. Descriptive analysis results for Addiction Profile Index Scale Scores

Scales	n	Minimum	Maximum	$\bar{X}$	SS
Addiction Severity	607	.08	6.83	1.95	1.56
Diagnosis	607	.00	4.00	2.58	1.06
Life	607	.00	4.00	2.45	0.86
Willingness to Use	607	.00	4.00	2.35	1.26
Motivation	607	.00	4.00	3.62	0.79
BAPI	607	.16	4.32	2.59	0.79
Anger	607	.00	2.00	0.88	0.63
Trust	607	.00	2.00	0.82	0.47
Excitement	607	.00	2.00	0.79	0.66
Depression	607	.00	2.00	0.90	0.55
Anxiety	607	.00	2.00	0.77	0.58
Impulsivity	607	.00	2.00	1.06	0.59

Tablo 3. Descriptive findings related to normality test results of Addiction Profile Index Used in the Study

Variables	n	$\bar{X}$	SS	Kolmogorov-Smirnov Z	p
Addiction Severity	607	1.947	1.561	3.769	0.000
Diagnosis	607	2.584	1.061	2.244	0.000
Life	607	2.446	0.860	1.949	0.001
Willingness to Use	607	2.345	1.257	2.726	0.000
Motivation	607	3.618	0.788	9.762	0.000
BAPI	607	2.589	0.785	0.762	0.607
Anger	607	0.875	0.626	3.194	0.000
Trust	607	0.824	0.475	3.150	0.000
Excitement	607	0.786	0.658	3.728	0.000
Depression	607	0.897	0.546	2.933	0.000
Anxiety	607	0.770	0.579	3.964	0.000
Impulsivity	607	1.063	0.586	3.273	0.000

The findings, derived from a statistical analysis of the responses of 607 individuals who participated in the study, revealed significant insights related to substance use disorder. The mean severity of addiction was found to be 1.95 (SD = 1.56), indicating a moderate level of severity. The values of 2.58, 2.45 and 2.35 were obtained in the diagnosis, Life and Willingness to Use subscales, respectively. The findings suggest that the impact of substance use on individuals' lives and their inclination to use is moderate. The elevated mean level of 3.62 in the motivation sub-dimension indicates that individuals

possess a favorable disposition towards treatment or change. The Addiction Profile Index (API) score, which is indicative of the general addiction level, is 2.59. This value indicates that individuals are at a medium risk level in terms of their general addiction profile. Regarding psychological symptom variables, the mean value that was found to be highest was that of impulsivity ($\bar{X}$ = 1.06). This was followed by Depression ($\bar{X}$ = 0.90) and Anger ($\bar{X}$ = 0.88), respectively. The findings of this study indicate that individuals diagnosed with substance use disorder frequently exhibit deficiencies in impulse control and emotional regulation. In addition to other psychological variables, sub-dimensions such as anxiety ($\bar{X}$ = 0.77), excitement ($\bar{X}$ = 0.79) and confidence ($\bar{X}$ = 0.82) are also at low-to-moderate levels.

Tablo 4. Descriptive statistics of variables according to probation benefiting status

Variable	Probation Status	n	Mean Rank	Sum of Ranks	Mean (X)
Addiction Severity	No	461	294.79	135897	1.87
	Yes	146	333.09	48631	2.18
Diagnosis	No	461	279.93	129048	2.44
	Yes	146	380.00	55480.5	3.04
Life	No	461	274.04	126334	2.30
	Yes	146	398.59	58194	2.90
Willingness to Use	No	461	285.40	131569	2.22
	Yes	146	362.74	52959.5	2.75
Motivation	No	461	294.51	135768	3.58
	Yes	146	333.98	48760.5	3.73
BAPI	No	461	279.55	128873	2.48
	Yes	146	381.20	55655.5	2.92
Anger	No	461	288.83	133149	0.82
	Yes	146	351.91	51379	1.05
Trust (Safe)	No	461	295.52	136235	0.80
	Yes	146	330.77	48293	0.90
Excitement	No	461	296.31	136600	0.76
	Yes	146	328.28	47928.5	0.88
Depression	No	461	297.37	137088	0.88
	Yes	146	324.93	47440	0.96
Anxiety	No	461	297.46	137127	0.75
	Yes	146	324.66	47401	0.83
Impulsivity	No	461	303.29	139815	1.06
	Yes	146	306.26	44713.5	1.07

The Kolmogorov-Smirnov test indicates that the assumption of normality is not statistically satisfied, since $p < .05$ in all variables except the Addiction Profile Index (IPI). The findings indicate that these variables do not conform to a normal distribution. Conversely, the BAPI variable was found to have a p-value greater than 0.05 ($p = 0.607$), indicating its conformity to a normal distribution. It has been demonstrated that individuals who derived benefit from probation exhibited elevated means in numerous fundamental variables, including substance use severity ($\bar{X}$ = 2.18), diagnosis score ($\bar{X}$ = 3.04), life impact ($\bar{X}$ = 2.90), desire to use ($\bar{X}$ = 2.75), and BAPI total score ($\bar{X}$ = 2.92), in comparison to those who did not benefit from probation. This finding suggests that individuals under probation may exhibit a more pronounced addiction profile. A similar trend is observed in terms of psychological variables. A higher prevalence of emotional symptoms, including anger ($\bar{X}$ = 1.05), depression ($\bar{X}$ = 0.96), and anxiety ($\bar{X}$ = 0.83), was observed in the probation beneficiary group. These discrepancies indicate that probation programs necessitate more intensive interventions, encompassing psychological support and the combatting of addiction in treatment and rehabilitation processes.

Table 5. Comparison of Addiction Profile Index (API) Scale scores according to probation benefit status

Variables	Mann-Whitney U / t	p
Addiction Severity	29406	.021
Diagnosis	22556.5	.000
Life	19843	.000
Willingness to Use	25077.5	.000
Motivation	29276.5	.003
BAPI	-6.037	.000
Anger	26658	.000
Trust	29744	.033
Excitement	30108.5	.051
Depression	30597	.095
Anxiety	30636	.097

In order to examine the differences between individuals who benefited from supervised release and those who did not, the Mann-Whitney U test and independent samples t-test were employed, based on the distributional characteristics of the variables. The objective of these tests was to ascertain whether the mean scores of two independent groups differed significantly. The results of the study are presented in Table 5.

Participants who benefited from probation demonstrated significantly higher scores on several variables. Specifically, significant group differences were observed in Addiction Severity ($p = .021$), Diagnosis ($p < .001$), Life Impact ($p < .001$), Willingness to Use ($p < .001$), and Motivation ($p = .003$). The findings of this study indicate that individuals under probation experience greater addiction severity and psychosocial burden. The independent samples t-test for the BAPI total score also yielded a significant result, $t = –6.037$, $p < .001$, suggesting a meaningful difference in addiction profile severity between the groups. Regarding the psychological symptoms, significant differences were identified in anger ($p < .001$) and trust/confidence ($p = .033$). While Excitement approached significance ($p = .051$), no significant group differences were observed for Depression ($p = .095$), Anxiety ($p = .097$), or Impulsivity ($p = .857$). The findings suggest that individuals benefiting from probation may require more intensive interventions not only at the legal and behavioral levels, but also in terms of psychological support. It is important to note that group differences in addiction diagnosis, life impact, and willingness to use substances underscore the importance of delivering personalized, integrated psychosocial interventions for this population.

Tablo 6. Comparison of crack use according to prison history and benefiting from probation

Crack Use	**Not on Probation (n = 461)**	**On Probation (n = 146)**	**Total (n = 607)**	
No	372 (79.5%)	96 (20.5%)	468 (100%)	$\chi^2 =$ 14.019
	80.7%	65.8%	77.1%	***p* = .000**
Yes	89 (64.0%)	50 (36.0%)	139 (100%)	
	19.3%	34.2%	22.9%	
Total	461 (75.9%)	146 (24.1%)	607 (100%)	
Crack Use	**Not Benefiting (n = 477)**	**Benefiting (n = 130)**	**Total (n = 607)**	
No	387 (82.7%)	81 (17.3%)	468 (100%)	$\chi^2 =$ 20.504
	81.1%	62.3%	77.1%	$p = .000$
Yes	90 (64.7%)	49 (35.3%)	139 (100%)	
	18.9%	37.7%	22.9%	
Total	477 (78.6%)	130 (21.4%)	607 (100%)	

The study examined whether participants' crack use differed based on their prison history and whether they were benefiting from probation. Pearson's chi-square (χ^2) test was utilized to evaluate the association between categorical variables. The prevalence of crack use among individuals with a prison history (37.7%) was significantly higher compared to those without a prison history (18.9%). This finding suggests that crack use behavior is more prevalent among individuals with a criminal background, as indicated by the result of the chi-squared test = 20.504, $p < .001$.

Table 7. Comparison of cocaine use according to prison history and benefit from probation

Cocaine Use	**No Prison History (n = 477)**	**Prison History (n = 130)**	**Total (n = 607)**	
No	309 (64.8%)	84 (64.6%)	393 (64.7%)	$\chi^2 = 0.001$
Yes	168 (35.2%)	46 (35.4%)	214 (35.3%)	$p = .972$
Total	477 (78.6%)	130 (21.4%)	607 (100%)	
Cocaine Use	**No Probation (n = 461)**	**On Probation (n = 146)**	**Total (n = 607)**	
No	309 (67.0%)	84 (57.5%)	393 (64.7%)	$\chi^2 = 4.379$
Yes	152 (33.0%)	62 (42.5%)	214 (35.3%)	$p = .036$
Total	461 (75.9%)	146 (24.1%)	607 (100%)	

Within the scope of the study, the cocaine use status of the individuals was compared according to two criteria: having a prison history and benefiting from probation. The Pearson Chi-square (χ^2) test was utilized to ascertain the statistical significance of the relationship between the two categorical variables. The study revealed no statistically significant differences between individuals with a history of imprisonment and those without in terms of cocaine use. The prevalence of cocaine use was found to be approximately equal in both groups, with an estimated frequency of around 35% across both groups. This finding suggests that cocaine use behavior is independent of prison history (χ^2 (1) = 0.001, $p = .972$). The analysis revealed a marked increase in cocaine use among individuals who were beneficiaries of probation, with a proportion of 42.5%. In contrast, the rate among individuals not under probation was 33.0%. The observed difference is statistically significant at the $p < .05$ level. This finding indicates that individuals involved in the probation process may exhibit elevated risk substance use behavior (χ^2 (1) = 4.379, $p = .036$).

Table 8. Comparison of Alcohol Use According to Prison History and Benefit from Probation

Alcohol Use	**No Prison History (n = 477)**	**Prison History (n = 130)**	**Total (n = 607)**	
No	85 (17.8%)	49 (37.7%)	134 (22.1%)	$\chi^2 = 23.453$
Yes	392 (82.2%)	81 (62.3%)	473 (77.9%)	$p < .001$
Total	477 (78.6%)	130 (21.4%)	607 (100%)	
Alcohol Use	**No Probation (n = 461)**	**On Probation (n = 146)**	**Total (n = 607)**	
No	92 (20.0%)	42 (28.8%)	134 (22.1%)	$\chi^2 = 5.004$
Yes	369 (80.0%)	104 (71.2%)	473 (77.9%)	$p = .025$
Total	461 (75.9%)	146 (24.1%)	607 (100%)	

Within the scope of the study, the alcohol use status of the individuals was compared according to both their prison history and their probation status. The Pearson Chi-square (χ^2) test was utilized to assess the relationship between two categorical variables. The rate of non-use of alcohol by individuals with a prison history (37.7%) was significantly higher than that of individuals without a prison history (17.8%). Conversely, alcohol use was more prevalent among individuals without a history of imprisonment (82.2%). This discrepancy is statistically significant ($p < .001$). This result indicates that alcohol use is less prevalent among individuals with a history of incarceration (χ^2 (1) = 23.453, $p < .001$). The rate of

abstinence from alcohol is higher in individuals benefiting from probation (28.8%) compared to individuals not under probation (20.0%). The observed discrepancy is deemed to be statistically significant ($p = .025$). This result suggests that the rate of alcohol use may be relatively lower among individuals on probation (χ^2 (1) = 5.004, $p = .025$).

DISCUSSION

This study examined individuals diagnosed with substance use disorders about their criminal history, particularly imprisonment and probation, and psychological variables including anger control difficulties, lack of safe behaviors, sensation-seeking, risk of depression and anxiety, and impulsivity. These factors were analyzed using the Addiction Profile Index (API), thereby allowing a comparative evaluation of the addiction profiles, psychological symptoms, and behavioral patterns in connection with the participants' legal backgrounds. A total of 607 subjects participated in the study, of whom 88.47% were male and 11.53% were female, indicating a predominantly male sample. The low proportion of female participants may be explained by various factors, such as traditional gender roles, socioeconomic constraints, the social stigma associated with substance use, and structural barriers limiting women's access to treatment services. As is often emphasized in the relevant literature, women suffering from substance use disorders are significantly less likely to seek treatment than men. For instance, in a retrospective study involving 153 patients receiving addiction treatment, 75.2% of subjects were male and only 24.8% were female [24, 25]. Furthermore, multiple studies have indicated that although the onset of substance use disorder may progress more rapidly in women, the proportion of female treatment-seekers remains substantially lower [26, 27, 28]. Documented trends are consistent in Turkey, where rates of treatment seeking among women are found to be particularly low [28]. These findings emphasize the necessity of addressing gender-based disparities in addiction services and the implementation of inclusive health policies that enhance women's access to treatment.

With respect to educational attainment, 38.4% of the participants had completed high school, while 31.3% were university graduates. This finding suggests that the majority of the sample had attained at least secondary-level education. However, prior studies have indicated that individuals with substance use disorders generally possess lower educational levels [29, 30]. For instance, a 2022 analysis by Narcologist revealed that a mere 26.6% of the participants had attained high school or higher levels of education. A similar phenomenon was observed in data from the Turkish Statistical Institute (TÜİK), which indicated that 61.6% of the population possessed qualifications below the high school level. With respect to marital status, 56.51% of the participants reported being single. This finding is consistent with previous research that identified unmarried individuals as constituting a high-risk group for substance use. For instance, a study comparing intravenous heroin and synthetic cannabinoid users found that 80% of both groups were single; another reported that 85.7% of participants were unmarried. With respect to physical health, 47.94% of the participants assigned a rating of "good" to their health. However, extant literature highlights the detrimental effects of substance use on physical health [34]. The observed discrepancy may be attributed to several factors, including the duration and nature of substance use, the frequency of use, subjective health perceptions, or a lack of medical awareness due to infrequent health check-ups. The analysis also revealed that 56.84% of the participants had received prior psychiatric or psychological treatment. This finding is likely indicative of the chronic, relapsing nature of addiction. As has been previously demonstrated, a significant proportion of individuals undergoing treatment utilize outpatient services, with a subset of these receiving inpatient care (35, 36). The prevalence of probation was reported by 24.05% of the participants, a rate that aligns with the findings of previous studies reporting a range between 28% and 37.3%. Furthermore, 21.42% of participants had a history of imprisonment, with 8.40% having been incarcerated for substance-related offences and 11.20% for other criminal activities. Ögel et al.[1] found a higher rate of criminal history in their study, possibly due to differences in sample size and regional scope. Furthermore, 65.90% of the participants reported no history of self-harm behavior, a rate compatible with literature indicating a link between substance use and self-harming tendencies [39, 40]. The extant literature indicates that the consumption of alcohol and other substances can precipitate self-injurious behaviors in particularly vulnerable individuals.

Alcohol emerged as the most prevalent substance, a finding that aligns with existing research [41]. The prevalence of heroin use was reported by 35.26% of the participants, frequently daily. The elevated rate of

heroin consumption, which is associated with its brief half-life, is indicative of its significant addictive potential and pronounced withdrawal symptoms [42]. Conversely, the utilization of inhalants was found to be infrequent, with a staggering 98.52% of subjects admitting to never having experimented with them. Inhalant use is more prevalent among socioeconomically disadvantaged populations [43]. Cannabis, the third most prevalent substance at 15.49%, remains among the most widespread psychoactive substances globally [44]. The study found that individuals benefiting from probation exhibited significantly higher levels of anger control problems, depression and anxiety, substance craving, and motivation to quit than those not under probation. Conversely, individuals with a history of incarceration exhibited heightened addiction severity, craving, and behavioral dysfunctions (e.g., poor anger management, unsafe behavior). However, the study revealed that the participants exhibited marginally diminished levels of depression, anxiety, and impulsivity. This observation may be ascribed to factors such as the study's sample size or the inherent variability among individuals. A notable association was observed between crack cocaine use and both imprisonment and probation status [51]. The extant literature indicates a correlation between crack use and criminal activities, including smuggling and violence [52]. While the analysis revealed no significant disparities in cocaine use based on imprisonment history, the study noted a higher prevalence among individuals under probation supervision. These results underscore the necessity for future research focusing on the intersection of legal processes and substance use disorders. Psychotherapeutic interventions must adopt a holistic approach, addressing not only addiction symptoms but also psychological distress, criminal history, and social functioning.

In conclusion, the findings reveal complex, multidimensional associations between substance use disorders and demographic, psychological, and legal variables. While some results align with existing literature, others diverge, thereby opening new avenues for investigation. It is evident that legal experiences, such as incarceration or probation, have a discernible impact on the severity of addiction and the subsequent mental health outcomes. Consequently, treatment strategies ought to extend beyond the mere management of symptoms, incorporating the individual's mental state, their social environment, and the legal context. The data suggest that individuals with legal involvement often present with heightened emotional disturbances, particularly anger, depression, and impulsivity. This highlights the importance of psychoeducation, individual therapy, and group interventions. The integration of treatment-oriented rehabilitation into the criminal justice system is imperative. Individuals on probation should be subject to regular mental health assessments and continuous psychological support. In light of the pervasive gender disparities and the conspicuous underrepresentation of women in treatment settings, the formulation of inclusive and non-stigmatizing treatment policies tailored to women, particularly those that ensure privacy, is imperative. The correlation between the consumption of high-risk substances (e.g., crack, heroin, cocaine) and individual legal backgrounds underscores the necessity for early intervention and the implementation of preventative community-based programs. Furthermore, the development of digital and systematic monitoring systems for individuals in probation has the potential to enhance treatment effectiveness. A salient limitation pertains to the relatively modest sample size of specific subgroups (e.g., female participants, users of certain substances), which curtails the generalizability of certain findings. The present study examined the relationship between prison and probation history and psychological variables in individuals with substance use disorders. The majority of subjects were male, and the low rate of female subjects seeking treatment was attributed to the social stigma associated with substance use. The elevated educational and income levels of the subjects in the sample may be attributable to the study being conducted in a specialized treatment center. The study found that individuals under probation exhibited higher levels of anger control problems, depression and anxiety. In contrast, individuals with a history of imprisonment demonstrated a heightened propensity for addiction severity, unsafe behaviors and anger. However, depression, anxiety and impulsivity were found to be lower in individuals with a history of imprisonment. Furthermore, the pervasive utilization of heroin and amphetamines among both prison and probation groups indicates a potential correlation between criminal behavior and specific substances. However, regression analyses did not provide a model that significantly predicted prison or probation history. The findings of the present study suggest that individuals with substance use disorders should be assessed not only biologically

but also psychologically and in terms of their criminal history. However, the study is limited to individuals receiving treatment at a private hospital in Istanbul, and the generalizability of the findings to different socioeconomic groups or public hospitals is limited. The data were collected retrospectively from hospital records, and the Addiction Profile Index (API) was obtained from forms previously completed by psychologists. This situation gives rise to several potential limitations, including measurement error and social desirability bias. Furthermore, the evaluation was confined to prison and probation status, with more detailed legal and psychological variables excluded. The fact that all participants were undergoing treatment meant that individuals who did not seek treatment or did not receive an official diagnosis were not included in the study.

Future research should entail the utilization of larger, multi-center samples, the development of mixed models that combine qualitative and quantitative methods, and the employment of measurement tools that mitigate social desirability bias. Furthermore, it is recommended that research approaches adopt an inclusive framework, encompassing individuals who do not have a formal diagnosis, as well as those who receive treatment. Consequently, the development of multivariable models that examine the interaction between legal history and psychological risk factors, the utilization of diverse data collection techniques, and the employment of tools that minimize social desirability bias will serve to strengthen the scientific knowledge base in this field and provide more robust evidence regarding the relationship between criminal behavior and substance use disorders.

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