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Factors Predicting the Outcome of Treatment for Individuals with Alcohol Use Disorder: A Study of the YEDAM Cohort

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WHAT IS ALREADY KNOWN ON THIS TOPIC?

- *Alcohol use disorder is associated with negative health, social, and psychological consequences worldwide.*
- *Psychosocial interventions are widely used as part of alcohol use disorder treatment programs.*
- *Long-term follow-up is considered important for sustaining recovery.*

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ABSTRACT

Objective: Alcohol use disorder (AUD) is a psychiatric disorder that progresses with relapse and remission. The objective of this study was to examine the progress of treatment and the factors influencing it in individuals who sought assistance from Green Crescent Counselling Center (YEDAM) for AUD.

Methods: For the purposes of the retrospective cohort follow-up study, participants who applied to the YEDAM for AUD were demographic information form, Addiction Profile Index (API), API Clinical Form, Kocaeli Psychological Trauma Brief Screening Scale, and Addiction Outcome Assessment Index. Of the 5090 participants in the study, 307 were followed up for 1.5 years.

Results: Those who consistently engaged in the program demonstrated more pronounced improvement and a reduction in alcohol consumption frequency. Furthermore, factors predicting treatment outcome were found to be a dysfunctional relationship with a partner, alcohol use characteristics, craving and anxiety.

Conclusion: This study yielded 2 significant findings. First, the efficacy of the YEDAM treatment program on AUD prognosis was demonstrated. Second, individuals with AUD who are likely to have a poorer prognosis could be identified. In this regard, it will be feasible to implement modifications to the YEDAM treatment program for individuals who are likely to have a less favorable prognosis, thereby enhancing the efficacy of these treatment programs.

Keywords: Addiction, alcohol use disorder, mental health, outcome of addiction

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WHAT THIS STUDY ADDS ON THIS TOPIC?

- *This is the first study to examine treatment outcomes in a large nationwide cohort of individuals with alcohol use disorder in Türkiye.*
- *The efficacy of the Green Crescent Counselling Center treatment program on alcohol use disorder outcome was demonstrated.*
- *Participants in the alcohol use disorder treatment program showed a decrease in the frequency and amount of alcohol use during the one-and-a-half-year follow-up. · Family relationships, alcohol use characteristics, craving and anxiety predicted the outcome of alcohol use disorder.*

INTRODUCTION

Alcohol use disorder (AUD), defined as risky use by the World Health Organization (WHO), causes individual, social, and physical problems.[1] The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) states that AUD may occur if the person continues to use despite experiencing clinical problems within 1 year. Some of the clinical symptoms include having difficulty stopping the craving for alcohol, not being able to quit even though one wants to, and continuing to use despite causing problems in work, health, and social life. If there are 2 or 3 clinical symptoms, it is defined as low severity; if there are 4 or 5, it is considered moderate; and if there are more than 6, it is considered as high severity.[2]

Alcohol use disorder poses a risk for diseases such as cancer, cardiovascular diseases, diabetes, and neuropsychiatric disorders.[3] Individuals with AUD can continue to consume alcohol despite experiencing numerous problems in their work and education life, physical health, and social aspects. Alcohol use disorder can damage the brain structure, which can lead to permanent damage to the individual.[4] Individuals who have difficulty coping with the problems caused by alcohol use, which leads to clinical impairment, may start drinking again even if they quit alcohol, which may lead to a relapse of AUD.[5] It seems that social and environmental factors are also effective in the development of AUD.[6]

Studies show that mental disorders such as depression and anxiety may occur together with alcohol use, or that alcohol use may lead to mental disorders. It is important to find the source of these problems and identify differential diagnoses. Examining mental disorders in the treatment of AUD affects the success of the treatment.[7]

There is an increase in applications for intervention services worldwide due to AUD.[8] Therefore, appropriate intervention and recovery planning are important in the treatment of AUD. While initial definitions of recovery aimed to avoid alcohol, new studies take a holistic approach and focus on improvements in psychosocial functioning. According to a systematic review summarizing various studies on the definition of recovery, recovery is characterized by sustained abstinence from alcohol or drugs, improvements in physical and psychological health, an enhanced quality of life and life satisfaction, and active engagement in meaningful activities and citizenship.[9] Adopting a holistic approach in AUD treatment and monitoring the outcome of outpatient and inpatient treatment appears to support recovery outcomes. Research has found that cognitive behavioral therapy (CBT) and motivational interviewing techniques (MET) have positive effects on AUD treatment outcomes. By using these techniques, it is aimed to reduce the person's symptoms and improve the quality of life.[10] The Green Crescent Counselling Centers (YEDAM) psychosocial support program developed for alcohol and substance use disorder was created using CBT, MET, and mindfulness techniques. The findings of the effectiveness study showed that the YEDAM model is effective in alcohol and substance use disorder.[11]

Studies have examined the outcome of AUD treatment with various variables such as severity and characteristics of addiction,[12] comorbid mental problems,[12] treatment motivation,[12,13] treatment engagement[4] physical health, and gender differences.[14]

This retrospective cohort study aims to examine treatment outcomes, recovery levels, and factors influencing prognosis in individuals with AUD who sought help from the YEDAM program. Insights from this study may guide the identification of at-risk individuals and inform updates to the YEDAM treatment program.

MATERIAL AND METHODS

Sample

The sample for this retrospective cohort follow-up study comprises participants who sought treatment for AUD at the YEDAM between 2019 and 2024. The study used retrospective data from the responses given by the participants during face-to-face sessions with clinical psychologists at YEDAM. Eligible participants were individuals aged 18 years and older who met DSM-5 criteria for AUD.

In order to be eligible for inclusion in the study, participants were required to meet the following criteria: (a) being 18 years of age or older, (b) having a clinical diagnosis of AUD according to DSM-5 criteria, (c) having participated in YEDAM for 24 sessions, (d) having given informed consent to participate in the study, and (e) having complete response data for analysis. The following exclusion criteria were applied: (a) meeting criteria for other primary substance use disorders, (b) severe cognitive impairment that may affect their ability to respond to the questionnaires, (c) incomplete response data, and (d) not participating in YEDAM for 24 sessions.

Of the 5370 people who applied to YEDAM for AUD between 2016 and 2024, 280 were excluded from the data because they did not respond completely to all questions. After the distribution of 5090 people who applied for AUD and responded completely to all questions, the analysis continued with 307 people who were followed-up for approximately one and a half years.

Information About the Treatment Programme

The YEDAM offers free, outpatient psychosocial counseling services to individuals and their families seeking support for alcohol, substance, gambling, internet, and tobacco use. All services provided at YEDAM are structured and systematic. The psychosocial support team, which includes clinical psychologists and social workers, receives ongoing institutional training related to both the YEDAM model and addiction after their undergraduate and graduate education. After primary training on addiction and the YEDAM model, institutional trainings continue in order to increase the professional development of the psychosocial support team. Case follow-ups at YEDAM is carried out with supervision.

In the treatment model, the initial session is conducted by clinical psychologists who assess characteristics of AUD, comorbid conditions, and environmental risk factors. This assessment identifies personalized risk situations and areas of need, leading to the development of a tailored psychosocial support plan in accordance with the YEDAM model. The YEDAM model is based on MET, CBT, and mindfulness. The assessment session is scheduled for 90 minutes, and the follow-up sessions for 45 minutes. Social workers conduct interviews to identify and address the social risks associated with AUD. Similar to the psychological support sessions, a personalized social support program is implemented.

Sessions are held on a weekly basis. During the assessment session, the Sociodemographic and Clinical Data Form, Addiction Profile Index (API), Addiction Profile Index Clinical Form (API-C), Addiction Outcome Index (AOAI), and Kocaeli Short Screening Scale for Psychological Trauma are completed. In the follow-up sessions, only the Addiction Outcome Index is administered. The treatment program adopts a holistic approach, including individual sessions, family sessions, group work, and rehabilitation activities.[15] Research has demonstrated that the YEDAM model is effective in the recovery from alcohol and substance use disorders.[11]

Ethical Considerations

Ethics committee approval for this study was obtained from İstanbul Kent University (Approval no: 2024-05; Date: March 8, 2024).

Measurement

Informed Consent Form

Prior to the initial session, participants were informed that their data would be used for scientific research purposes, that their identities would remain confidential, and that their personal information would not be disclosed.

Sociodemographic and Clinical Data Form

This form collects sociodemographic information and clinical characteristics. The single option included those whose marital status was separated, divorced, or widowed. In order to facilitate the statistical evaluation of educational status, those who did not complete school and those who completed primary school were combined and categorized as low education, secondary school and high school as middle level, and university as high education. The age at which participants first used alcohol was categorized as 14 years or younger (early onset) and older than 14 years. A previous treatment attempt was defined as having received any outpatient or inpatient treatment. Those who answered the question about alcohol or drug dependence in the family as my mother/father, sibling, or second-degree relative were included in the assessment as present. Substance use other than alcohol in the past year was defined as having used cannabis, over-the-counter drugs, ecstasy, cocaine, methamphetamine, synthetic cannabinoids, inhalants, heroin, and other substances in the past year. Binge drinking was defined as a history of 5 or more standard drinks on a single occasion over a period of approximately 2 hours in the past year.

Addiction Profile Index

The Addiction Profile Index (API) is a scale designed to measure addiction severity with a total of 37 items. It covers subdimensions such as alcohol and substance use characteristics, dependency diagnosis, the impact of alcohol and substance use on the individual's life, craving, and motivation to quit. Higher scores on the scale indicate greater addiction severity. Subdimensions are evaluated separately, and the total scale score is derived from the weighted subscales. The overall Cronbach's α coefficient for the scale is 0.89.[16]

Addiction Profile Index Clinical Form

The Addiciton Profile Index Clinical Form (API-C) measures behavioral factors related to addiction with a total of 21 items. It includes subdimensions such as depression, anxiety, difficulty with anger control, lack of assertiveness, impulsivity, and sensation-seeking behavior. Higher scores indicate increased risk factors for mental health problems associated with addiction. The overall Cronbach's α coefficient for the scale is 0.81.[17]

Addiction Outcome Assesment Index

The Addiction Outcome Assesment Index (AOAI) assesses the outcome of addiction treatment with 8 items and includes 2 subscales: substance use characteristics and psychosocial factors. A decrease in scores reflects recovery. The cut-off score for the scale is 8.63, and its Cronbach's α coefficient is 0.80.[11]

Kocaeli Short Screening Scale for Psychological Trauma

This scale is designed to identify symptoms of traumatic stress and post-traumatic stress disorder (PTSD) resulting from traumatic experiences. It consists of 4 items that assess traumatic stress responses in a "present/absent" format. The cut-off score for the Kocaeli Short Screening Scale for Psychological Trauma is set at 3, and its Cronbach's α coefficient is 0.625. For the purposes of the study, those who answered "yes" to at least 3 symptoms based on the cut-off point of the Kocaeli Short Screening Scale for Psychological Trauma were categorized as "at risk for PTSD."[18]

Statistical Analyses

The findings obtained in the study were evaluated, and SPSS version 29.0 software (IBM SPSS Corp.; Armonk, NY, USA) was used for statistical analysis. While evaluating the study data, quantitative variables were shown with mean, standard deviation, median, min, and max values and qualitative variables were shown with descriptive statistical methods such as frequency and percentage. Shapiro–Wilks test and Box Plot graphs were used to evaluate the suitability of the data for normal distribution. Student *t*-test was used to examine the 1.5-year change in AOAI scores according to descriptive characteristics, and repeated measures ANOVA test was used to examine the

1.5-year change in AOAI scores. Pearson or Spearman's correlation analysis was used to evaluate the relationships between variables according to the distribution; linear regression modeling was used in further evaluations.

RESULTS

Table 1 contains sociodemographic information of AUD participants who presented to YEDAM and were followed up for 24 sessions.

Table 2 shows the addiction and psychological characteristics of the participants who stayed in treatment for 1.5 years.

Table 3 shows that the change in the AOAI scores of the participants from the first session to the 24th session shows a statistically significant difference ($P=.001$). During the 1.5 year follow-up period, improvement was observed in the outcome of AUD of the participants.

Table 4 highlights the AOAI scores of the participants at the beginning and during the treatment program. When comparing participants whose relationship status with their partner as dysfunctional with those whose status was functional, those with dysfunctional relationships exhibited higher score changes ($P=.029$) in terms of their AOAI scores. Participants who described their physical health as impaired showed higher score changes in terms of AOAI scores compared to participants who described their physical health as unimpaired ($P=.007$). Participants identified as binge drinkers exhibited greater changes in AOAI scores ($P=.003$). Additionally, participants consuming more than 4 standard drinks per day had higher AOAI score changes ($P=.001$). Participants with a history of self-harm experienced more significant changes in AOAI scores compared to those without a history of self-harm ($P=.002$).

According to Figure 1, the change in AOAI scores from the first session to the 24th session shows a statistically significant difference ($P=.001$).

According to Figure 2, 11.7% of the participants had no alcohol use in the first session, 57% in the 12th session, and 58% in the 24th session. At the same time, while 49.5% of the participants had alcohol use almost every day in the first session, 8.1% in the 12th session, and 5.2% in the 24th session had alcohol use almost every day.

As seen in Table 5, a negative correlation was observed between the difference in AOAI scores from the first to the 24th session and various factors, including alcohol use characteristics ($r=-0.327$, $P=.001$), diagnosis of alcohol dependence ($r=-0.386$, $P=.001$), effects of alcohol use on life ($r=-0.362$, $P=.001$), craving ($r=-0.573$, $P=.001$), motivation to quit ($r=-0.249$, $P=.001$), API total score ($r=-0.548$, $P=.001$), depression ($r=-0.297$, $P=.001$), anxiety ($r=-0.302$, $P=.001$), difficulty with anger control ($r=-0.181$, $P<.001$), lack of assertiveness ($r=-0.205$, $P=.001$), and impulsivity ($r=-0.169$, $P=.003$).

According to Table 6, the explanatory coefficient of the model was 44.3%, and the model was statistically significant ($P=.001$). Participants who reported their relationship with their partner as dysfunctional had a 2.396-fold decrease in their final AOAI score compared to their initial AOAI score (95% CI: −4.389 to −0.404; $P=.019$). For each 1-unit increase in alcohol use characteristics scores, the final AOAI score decreased by 1.138 times compared to the initial AOAI score (95% CI: −1.739 to −0.613; $P=.001$). Similarly, each 1-unit

Table 1. Distribution of Sociodemographic and Clinical Characteristics of Participants at Baseline

		n	%
Gender	Men	255	83.1
	Women	52	16.9
Age	Mean ± SD	46.96 ± 11.48	
Early onset alcohol use	Mean ± SD	17.44 ± 5.88	
	≤14 age	63	20.5
	>14 age	244	79.5
Marital status	Married	150	48.9
	Single	157	51.1
Education	Low education	52	16.9
	Medium level	40	13.0
	Higher education	215	70.0
Employment status	Unemployment	208	67.8
	Employment	99	32.2
Dysfunctional relationship with the partner	No	265	86.3
	Yes	42	13.7
Dysfunctional relationship with his/her mother	No	283	92.2
	Yes	24	7.8
Dysfunctional relationship with his/her father	No	270	87.9
	Yes	37	12.1
Impaired physical health status	No	266	86.6
	Yes	41	13.4
Outpatient treatment history	No	177	57.7
	Yes	130	42.3
Inpatient treatment history	No	241	78.5
	Yes	66	21.5
Family history of alcoholism	No	134	43.6
	Yes	173	56.4
Previous alcohol treatment	No	151	49.2
	Yes	156	50.8
Use of substances other than alcohol in the last 1 year	No	240	78.2
	Yes	67	21.8
°Type of substance used in the last 1 year (other than alcohol)	Cannabis	48	15.6
	Use of non-prescription medicines	16	5.2
	Ecstasy	14	4.6
	Cocaine	11	3.6
	Methamphetamine	5	1.6
	Synthetic cannabinoid	5	1.6
	Inhalants	4	1.3
	Heroin	0	0.0
	Other (LSD, GHB, etc.)	1	0.3
Binge drinking	No	20	6.5
	Yes	287	93.5
Daily alcohol consumption >4 standard drink	No	42	13.7
	Yes	265	86.3
Self-harm history	No	223	72.6
	Yes	84	27.4
Suicide attempt	No	231	75.2
	Yes	76	24.8
PTSD risk	No	144	46.9
	Yes	163	53.1

Note. oMore than one option is selected; N=sample size; PTSD=Post Traumatic Stress Disorder.

Table 2. Distribution of Addiction Characteristics and Mental Health Characteristics in Follow-up Sessions

	Mean ± SD (n = 307)
API	
Alcohol use characteristics	2.46 ± 1.37
Dependency diagnosis	14.12 ± 6.09
The effect of alcohol use on the person's life	21.79 ± 8.42
Craving	9.82 ± 4.33
Motivation for quitting using alcohol	10.28 ± 2.31
Total score	11.64 ± 3.20
API-C	
Depression	3.53 ± 2.07
Men <2.5; women <3.5 point	121 (39.4)
Men >2.5; women >3.5 point	186 (60.6)
Anxiety	2.13 ± 1.57
Men <1.5; women <2.5 point	139 (45.3)
Men >1.5; women >2.5 point	168 (54.7)
Difficulty with anger control	2.42 ± 1.67
<1.5 point	100 (32.6)
>1.5 point	207 (67.4)
Lack of assertiveness	4.05 ± 2.43
Sensation-seeking behavior	1.37 ± 1.63
<3.5 point	140 (45.6)
>3.5 point	167 (54.4)
Impulsivity	2.89 ± 1.72

Note. API = Addiction Profile Index; API-C = Addiction Profile Index-Clinical Form; SD = Standard Deviation.

increase in alcohol craving scores decreased the final AOAI score by 0.928 times (95% CI: −1.115 to −0.741; $P = .001$). Additionally, each 1-unit increase in anxiety scores led to a decrease in the final AOAI score by 0.577 times (95% CI: −1.130 to 0.000; $P = .041$).

DISCUSSION

The findings of this study highlight significant similarities and differences when compared to previous research in literature and to the best of knowledge. This is the first retrospective cohort follow-up study examining the outcomes of AUD in Türkiye. In this context, the study aimed to evaluate the outcomes of AUD treatment and identify predictive factors among individuals with AUD. Family relationships, alcohol use characteristics, craving and anxiety are important variables predicting the outcome of AUD. At the same time, it was observed that the amount and frequency of alcohol use among the participants decreased during the 1.5 year follow-up. These results show that the YEDAM model is effective in the treatment of AUD.

It was observed that increased duration of sessions at YEDAM correlated with reductions in both alcohol use frequency and AOAI scores. The effectiveness of the treatment program at YEDAM is evidenced by the substantial reduction in addiction severity observed among participants. Attendance and active participation in treatment are critical determinants of positive treatment outcomes.[19,20] Early

Table 3. AOAI Scores of Participants at the Beginning and During the Treatment Program

AOAI	n	Mean ± SD	
First session	307	24.49 ± 6.88	
6 month	307	9.14 ± 5.64	
12 month	307	8.64 ± 5.53	
18 month	307	8.32 ± 5.52	
P			^{a}**.001****
AOAI score change			
6 month-first session	307	−15.35 ± 7.66	^{aa}**.001****
12 month-first session	307	−15.86 ± 8.12	^{aa}**.001****
18 month-first session	307	−16.17 ± 7.65	^{aa}**.001****

24 sessions last an average of 1.5 years.
^{a}Repeated measures test. ^{aa}Pairwise comparisons with Bonferroni correction.
AOAI = Addiction Outcome Assesment Index; N = Sample size.
SD=Standard deviation
$^{**}P < .01$.

intervention and counseling services addressing AUD have been associated with improved recovery outcomes and reduced alcohol consumption over periods of 6-12 months.[21] This finding aligns with previous research demonstrating that long-term treatment involving CBT and MET results in decreased alcohol consumption over a 1-year period.[20]

In a study, the factors predicting the outcomes of AUD treatment were determined as severity of addiction, level of psychopathology, perception of self-efficacy related to alcohol, motivation to quit, and treatment goal.[12] In this study, it was observed that participants with dysfunctional relationships with their partners, participants with impaired physical health, participants with high alcohol use, participants with high levels of anxiety, and participants with a craving to use more, recovered more. This result differs from some studies.[22-24] It suggests that this difference may be related to the fact that people with physical problems receive medical support during treatment. Additionally, one potential reason for this discrepancy may be related to the participants' reasons for seeking treatment. It can be argued that improvements in these motivations may have emerged alongside continued therapy sessions. Another possible reason why those in impaired physical health may have better treatment outcomes may be that the deterioration in their physical health motivates people to continue the program.

Another finding of the study was that participants with a dysfunctional relationship with their partner showed better treatment outcomes. In the literature, there are studies suggesting that the relationship with the partner both affects AUD and is affected by AUD.[22] Factors such as being single, male, under 40 years old, having a low income, experiencing co-occurring psychiatric disorders, and exhibiting a greater number of addiction symptoms are significant predictors in treatment-seeking behavior.[25] It can be thought that people who have dysfunctional relationships with their partners seek treatment insights and social support during the recovery process under different conditions. In order for this result to be consistent and meaningful, it is thought that it will be important to take these into consideration in future studies.

According to the API, alcohol use characteristics include the frequency of alcohol use, the presence of a different substance used, and the evaluation of the problems that alcohol use causes in a person's life.[16]

Table 4. Evaluation of AOAI Score Change According to Demographic and Mental Health Characteristics

		n	Mean ± SD	*P*
Gender	Men	255	−16.08 ± 7.70	b.635
	Women	52	−16.63 ± 7.44	
Marital status	Married	150	−16.05 ± 7.79	b.782
	Single	157	−16.29 ± 7.53	
Education	Low education	52	−16.63 ± 9.54	c.399
	Medium level	40	−17.49 ± 7.55	
	Higher education	215	−15.82 ± 7.15	
Employment status	Unemployment	208	−16.14 ± 7.63	b.920
	Employment	99	−16.24 ± 7.73	
Dysfunctional with the partner	No	265	−15.71 ± 7.28	**b.029***
	Yes	42	−19.07 ± 9.24	
Dysfunctional relationship with his/her mother	No	283	−16.09 ± 7.58	b.516
	Yes	24	−17.15 ± 8.55	
Dysfunctional relationship with his/her father	No	270	−15.99 ± 7.73	b.249
	Yes	37	−17.53 ± 7.00	
Impaired physical health status	No	266	−15.71 ± 7.49	**b.007****
	Yes	41	−19.15 ± 8.10	
Previous alcohol treatment	No	151	−15.62 ± 7.43	b.211
	Yes	156	−16.71 ± 7.84	
Family history of alcoholism	No	134	−16.38 ± 8.06	b.671
	Yes	173	−16.01 ± 7.34	
Use of substances other than alcohol in the last 1 year	No	240	−15.79 ± 7.72	b.099
	Yes	67	−17.53 ± 7.27	
Age started drinking alcohol	≤14 yaş	63	−16.28 ± 7.28	b.897
	>14 yaş	244	−16.14 ± 7.75	
Binge drinking	No	20	−11.29 ± 6.87	**b.003****
	Yes	287	−16.51 ± 7.59	
Daily alcohol consumption >4 standard drink	No	42	−12.32 ± 5.95	**b<.001****
	Yes	265	−16.78 ± 7.72	
Self-harm history	No	223	−15.35 ± 7.49	**b.002****
	Yes	84	−18.35 ± 7.67	
Suicide attempt	No	231	−15.88 ± 7.47	b.251
	Yes	76	−17.05 ± 8.15	
PTSD risk	No	144	−16.22 ± 7.63	b.918
	Yes	163	−16.13 ± 7.69	

Note. AOAI = Addiction Outcome Assesment Index; PTSD = Post Traumatic Stress Disorder; N = Sample size; SD = Standard deviation.
bStudent t-test.
cOne-way ANOVA test.
*$P < .05$.
**$P < .01$.

In the current study, it was observed that high scores on alcohol use characteristics positively affected the outcome of treatment. In this regard, it can be thought that the negative life symptoms of individuals with AUD increase treatment motivation and the fact that their usage characteristics have been studied in therapy sessions affects the outcome. On the other hand, the results of a systematic review study investigating the factors that predict relapse in AUD include the accompanying use of a different substance and the problems they experience in their lives due to AUD.[26] In this study, it was observed that there were relapses during the 1.5-year follow-up, and alcohol use characteristics are thought to be among the reasons for this, and it is thought that it should be addressed in future studies.

Craving for alcohol use is an important factor affecting the outcome of treatment. In the current study, it was found that high craving at the first session was associated with a decrease in the level of alcohol use at the end of 24 sessions. However, in contrast to the current study, there are findings in the literature that high craving for alcohol use results in more alcohol use[27] and increases relapse.[12] Since studies were conducted to cope with the craving to consume alcohol in the sessions held at YEDAM, this difference may indicate that the participants can cope with alcohol craving when they experience cravings.

Motivation for treatment is a critical factor in initiating and maintaining engagement in the treatment process and achieving reductions

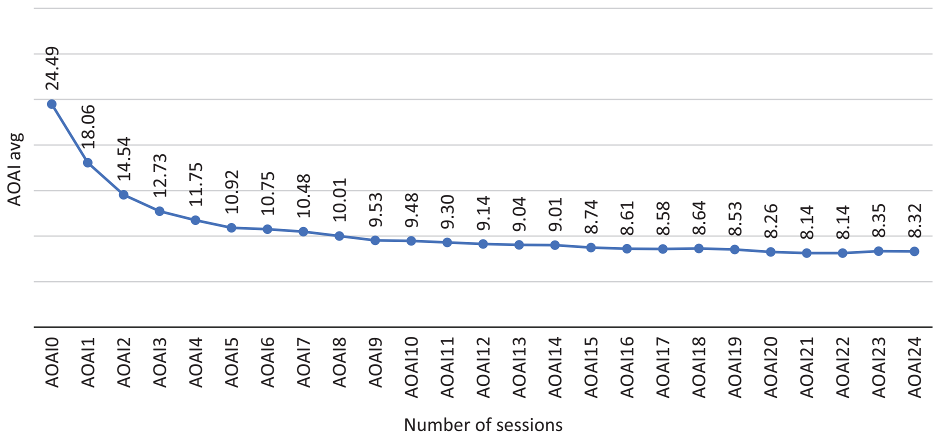

Figure 1. Outcome of participants' AOAI score averages throughout the treatment program (Note. AOAI = Addiction Outcome Assesment Index).

in alcohol consumption.[28] However, premature discontinuation of addiction treatment is common and often leads to relapse. The findings highlight the significance of demographic and social factors in maintaining treatment adherence, reinforcing previous observations that treatment retention is crucial for successful outcomes.[19]

Moreover, comorbid mental disorders significantly influence the treatment outcome and severity of AUD. The findings of the study are consistent with the literature showing that comorbid conditions such as anxiety play an important role in the outcome of AUD.[29,30] The current study supports this with a significant association between self-harming behaviors and treatment outcomes. The link between AUD and self-harm, including the risk of suicide, underscores the importance of ongoing research and intervention for individuals at risk of self-harm.[31] This underscores the necessity of integrating the monitoring and treatment of comorbidities into AUD treatment programs to enhance overall effectiveness. It is thought that the development of self-harm reduction strategies will be supportive when integrated into treatment programs.

This study was conducted with a large and diverse sample of participants recruited from 81 cities in Türkiye, increasing the generalizability and robustness of the findings. The demographic, cultural, and geographic diversity of the participants allows for a more nuanced interpretation of the results, providing a solid foundation for comparative analyses in future research and contributing to the advancement of knowledge in this field. Additionally, the study's approximately 1.5-year follow-up period, large sample size, and extended observation duration allowed for a comprehensive examination of the progression of AUD treatment and its impacts over time. However, the distribution of participants by gender is uneven, potentially due to the unique challenges faced by women prior to and during the treatment process. Studies investigating the relationship between gender and AUD show that alcohol use among women has increased in recent years.[15] Gender differences are more pronounced in terms of help-seeking, with women having lower rates of help-seeking than men.[32] Further studies on gender and AUD in Türkiye will reveal these differences and provide deeper insights.

Overall, while improvements in alcohol use levels and addiction progression were observed, some periods showed increases. Despite a general reduction in use, about 5% of participants continued to use alcohol nearly every day. Evaluating these increases and identifying

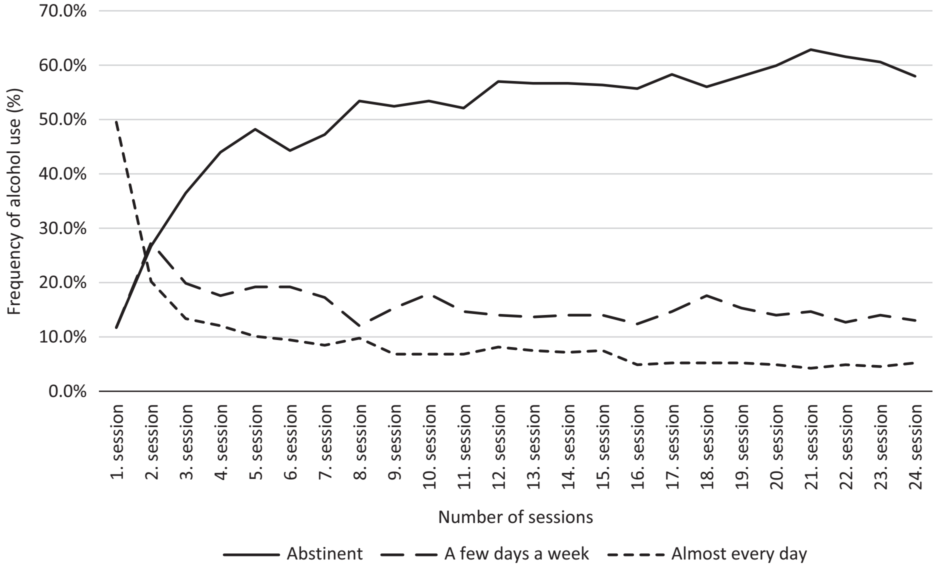

Figure 2. Frequency of alcohol use according to sessions.

Table 5. Relationship Between Change in AOAI and Addiction Characteristics and Mental Health Characteristics

	AOAI24-AOAI0	
	r	*P*
Age	−0.032¥	.575
API		
Alcohol use characteristics	−0.327ı	**.001****
Dependency diagnosis	−0.386¥	**.001****
The effect of alcohol use on the person's life	−0.362¥	**.001****
Craving	−0.573ı	**.001****
Motivation for quitting using alcohol	−0.249ı	**.001****
Total score	−0.548ı	**.001****
API-C		
Depression	−0.297¥	**.001****
Anxiety	−0.302ı	**.001****
Difficulty with anger control	−0.181¥	**.001****
Lack of assertiveness	−0.205¥	**.001****
Sensation-seeking behavior	−0.079ı	.165
Impulsivity	−0.169¥	**.003****

Note. AOAI = Addiction Outcome Assesment Index, API = Addiction Profile Index; API-C = Addiction Profile Index-Clinical Form
¥Pearson correlation co-efficient.
ıSpearman correlation co-efficient.
**P* < .05.
***P* < .01.

the factors influencing relapse will be crucial for developing effective treatment programs. Data on alcohol use during the treatment process were obtained via self-report, without the use of corroborative testing. Previous studies have found high concordance and validity between self-reported alcohol use and urine analysis.[33] Future research might benefit from incorporating both self-report and objective measures to enhance the accuracy and reliability of findings. The study involved participants who underwent sessions over a period of approximately 1.5 years. Longer-term studies could offer a more comprehensive understanding of the severity and progression of addiction. The factors leading to treatment seeking and their impact on AUD were examined using the YEDAM model over this 1.5-year period, with improvements in recovery potentially linked to symptom reduction. A limitation, however, is that mental disorder scales used in assessment sessions were not re-administered in subsequent sessions.

In conclusion, with the increase in risky alcohol use around the world, the risk of AUD is becoming more prevalent. It is thought that it is important to increase studies on treatment and predictive factors as AUD increases. In this retrospective cohort follow-up study, a decrease in alcohol use was observed in participants who started and continued treatment for AUD. At the same time, family relationships, alcohol use characteristics, craving and anxiety are important variables predicting the outcome of AUD. These results show that the YEDAM model is effective in the treatment of AUD. The study will provide insight into the factors that cause a negative prognosis in the outcome of AUD treatment and will contribute to studies aimed at increasing the effectiveness of the YEDAM model. The findings may also guide the development of effective treatment programs for AUD.

Table 6. Linear Regression Analysis to Determine the Factors Predicting the Change in AOAI Score at the End of the Treatment Program

	Unstd Coefficient		Standard Coefficient			95% CI for B	
	B	Standard Error	Beta	*t*	Sig.	Lower Bound	Upper Bound
Constant	−1.955	2.069		−0.945	.346	−6.027	2.117
Dysfunctional relationship with the partner	−2.396	1.012	−0.108	−2.367	**.019***	−4.389	−0.404
Impaired physical health status	−1.731	1.040	−0.077	−1.664	.097	−3.779	0.316
Use of substances other than alcohol in the last 1 year	0.009	0.884	0.000	0.010	.992	−1.732	1.750
Binge drinking	1.133	1.539	0.037	0.737	.462	−1.895	4.162
Daily Alcohol consumption >4 standard drink	−1.535	1.102	−0.069	−1.393	.165	−3.703	0.633
Self-harm history	−0.431	0.843	−0.025	−0.511	.610	−2.090	1.229
Alcohol use characteristics	−1.138	0.287	−0.203	−3.963	**<.001****	−1.703	−0.573
Dependency diagnosis	0.105	0.092	0.084	1.143	.254	−0.076	0.286
The effect of alcohol use on the person's life	−0.043	0.062	−0.047	−0.691	.490	−0.164	0.079
Craving	−0.928	0.095	−0.526	−9.773	**<.001****	−1.115	−0.741
Motivation for quitting using alcohol	−0.084	0.168	−0.025	−0.499	.618	−0.414	0.246
Depression	−0.055	0.217	−0.015	−0.255	.799	−0.482	0.371
Anxiety	−0.577	0.281	−0.118	−2.057	**.041***	−1.130	−0.025
Difficulty with anger control	−0.052	0.230	−0.011	−0.226	.821	−0.506	0.401
Lack of assertiveness	−0.128	0.154	−0.041	−0.830	.407	−0.432	0.176
Sensation-seeking behavior	0.144	0.227	0.031	0.636	.526	−0.303	0.592
Impulsivity	0.282	0.236	0.063	1.193	.234	−0.183	0.746

Linear regression analysis with enter method.
Dependent variable AOAI24-AOAI0 AOAI = Addiction Outcome Assesment Index.
**P* < .05.
***P* < .01.

Availability of Data and Materials: The data that support the findings of this study are available upon request from the corresponding author.

Ethics Committee Approval: Ethical approval was received from the Ethics Committee of İstanbul Kent University (Approval no: 2024-05; Date: March 8, 2024).

Informed Consent: Written informed consent was obtained from the participants who agreed to take part in the study.

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