

**Original article / Araştırma****Factors affecting treatment compliance in patients with substance use disorder under probation**Hanife YILMAZ ÇENGEL,<sup>1</sup> Utku UZUN,<sup>2</sup> Müge BOZKURT,<sup>3</sup> Cüneyt EVREN<sup>4</sup>**ABSTRACT**

**Objective:** The present study aims to determine the factors that affecting the treatment compliance in patients with substance use disorder (SUD) under probation in terms of sociodemographics, substance use characteristics, addiction severity, perceived family support, treatment motivation and impulsiveness. **Methods:** In this study, 93 substance use disorder patients who were taken three-month outpatient treatment program were included consecutively. Sociodemographic Data Form, Addiction Profile Index (API), Perceived Social Support from Family Scale (PSS-Fa), Barratt Impulsiveness Scale and Treatment Motivation Questionnaire were applied to patients before the treatment program. **Results:** At the end of three months follow-up period 55 (59.1%) of the 93 patients were treatment-incompatible while 38 (40.9%) were treatment-compatible. When the tests results are examined; the craving subscale score of API had significantly higher and the PSS-Fa scores had significantly lower in the treatment-incompatible group than the treatment-compatible group. **Conclusion:** In our study, craving and low perceived family support were found to be factors affecting treatment compliance in patients with SUD on probation. These results emphasized the importance of including the family in the treatment program, evaluating craving at each session and providing pharmacological or psychotherapeutic support for craving. (*Anatolian Journal of Psychiatry* 2020; 21(4):373-379)

**Keywords:** probation, substance use disorder, treatment compliance, craving, family support

**Denetimli serbestlik önlemi ile tedavi kararı verilen madde kullanım bozukluğu olgularında tedavi uyumuna etki eden etkenlerin incelenmesi****Öz**

**Amaç:** Bu çalışmanın amacı, hakkında 'denetimli serbestlik tedbiri ile tedavi' kararı verilmiş madde kullanım bozukluğu (MKB) olan sanık veya hükümlülerde madde kullanım özellikleri, bağımlılık şiddeti, algılanan aile desteği, tedavi motivasyonu ve dürtüsellik düzeyleri açısından tedaviye uyumuna etki eden etkenlerin saptanmasıdır. **Yöntem:** Çalışmaya MKB tanısı konularak üç aylık ayaktan tedavi programına alınmasına karar verilen ve çalışmaya onay veren ardışık 93 erkek hasta alınmıştır. Tedavi programı öncesinde hastalara Sosyodemografik Veri Formu, Bağımlılık Profil İndeksi (BAPİ), Algılanan Aile Desteği Ölçeği (PSS-Fa), Barrat Dürtüsellik Ölçeği, Tedavi Motivasyonu Anketi uygulanmıştır. **Bulgular:** Tedavi programına alınan 93 hastanın 55'i (%59.1) tedaviye uyumsuz, 38'i (%40.9) tedaviye uyumlu olarak programı tamamlamıştır. Çalışmamızda tedavi uyumsuz grubun tedavi uyumlu gruba göre,

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*BAPİ'nin şiddetli madde kullanma isteği alt ölçeği puanları anlamlı olarak daha yüksek, PSS-Fa puanları anlamlı düzeyde daha düşük saptanmıştır. Sonuç: Çalışmamızda şiddetli madde kullanma isteği ve algılanan aile desteğinin düşük olması MKB tedavisinde tedavi uyumuna etki eden etkenler olarak bulunmuştur. Bu sonuçlarla aileyi de tedaviye katmanın önemi, madde kullanma isteği ve aşermenin her oturumda sorgulanması ve aşermeyi azaltmaya yönelik farmakolojik veya psikoterapötik desteğin sağlanması gerektiği vurgulanmıştır. (Anadolu Psikiyatri Derg 2020; 21(4):373-379)*

**Anahtar sözcükler:** Denetimli serbestlik, madde kullanım bozukluğu, tedavi uyumu, aşerme, aile desteği

## INTRODUCTION

Substance use disorder (SUD) is a disease that affect not only individual also has a high adverse effects on public safety and economy. In order to reintegrate individuals with illegal substance use into society, the concept of Probation Measure (PM) was born as part of the criminal proceedings and as an alternative penal execution system.<sup>1</sup> Probation system in Turkey was established in 2005 and between the years 2006 and 2015, 107,920 who were under probation were treated for SUD in Turkey.<sup>2</sup> In the treatment of SUD, even self-referral is always considered a good prognostic factor, compulsory treatments are also effective when appropriate treatment programs and services are provided. Important factors in order to increase the effectiveness of compulsory treatments are: longer duration of intervention, having a structured but flexible treatment program, evaluation of the treatment efficacy at regular intervals, monitoring the change in the patients. It has been shown that familial, environmental and personal characteristics of individual are other factors that affect the treatment success.<sup>3</sup> Family has a key role in prevention of the onset of SUD.<sup>4</sup> When individuals have low family support they have difficulties in maintaining the treatment. Since the treatment motivation involves desire to change and being ready for change, it has been considered as an important factor for responding to treatment.<sup>5,6</sup> Impulsiveness is defined as a tendency to act quickly without giving prior thought than individuals with similar abilities and knowledge.<sup>7</sup> It has been suggested that impulsiveness may be effective both in the onset and maintenance of substance use,<sup>8</sup> as well as in recurrence during and after the process of stopping substance use.<sup>9,10</sup>

In the direction of all these studies, the investigation of the factors that are effective in the successful completion of treatment for SUD within the scope of probation has a critical importance. There are several studies that investigate treatment program characteristics or familial, personal or substance use characteristics of individuals separately. In our study we try to examine all of

these factors at the same time under a structured treatment program. The aim of this study is to determine the factors affecting treatment compliance among patients with SUD who have been on probation in terms of substance use characteristics, addiction severity, perceived family support, treatment motivation and impulsiveness.

## METHODS

### Participants

The sample of the study consists of 104 consecutive male patients who have been given the 'Probation Measure (PM) and Treatment' decision in respect of the Article 191 of Turkish Criminal Law and observed by the Istanbul Probation Measure and Help Branch Offices, who have applied to the Probation Measure Outpatient Clinic of Bakırköy Mental Health and Neurological Diseases Training and Research Hospital for treatment purpose between October 10<sup>th</sup>, 2016 and December 10<sup>th</sup>, 2016. The Ethics Committee approval was obtained before the study. All of the participants were informed about the interview and tests to be applied and written consent was taken from each participant. After their first interview was completed by the specialists in the branch office, who have been diagnosed with substance use disorder and have been decided to be taken in the 3-month outpatient program but does not need pharmacotherapy, and who have given approval to participate in the study. The exclusion criteria for the study are: to be under 18 years and over 65 years old, to be illiterate, to have cognitive impairment or mental retardation to prevent the process of the treatment, to have a psychiatric disorder other than SUD, to have severe physical illness. Among 104 patients, nine patients who have been diagnosed with a psychiatric disorder other than SUD and two illiterate patients were excluded from the study. Thus, 93 patients taken to the study were followed for three months.

### Procedure

Sociodemographic Data Form, Addiction Profile Index (API), Perceived Social Support from

Family Scale (PSS-Fa), Barratt Impulsiveness Scale (BIS-11) and Treatment Motivation Questionnaire (TMQ) were applied to 93 male patients who have been diagnosed with SUD, before the treatment program. Patients were then taken to a three-month outpatient treatment program. Each patient was taken to the Smoking, Alcohol, and Substance Abuse Treatment Program (SAMBA) in accordance with a three-month outpatient treatment program. SAMBA is a structured treatment program of which pilot researches were conducted for its effectiveness, and has been used in addiction clinics in our country.<sup>11</sup> The SAMBA program is a group therapy program based on cognitive behavioral therapy and motivational interviewing and is structured as six sessions every 15 days for PM practices. Urine samples were routinely taken from patients before each session and the substance metabolite test was performed. Those who did not participate in at least four sessions of the treatment program or who were found to be positive for the substance metabolite in one of the last three urine toxicology tests: considered as treatment-incompatible; and others considered as treatment-compatible.

#### Data collection tools

**Addiction Profile Index (API):** API is a self-report scale consisting of 37 questions and five subscales. Subscales measure the substance use characteristics, addiction diagnostic criteria, the effect of substance use on the life of the individual, the severe desire for substance use and the motivation to stop substance use. The validity and reliability study was carried out by Ogel et al.<sup>12</sup>

**Perceived Social Support from Family Scale (PSS-Fa):** The scale developed by Procidano and Heler has 20 questions answered as correct, incorrect and partially, which evaluates family support.<sup>13</sup> The validity and reliability of the scale were studied by Eskin.<sup>14</sup>

**Barratt Impulsiveness Scale-11 (BIS-11):** It is a self-report scale to evaluate impulsiveness. It consists of thirty items and has three subscales in it: attention (carelessness, cognitive disorder), motor (motor impulsiveness, impatience) and non-planning (inability to make control, intolerance to cognitive complexity). When BIS-11 is evaluated, four different subscores are obtained: total points, non-planning, attentional and motor impulsiveness scores. When the total BIS-11 score is higher, the impulsiveness of patient gets higher, too. The Turkish validity and reliability study of the BIS-11 was performed by Gulec et

al.<sup>15</sup>

**Treatment Motivation Questionnaire (TMQ):** TMA is a self-report questionnaire with 26 questions developed by Ryan et al. designed to evaluate the reasons for participation and stay in alcohol/substance abuse treatment of subjects.<sup>16</sup> It is a 5-point Likert-type scale that subjects answer in a varying manner from 'I strongly disagree' to 'I strongly agree'. Factor analysis have showed that the scale included 4 identifiable factors, namely internal motivation (IM), external motivation (EM), interpersonal help seeking (IHS), and non-confidence in treatment (NCT). Evren et al. conducted the Turkish validity and reliability study of the TMQ.<sup>6</sup>

#### Statistical analysis

The statistical analysis of the study was evaluated by SPSS version 20.0 for Mac OSX. In statistical evaluations, descriptive statistics (frequency and ratio) was used for sociodemographic variables. We performed chi-square test to investigate the relationship of categorical variables and Mann-Whitney U test for continuous variables of independent groups when they are not normally distributed. The results will be evaluated at the level <0.05 of significance.

#### RESULTS

Fifty five (59.1%) of the 93 patients who participated in the treatment program completed the program as treatment-incompatible, and 38 (40.9%) completed the program as treatment-compatible. Twenty-eight (50.9%) of the treatment-incompatible patients were considered incompatible because they did not attend the treatment program regularly, and 27 (49.1%) were also considered as incompatible because they were found to be positive for the substance metabolite in one of the last three urine tests even though they continued to the treatment program. There were no significant differences between the two groups in terms of sociodemographic variables. The sociodemographic characteristics of the sample participating in the study are presented in Table 1.

When the study sample was compared in terms of API total score, the treatment-compatible group had a score of  $8.63 \pm 4.49$ , the treatment-incompatible group had a score of  $10.3 \pm 4.41$ , and at that rate there was no significant difference between them ( $p=0.10$ ) (Table 2). Although treatment incompatible group had higher scores in substance use subscale, addiction diagnostic criteria subscale, effect of substance use on

**Table 1.** Comparison of sociodemographic variables of the participants

	Treatment-compatible		Treatment-incompatible		F	p
	Mean±SD		Mean±SD			
Age (years)	30.39±7.61		30.09±7.63		0.11	0.85
Duration of education	9.23±3.61		9.33±3.83		0.16	0.88
	n	%	n	%	$\chi^2$	p
Marital status <sup>a</sup>					1.63	0.804
Single	23	60.5	36	65.5		
Married	11	28.9	15	27.3		
Divorced, widow, separate	4	7.3	4	10.5		

**Table 2.** Findings obtained from data collection tools

	Treatment-compatible	Treatment-incompatible	u	p
	Mean±SD	Mean±SD		
Perceived Family Support Scale (PSS-Fa)	29.11±6.48	25.72±7.42	-2.27	<b>0.03</b>
Addiction Profile Index (API)				
Criteria for addiction diagnosis	9.75±6.77	12.05±6.54	1.64	0.10
Substance use specifics	1.42±1.31	1.87±1.34	1.61	0.11
Effect of substance use on life	20.63±12.6	23.07±12.8	0.91	0.36
Craving for substance use	5.15±4.85	7.78±4.43	2.70	<b>0.008</b>
Motivation to quit using substance	8.84±3.67	10.31±3.31	0.66	0.51
API total score	8.63±4.49	10.30±4.41	1.78	0.08
Treatment Motivation Questionnaire (TMQ)				
Internal motivation	28.19±11.8	27.58±10.3	-0.26	0.79
External motivation	8.73±3.53	9.36±3.17	0.89	0.37
Interpersonal help seeking (IHS)	12.07±5.72	12.14±5.18	0.06	0.95
Non-confidence in treatment (NCT)	8.50±3.58	8.92±3.57	0.56	0.57
Barrat Impulsiveness Scale-11 (BIS-11)				
Attention impulsiveness	8.95±2.95	9.49±2.65	0.93	0.36
Motor impulsiveness	8.39±4.76	9.87±4.71	1.48	0.14
Planning inability impulsiveness	13.39±5.18	14.03±5.03	0.59	0.55
Total	30.73±11.04	33.40±9.87	1.21	0.23

individual's life subscale, motivation to quit substance use subscale according to treatment-compatible group the difference was not statistically significant. In the severe craving for substance use subscale scores: the treatment-compatible group had significantly lower scores (5.15±4.85) than the treatment-compatible group (7.78±4.43) ( $p=0.008$ ) (Table 2). When the study sample was compared with the PSS-Fa scores, the total score of treatment-compatible group (29.11±6.48) was significantly higher than the treatment-compatible group (25.72±7.42) ( $p=0.03$ ) (Table 2). Treatment-incompatible group also had higher scores on both BIS-11 total score and all BIS-11 subscales than the treatment-compatible group but no statistically

significant difference was found between the two groups (Table 2). When the study sample was compared in terms of TMA scores no significant difference was detected between treatment compatible group and treatment incompatible group (Table 2).

## DISCUSSION

Fifty five (59.1%) of the 93 patients who participated in the treatment program completed the program as treatment-incompatible, and 38 (40.9%) completed as treatment-compatible. These data share similarities with those given in the results of the studies carried out in our country and abroad.<sup>3</sup> Studies have proven that

there is a significant relationship between the PM treatment content and the treatment success.<sup>17</sup> Low perceived family support in our study was found to be one of the factors affecting the treatment compliance in SUD. Family support is an important factor in preventing all criminal behavior of individuals also preventing substance use and reducing the risk of use.<sup>18,19</sup> Studies have demonstrated that the quality of social relationships at the time of the treatment is related to the outcome of the treatment and the risk of recurrence.<sup>20,21</sup> According to these data, it can be considered that including family and social circle into the PM follow-up and the treatment program will increase the success rate.<sup>22</sup> With our study, it has been once again emphasized the importance of including family into the treatment process. Providing the participation of family members and time to time friends into the treatment process, informing them about addiction and treatment process and getting their support will also be beneficial.

In this study craving was found to be another factor affecting treatment compliance in SUD. It has been observed that individuals with severe craving have difficulty for completing the PM treatment program. It was reported that craving and sensation seeking subscales of API were the factors determining the success rate of completing the PM treatment program.<sup>11</sup> When the relationship between substance use characteristics and treatment outcome in individuals who receive a compulsory treatment is examined, low severity of SUD, absence of multiple substance use, low frequency of substance use, and low craving for substance use during treatment were associated with positive treatment outcomes.<sup>3</sup> Similarly, in the studies conducted in the US on the PS follow-up and treatment program, substance use with high-risk, high severity of SUD, frequent substance use in the last period, and severe craving for substance use were associated with incompatible treatment outcomes.<sup>21-23</sup> It is important to question craving for substance use at each session of the meetings and to provide a pharmacological or psychotherapeutic support for reducing craving.

General impulsivity level and all impulsivity subscale levels were found to be higher in treatment-incompatible group than the treatment-compatible group but no statistically significant difference was found between groups. It has been shown in previous studies that the impulsivity level of an individual is related to the abstinence of substance use,<sup>24</sup> prevention recurrence,<sup>25</sup> and the treatment success.<sup>26</sup> Finding a

high level of both general impulsiveness and attentional, motor, and non-planning impulsiveness in this study sample of individuals who were given PM and treatment decision due to substance abuse crime was consistent with similar data in the literature. In those individuals who have substance abuse and criminal history, behavioral and motivational counselling for their impulsiveness besides medical treatment may be useful for the successful completion of the treatment.

When the results of the treatment motivation questionnaire were evaluated, there was no significant difference between the groups in internal motivation, seeking help, confidence in the treatment and external motivation scores. The theories about the treatment motivation suggest that there is a relationship between the seriousness of the problems of substance users and continuing the treatment and getting positive results.<sup>27,28</sup> Our study sample consisted of patients sent to the compulsory treatment, so it can be said that the treatment motivation of this sample is low and this property of our sample may explain the lack of a significant difference between groups in terms of TMA. Although the pre-treatment motivation of individual is low in compulsory treatments such as legal requirement, it may be effective in gaining awareness about the treatment and substance-related problems.<sup>29</sup> It is important for clinicians to apply treatment approaches that increase motivation in individuals with low motivation.

### Study limitations

The most important limitation of this article is that the study was conducted in a patients with substance use disorder who were under probation. Therefore, the study results cannot be generalized for all patients with substance use disorders. The fact that all of the participants in the study are male leads us to be unable to comment on female PM subjects. The fact that this study sample was randomized in a consecutive sequence has led to different substance use characteristics of patients. The frequency of substance use and duration of severity vary among patients. Multiple SUD were found to be associated with incompatible treatment outcomes.<sup>21,22</sup> The lack of standardization in terms of substance use characteristics may have caused confounding effects. The participants sent to the treatment with legal obligation so they may have led the physician to misguide, to show themselves better than they are, and to tend to hide the facts. By emphasizing that this study and the PM

process are separate things, it has been tried to ensure that the possible measurement errors are minimized.

## CONCLUSION

Since 2005, those who commit substance abuse offense are referred to treatment by the PM offices in our country. In this study, it has been aimed to determine the factors affecting treatment compliance in terms of substance use characteristics, addiction severity, perceived family support, treatment motivation and impulsivity levels. According to our results severe

craving for substance use and low perceived family support in those who were referred to treatment by PM Offices were found to be the factors determining treatment compliance. In light of these results it can be suggested that patients with low family support and high craving levels need to be monitored closely and perhaps more intensive support programs should be arranged for them. It is clear that further studies are needed in order to determine the characteristics of individuals directed to the compulsory treatment and to arrange the appropriate treatment for them.

**Authors' contributions:** H.Y.Ç: finding subject, data collection, writing manuscript; U.U: finding subject, data collection; M.B: reviewing the manuscript; C.E: statistics, reviewing the manuscript.

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