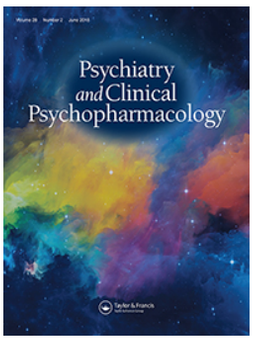

Psychiatry and Clinical Psychopharmacology

ISSN: 2475-0573 (Print) 2475-0581 (Online) Journal homepage: https://www.tandfonline.com/loi/tbcp21

Treatment outcomes of drug users in probation period: three months follow-up

Rabia Bilici, Kültegin Ögel, Gönül Güvenç Bahadır, Alp Maçkan, Nazlı Orhan & Olcay Tuna

To cite this article: Rabia Bilici, Kültegin Ögel, Gönül Güvenç Bahadır, Alp Maçkan, Nazlı Orhan & Olcay Tuna (2018) Treatment outcomes of drug users in probation period: three months follow-up, Psychiatry and Clinical Psychopharmacology, 28:2, 149-155, DOI: 10.1080/24750573.2017.1391156

To link to this article: https://doi.org/10.1080/24750573.2017.1391156

Published online: 28 Oct 2017.

PSYCHIATRY AND CLINICAL PSYCHOPHARMACOLOGY, 2018
VOL. 28, NO. 2, 149–155
https://doi.org/10.1080/24750573.2017.1391156

Taylor & Francis
Taylor & Francis Group

Treatment outcomes of drug users in probation period: three months follow-up

Rabia Bilici[a], Kültegin Ögel[b], Gönül Güvenç Bahadır[a], Alp Maçkan[a], Nazlı Orhan[a] and Olcay Tuna[c]

[a]Erenköy Ruh ve Sinir Hastalıkları Hastanesi, Istanbul, Turkey; [b]Moodist Psikiyatri ve Nöroloji Hastanesi ve Yeniden Derneği, Istanbul, Turkey; [c]Moodist Psikiyatri ve Nöroloji Hastanesi, Istanbul, Turkey

ABSTRACT

OBJECTIVES: This research aims to identify the factors that affect treatment compliance of substance users who have been sent for treatment under a three-month follow-up period, within the scope of probation.

METHODS: One hundred and twenty-four substance users, who were sent to Erenköy Mental Health and Neurological Diseases Hospital AMATEM Clinic within the scope of probation, were taken under research, consecutively. Initially, the Addiction Index Profile Clinic Form (BAPI-K) was applied to substance users, who were then taken to cigarette, alcohol, and drug dependence treatment programme (SAMBA**)**. Urine tests were made every 15 days, six times in total. People in whose urine tests substance was found once in three-month period have been considered incompatible with the treatment.

RESULTS: About 33.1% of the sample was considered incompatible with the treatment. Preliminary craving and novelty-seeking behaviour subscale have been found to be higher in those who were considered as incompatible with treatment. No positive urine test results on substance users who completed SAMBA programme were found. In logistic regression analysis, novelty-seeking behaviour, craving, and impulsive behaviours were found to be predictors of incompatibility with treatment as three separate and independent variables. The risk of incompatibility with treatment has been found to be 41 times more (odds ratio = 41.00, CI = 5.91–284.14) for those with one positive result in the last three urine samples.

CONCLUSIONS: It has been thought that substance users who have high craving, novelty-seeking behaviour, and impulsive behaviour in the scope of probation should be monitored more intensively, that structured treatment programme enhances compliance, and that finding substance at the last urine samples can be considered a sign of incompatibility with treatment.

ARTICLE HISTORY
Received 23 July 2017
Accepted 9 October 2017

KEYWORDS
Substance addiction; forensic psychiatry; follow-up studies

Objective

The number of substance users on probation in Turkey is very high. As of May 2015, 107,920 people are known to be treated within probation [1]. It is also known that there are large numbers of people on probation in the world [2]. In the U.S., for example, it is stated that 4.2 million people are on probation, 60–70% of whom have substance use disorder [3,4].

Compulsory treatment on probation is known to be possibly effective, despite many drawbacks [5,6]. The compulsory treatment process also reduces the legal problems of substance users. It has been asserted that the risk of being caught for repeated substance use was reduced 18.7% for outpatients on probation [7].

While there are several studies on substance users on probation [5–8,9], the number of studies on whether the substance users benefit from the probation or not is rather low [10]. It is also stated that the number of studies on the effects of probation on substance use is small [11].

That all substance users quit substance use in the scope of probation is not a realistic goal, because addiction is a disease which proceeds with recoveries and relapses. The rate of leaving treatment by patients in the scope of probation is also very high [12,13]. There exist studies which assert that structured, well-applied treatment programmes with continuity have positive effects on the substance use of substance users on probation [14–16].

Substance users taken under probation by court rulings in Turkey are being directed to healthcare institutions, wherefrom the cases that cannot be treated or are considered addicted are referred to addiction centres to be treated in those. Treatment programmes vary by institutions. Urine tests are also usually performed during the treatment process to determine the substance usage of persons. Determining which substance users continue substance use in the scope of probation will help develop treatment policies on the subject. This may also make important contributions to nationwide healthcare planning. The aim

CONTACT Olcay Tuna zehraolcaytuna@gmail.com Moodist Psikiyatri ve Nöroloji Hastanesi, Yeniden Derneği Halaskargazi Cad. Küçükbahçe Sok. Yuvam Apt. No: 35/1 Şişli, Istanbul, Turkey

of the present study is to determine the factors which affect compliance with treatment in the probation process, through a three-month follow-up of substance users sent for treatment under probation.

Method

Sample

One hundred and twenty-four substance users who were sent to the Erenköy Mental and Neurological Diseases Hospital AMATEM Clinic between April 8 2013 and July 8 2013 under probation and whose continued substance use was detected by the psychiatric evaluations and urine tests were consecutively taken into the study.

Tools

Sociodemographic form

The questions in this questionnaire which evaluate sociodemographic information and medical history were taken from a valid and reliable questionnaire which has been used before in a study on addiction [17]. Age, sex, marital status, level of education, employment status, intravenous substance usage, number of previous psychological treatments, number of previous in and outpatient treatment for addiction problems and number of cessation attempts are included in the questionnaire. In addition, a five-point Likert question is included to determine the person's financial status. The questionnaire is applied by researchers in face-to-face interviews with participants.

Addiction Profile Index clinical form

Addiction Profile Index (API) is a 37-item questionnaire developed by Ögel et al., to evaluate different dimensions and severity of addiction [18]. Answers consist of five-point Likert questions with values from 0 to 4. The questionnaire consists of five subscales, namely substance use specifics, criteria for addiction diagnosis, effect of substance use on person's life, strong craving for substance use and motivation for cessation of substance use. Subscale scores are evaluated separately, while the total score is obtained by weighting the subscales. Cronbach alpha coefficients were found to be 0.89 for total score and between 0.63 and 0.86 for subscales. The Addiction Profile Index Clinical Form (BAPI-K), developed to evaluate mental problems in clinic practice, consists of 21 added items in conjunction with the present items [19,20].

In this section, factors that lead to substance use or cause continuance such as anger management problems, lack of assertiveness, novelty-seeking behaviour, impulsive behaviour, depression, and anxiety are questioned. The Cronbach alpha coefficient of this section was found to be 0.80, while those of its subscales were found between 0.66 and 0.75. With the items of the section that evaluates addiction directly included, the Cronbach alpha coefficient for the total score is found to be 0.81. Four factors are obtained from exploratory factor analysis, which represent 53% of total variance. The first factor includes items on depression and anxiety. While the second factor includes items on anger management problems and impulsivity, the third factor includes items on lack of assertiveness, and the fourth factor includes items on novelty-seeking behaviour. On evaluation with different tests, the subscales are detected to exhibit good correlation.

Process

Substance users are followed during the three months after admittance to treatment under probation. The tobacco, alcohol, and dependence treatment programme (SAMBA) has been applied to each substance user as part of hospital routine. The original version of the SAMBA programme consists of 20 sessions. This programme, developed as a cognitive behavioural therapy and motivational interviewing based programme, is a group work conducted with 12–16 people. SAMBA was modified for probation and transformed into a six-session group work applied once every 15 days. Sessions on substances and their effects, the concept and process of addiction, relapse and risky situations and generating motivation are included in the programme [21].

As part of routine applications again, urine tests were applied to all participants before participating in the programme and before each SAMBA session. The urine test screens for cannabis, opioid, MDMA, cocaine and benzodiazepine. The test result is "positive" when substance is detected, "negative" when not. It is compulsory for the participants to continue the programme irrespective of substance detection in urine tests during the process. Those with "positive" urine test results more than once throughout the three-month period are considered non-compliant to treatment. The sociodemographic form and BAPI-K are applied to participants before beginning the programme. Ethics committee approval for the research is granted by Erenköy Hospital for Mental and Nervous Diseases Ethics Committee decision no:10/30.

Statistical analysis

During the analysis, those who are other than married or single are evaluated under the "other" category for marital status. While those who have finished high school or college are labelled, evaluated as high for level of education, others are taken to analysis as low. Odds ratio and confidence interval (CI) for the comparison of categorical variables and urine test results,

independent samples *t*-test for the average scores of several variables according to result of treatment compliance, logistic regression analysis for determining variables which predict urine test results were applied. In the logistic regression analysis, the values female = 0, male = 1 were assigned for the sex variable; the values married = 0, single = 1 were assigned for the marital status variable; and the values employed = 0, unemployed = 1 were assigned for the employment status variable.

Findings

Three of the 124 substance users admitted to the study refused to participate in the study. The demographic and medical history specifics of the sample are shown in Table 1. The large majority of the sample consists of males. It is noticed that an important part of those admitted to the study are single, employed and do not use substances intravenously (Table 1).

The rate of those who report cannabis use one to three times a month or more frequently are found to be 62%. The relevant rate for MDMA was found to be 8.8%, with 3.6% for opioids, 3.6% for cocaine, and 3% for inhalants.

About 66.9% ($n = 81$) of those admitted to the study were evaluated as compliant to treatment according to urine test results. The rate of substance users whose urine test results were determined positive more than once and evaluated as non-compliant to treatment was determined as 33.1% ($n = 40$). The average scores of several variables of substance users evaluated as compliant and non-compliant were compared. The average scores of those for substance craving and novelty-seeking behaviour subscales of those evaluated as non-compliant to treatment were determined as statistically significantly higher at baseline than those evaluated as compliant to treatment (Table 2).

No statistically significant difference was found at the odds ratios for the treatment compliance result of categorical variables such as sex, level of education, marital status, employment status, and intravenous substance use (Table 3). Being male or female, of low or high level of education, employed or unemployed, married or single were observed to not affect compliance to treatment during the probation process. About 62.8% ($n = 76$) of the sample were able to complete the structured SAMBA treatment programme during the probation process, while 37.2% ($n = 45$) were not. No positive urine test results were obtained during the process from the substance users who completed the SAMBA programme. Five substance users (11.1%) were evaluated as non-compliant to treatment, while 40 substance users (88.9%) were evaluated as compliant to treatment. The substance users who could not complete the SAMBA programme are those who did not participate for lack of motivation even though they were required by rules to participate in the programme. The risk of being non-compliant to treatment of those who did not complete the programme was found to be nine times more than for those who completed the programme (odds rate 9.02; CI = 3.93–20.56).

No variable was determined to predict compliance to treatment on a significant level in the logistic regression analysis made with sociodemographic variables (Table 4). It was observed that sex, level of education, marital status, employment status, and intravenous substance use during the probation process do not predict compliance to treatment.

The logistic regression analysis of factors related to substance use and mental problems which predict compliance to treatment can be found in Table 5. It has been concluded that novelty-seeking behaviour, craving for substance, and impulsive behaviour are factors that determine non-compliance to treatment as three separate and independent variables.

For those evaluated as compliant or non-compliant to treatment, the distribution of average positive urine test results to total number of urine tests administered can be seen from Figure 1. The two groups are alike in the first urine test applied. From the second test on, however, the number of positive urine test results in those who are compliant to treatment gradually decreases. Examining the graph, the average number of positive urine test results in those evaluated as non-compliant are noticed to decrease in the first urine test results, but gradually increase at the later tests. The risk of non-compliance to treatment is 1.7 times greater (odds rate = 1.73; CI = 1.45–6.70) for those with at least one positive result in the first

Table 1. Demographics and medical histories of the sample.

	General	
	N	%
Sex		
Female	6	5
Male	115	95
Level of education		
Low	75	61.9
High	46	38.01
Marital status		
Married	38	33
Single	69	60
Other	14	7
Employment status		
Employed	94	77.6
Unemployed	19	15.7
Student	8	6.6
Intravenous substance use		
No use	98	80.9
Used once	19	15.7
Used more than once	4	3.3
		Mean ± SD
Age		32.11 ± 8.6
Number of previous psychological/psychiatric treatment		0.16 ± 0.6
Number of inpatient addiction treatment		0.11 ± 0.5
Number of outpatient addiction treatment		0.26 ± 0.8
Number of cessation attempts		1.30 ± 2.7
Level of financial problem		1.27 ± 1.8
Total API score		7.05 ± 3.5

Table 2. Comparison of those compliant and non-compliant to treatment relative to several variables.

	Compliant to treatment		Non-compliant to treatment				
	Mean	Standard deviation	Mean	Standard deviation	*T* value	df	*p*
Age	31.93	7.87	32.48	9.99	−.31	107	.75
Financial problems	1.17	1.12	1.46	1.25	−1.22	106	.22
Number of previous treatments	1.44	3.82	1.31	2.13	.17	98	.85
Number of psychiatric treatments	0.17	.71	0.12	0.41	.43	98	.66
Substance use specifics	1.17	1.21	1.04	1.197	.48	101	.63
Criteria for addiction diagnosis	6.79	5.01	7.70	5.34	−.89	109	.37
Effect of substance use on life	13.77	9.56	15.43	9.69	−.86	107	.38
Craving for substance use	4.08	3.64	5.86	4.50	−2.21	104	.02
Motivation to quit using	8.08	3.67	7.77	3.64	.41	101	.68
Lack of anger management	1.92	1.56	2.16	1.78	−.71	101	.47
Lack of assertiveness	3.13	1.92	3.83	2.02	−1.72	101	.08
Novelty-seeking behaviour	1.05	1.21	2.22	1.31	−4.49	101	.00
Impulsive behaviour	1.74	1.61	1.72	1.32	.06	100	.94
Depression	2.16	1.74	1.97	1.46	.57	101	.56
Anxiety	1.32	1.37	1.24	1.32	.28	100	.77
API total score	6.77	3.36	7.54	3.77	−1.01	93	.31

Note: df: degrees of freedom.

Table 3. The comparison according to categorical variables of those compliant and non-compliant to treatment.

	Compliant treatment		Non-to compliant to treatment			
	N	%	*N*	%	Odds ratio	Confidence interval (CI)
Sex						
Male	77	67.0	38	33.0	0.98	0.17–5.63
Female	4	66.7	2	33.3		
Level of education						
Low	49	66.2	26	33.8	.94	0.42–2.11
High	31	67.4	15	32.6		
Marital status						
Single	51	63.6	29	36.4	1.40	0.60–3.25
Married	28	71.1	13	28.9		
Employment status[a]						
Employed	63	67.8	31	32.2	2.40	0.79–7.26
Unemployed	9	46.7	10	53.3		
Intravenous substance use[b]						
No	65	66.3	33	33.7	1.97	0.26–14.61
Yes	2	50.0	2	50.00		

[a]Present students are excluded.
[b]Those who intravenously used substance only once are excluded.

Table 4. Logistic regression analysis made with sociodemographical variables.

	B	S.E.	Wald	df	*p*	OR
Age	.007	.033	.050	1	.824	1.007
Sex	.179	.943	.036	1	.850	1.196
Level of education	.292	.243	1.442	1	.230	1.339
Marital status	.277	.512	.293	1	.588	1.319
Employment status	−.083	.392	.044	1	.833	.921
Level of financial problems	.150	.227	.436	1	.509	1.162
Constant	−2.639	2.643	.997	1	.318	.071

Note: OR: odds ratio.

three urine tests. For those with at least one positive result in the last three urine tests, the risk of non-compliance to treatment is 41 times greater (odds rate = 41.00; CI = 5.91–284.14).

Conclusion

The effect of sociodemographic variables, substance use characteristics, mental problems, the treatment programme applied, and urine tests during the process on compliance to treatment for substance users referred to treatment under probation was investigated in this study; and important findings were obtained which may orientate the treatment process.

Rate of non-compliance to treatment in substance users admitted to treatment under probation was

Table 5. Logistic regression analysis conducted with variables about substance use and mental status.

	B	S.E.	Wald	df	*p*	OR
Number of previous treatments	−.007	.098	.005	1	.945	.993
Intravenous substance use	.858	1.518	.319	1	.572	2.357
Substance use specifics	−.492	.360	1.864	1	.172	.612
Criteria of diagnosis	−.020	106	.037	1	.847	.980
Effect of substance use on life	.025	.061	.173	1	.678	1.026
Craving for substance	.483	.165	8.605	1	.003	1.621
Motivation for cessation	−.077	.115	.453	1	.501	.926
Lack of anger management	.331	.316	1.100	1	.294	1.392
Lack of assertiveness	.233	.204	1.297	1	.255	1.262
Novelty-seeking behaviour	.763	.310	6.068	1	.014	2.145
Impulsive behaviour	−.871	.412	4.474	1	.034	.419
Depression	−.580	.431	1.805	1	.179	.560
Anxiety	−.347	.437	.632	1	.427	.707
Constant	−1.965	1.068	3.387	1	.066	.140

Note: OR: odds ratio.

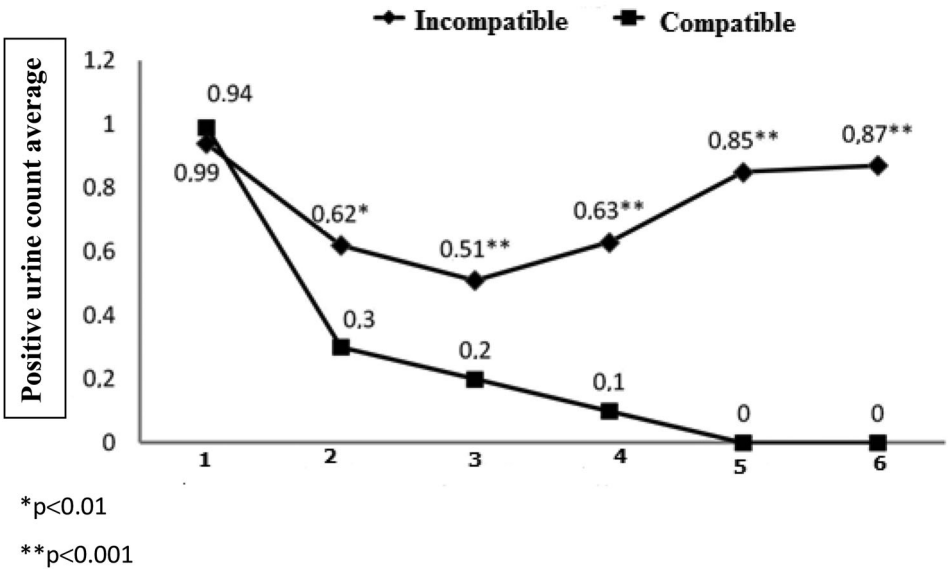

Figure 1. Average positive urine test results among users compliant and non-compliant to treatment. *$p < .01$; **$p < .001$.

determined as 33% in our study. This rate was found to be 22.4% in a previous study conducted in Turkey [9]. In another study where only cannabis users were evaluated, the rate of non-compliance was determined as 51% [22].

Craving is one of the most important concepts of addiction. There exist many studies which indicate that craving should be regarded as an indicator of progress and relapse in treatment [23]. In the present research, craving is shown to be one of the important factors affecting the treatment process under probation. While there exist previous studies which demonstrate the effect of the existence of treatment attempts about addiction problems on compliance to treatment under probation [24], no important effect of previous treatment attempts was found in this study. This may be the result of the low average number of previous treatments in our sample.

Impulsive behaviour and novelty-seeking behaviour are shown to have an important role in the beginning and continuance of substance use [25]. Lack of anger management was stated to be among causes to abandon treatment of addiction, and impulsive behaviour was stated to be more frequently seen in addicted substance users relative to those who are not addicted [26,27]. Impulsive behaviour was found to predict non-compliance to treatment under probation in our study. It was also observed that the severity of addiction did not differ between compliants and non-compliants to treatment. For this reason, impulsive behaviour can be stated to negatively affect the treatment process independently of the severity of addiction.

The relation between novelty-seeking behaviour and substance use has also been demonstrated by many studies [28]. It is claimed that novelty-seeking behaviour is a component of impulsivity. As such, it has been stated that novelty-seeking behaviour determines the frequency of risk taking behaviour [29]. In our study, impulsive behaviour and novelty-seeking behaviour are determined to predict non-compliance to treatment as independent variables.

No substance use was detected in the urine tests of those who participated in the structured treatment programme (SAMBA) applied during the treatment process; and the risk of non-compliance to treatment in those who did not complete the programme was found nine times higher than those who did. For this reason, it can be stated that the programme affects compliance to treatment positively. While the SAMBA programme was already demonstrated as an effective treatment [30], it is demonstrated to be effective in the probation process also in the present research. The reduction of substance use rates in urine tests by structured programmes has been demonstrated in other studies [31]. For this reason, it can be asserted that it is important to admit substance users under compulsory treatment on probation to structured treatment programmes.

Our findings have shown that the pattern of urine tests applied during the process may provide hints about treatment compliance and serve as a premonition. The probability of non-compliance to treatment is very high for those with positive results on the last three urine tests. For this reason, the necessity of careful examination of urine tests and stronger interventions in case of positive urine test results after a certain period emerges.

That the research comprises three months may be considered a deficiency. A duration of three months covers "Early Recovery Period" for addiction treatment. İt is evident that 12-month follow-up studies may provide more extensive information. It has been asserted that 30% of substance users treated under probation began using again in the first 100 days [32].

Hence, it may also be asserted that the three-month follow-up process is important. Even though long-term studies are considered to be more significant in understanding substance users' behaviour, understanding substance users' behaviour in the first months of the probation process has also been stated to be necessary for the success of the treatment process [33].

We are of the opinion that future studies should incorporate more variables and that longer-term follow-up studies should be conducted.

In conclusion it can be stated that substance users in the treatment under probation whose craving for substance, novelty-seeking behaviour, and impulsive behaviour are higher should be followed more intensively; and that structured treatment programmes increase compliance; and that substance detection especially in the last urine samples may be a precursor of non-compliance to treatment.

Disclosure statement

No potential conflict of interest was reported by the authors.

References

[1] Denetimli Serbestlik Daire Başkanlığı 2015 yılı Mayıs ayı istatistikleri. 15 Ağustos 2015'de http://www.cteds.adalet.gov.tr/menusayfalari/bilgibankasi/istatistik/2015/mayis_2015.pdf adresinden indirildi

[2] Carey M. Probation. In: Leukefeld C, Gullota TP, Gregrich J, editors. Handbook of evidence-based substance abuse treatment in criminal justice settings. New York (NY): Springer; 2011. p. 143–171.

[3] Glaze LE, Bonczar TP, Zhang F. Probation and parole in the United States, 2009. Washington (DC): Bureau of Justice Statistics; 2010.

[4] Staton-Tindall M, Havens JR, Oser CB, et al. Substance use prevalence in criminal justice settings. In: Leukefeld C, Gullota TP, Gregrich J, editors. Handbook of evidence-based substance abuse treatment in criminal justice settings. New York (NY): Springer; 2011. p. 81–101.

[5] Zorlu N, Türk H, Manavgat Aİ, et al. Denetimli serbestlik uygulaması kapsamında başvuran hastalarda sosyodemografik, klinik özelliklerin ve alkol kullanım bozukluğu sıklığının geriye dönük değerlendirilmesi. Anadolu Psikiyatri Derg. 2011;12(4):253–257.

[6] Somers JM, Currie L, Moniruzzaman A, et al. Drug treatment court of Vancouver: an empirical evaluation of recidivism. Int J Drug Policy. 2012;23(5):393–400.

[7] Lattimore PK, Krebs C, Koetse W, et al. Predicting the effect of substance abuse treatment on probationer recidivism. J Exp Criminol. 2005;1(2):159–189.

[8] Akpınar A, Şalış O, Aksoy UM. Evaluation of the probation results of 2010 in Samsun mental health hospital and the compliance with treatment in individuals referred from the centers outside of the city center of Samsun. Dusunen Adam. 2013;26(1):46–54. Turkish.

[9] Bilici R, Yazıcı E, Tufan AE, et al. Motivation for treatment in patients with substance use disorder: personal volunteering versus legal/familial enforcement. Neuropsychiatr Dis Treat. 2014;10:1599–1604.

[10] MacKenzie DL, Browning K, Skroban SB, et al. The impact of probation on the criminal activities of offenders. J Res Crime Delinq. 1999;36(4):423–453.

[11] MacKenzie DL, De Li S. The impact of formal and informal social controls on the criminal activities of probationers. J Res Crime Delinq. 2002;39(3):243–276.

[12] Scott CK, Dennis ML, Foss MA. Utilizing recovery management checkups to shorten the cycle of relapse, treatment reentry, and recovery. Drug Alcohol Depend. 2005;78(3):325–338.

[13] Mitchell O, Wilson DB, Eggers A, et al. Assessing the effectiveness of drug courts on recidivism: a meta-analytic review of traditional and non-traditional drug courts. J Crim Justice. 2012;40(1):60–71.

[14] Taxman FS, Thanner M, Weisburd D. Risk, need, and responsivity (RNR): it all depends. J Res Crime Delinquency. 2006;52:28–51.

[15] Huebner BM, Cobbina J. The effect of drug use, drug treatment participation, and treatment completion on probationer recidivism. J Drug Issues. 2007;37(3):619–641.

[16] Bahr SJ, Harris BE, Strobell JH, et al. An evaluation of a short-term drug treatment for jail inmates. Int J Offender Ther Comp Criminol. 2013;57(10):1275–1296.

[17] Ogel K. Alkol ve madde bağımlılığı tedavisinde bireyselleştirilmiş tedavi planı oluşturacak web temelli bir aracın geliştirilmesi. TÜBİTAK 1002 araştırma projesi raporu, Proje No: 113S050, 2014; s. 25-26.

[18] Ogel K, Evren C, Karadag F, et al. Development, validity and reliability study of addiction profile Index (BAPI). Türk Psikiyatri Dergisi. 2012;23:264–273. Turkish.

[19] Ogel K, Basabak A, Koc C, et al. Psychometric properties of different forms of the addiction profile index (BAPİ). Klinik Psikofarmakoloji Bulteni-Bulletin of Clinical Psychopharmacology. 2011;21(Suppl. 2):151. Turkish.

[20] Ogel K, Koc C, Basabak AZ, et al. Development of addiction profile index (BAPI) clinical form: reliability and validity study. Bağımlılık Dergisi. 2015;16(2):57–69.

[21] Ogel K, Koc C, Aksoy A, et al. Sigara, Alkol ve Madde Bağımlılığı Tedavi Programı (SAMBA). İstanbul: Yeniden Yayınları; 2012.

[22] Uğurlu GK, Bilici R. Six-week cannabis-free period rates with probation treatment program: a retrospective cohort study. J Subst Use. 2015;20(6):375–379.

[23] Paliwal P, Hyman SM, Sinha R. Craving predicts time to cocaine relapse: further validation of the now and brief versions of the cocaine craving questionnaire. Drug Alcohol Depend 2008;93:252–259.

[24] Yazıcı AB, Yazıcı E, Kumsar NA, et al. Addiction profile in probation practices in Turkey: 5-year data analysis. Neuropsychiatr Dis Treat. 2015;11:2259–2263.

[25] Perry JL, Carroll ME. The role of impulsive behavior in drug abuse. Psychopharmacology (Berl). 2008;200(1):1–26.

[26] Nielsena DA, Ho A, Bahla A, et al. Former heroin addicts with or without a history of cocaine dependence are more impulsive than controls. Drug Alcohol Depend. 2012;124(1–2):113–120.

[27] Vardar E, Sönmez B, Şıpka H, et al. Bağımlılık tedavisini terk nedenlerinin değerlendirilmesi. Bağımlılık Dergisi. 2015;2:70–77.

[28] Ersche KD, Turton AJ, Pradhan S, et al. Drug addiction endophenotypes: impulsive versus sensation-seeking personality traits. Biol Psychiatry. 2010;68(8):770–773.

[29] Birkley EL, Smith GT. Recent advances in understanding the personality underpinnings of impulsive

behavior and their role in risk for addictive behaviors. Curr Drug Abuse Rev. 2011;4(4):215–227.
[30] Ögel K, Koç C, Karalar B, et al. Effectiveness of an addiction treatment program called samba: a pilot study. Bulletin of Clinical Psychopharmacology. 2011;21(Suppl. 2):150–151.
[31] Shannon LM, Hulbig SK, Birdwhistell S, et al. Implementation of an enhanced probation program: evaluating process and preliminary outcomes. Eval Program Plann. 2015;49:50–62.
[32] Gray MK, Fields M, Maxwell SR. Examining probation violations: Who, what, and when. J Res Crime Delinquency. 2001;47(4):537–557.
[33] Caudy MS, Tang L, Wooditch A, et al. Short-term trajectories of substance use in a sample of drug-involved probationers. J Subst Abuse Treat. 2014;46(2):202–213.