

Life Chart of Substance Use Career: A Clinical Profile Study from Turkey

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ABSTRACT

Background: The “career approach,” developed to understand substance use and treatment, is important because it can broadly encompass the complexity of addiction patterns and help to better illustrate the chronic and recurrent nature, correlations, and consequences of addiction. The current study aimed to examine the substance use career and patterns of patients diagnosed with substance use disorder.

Methods: The authors created a questionnaire that included questions inquiring at what age several substance use-related life events occurred. The Addiction Profile Index was used to collect sociodemographic data and measure substance use disorder severity. Descriptive statistics and group comparisons were conducted to evaluate the data.

Results: Of the cases (n=400), 72.7% began using substances before the age of 18, but only 12.4% (n=68) sought treatment by that age. There were approximately 8 years between starting substance use and seeking treatment. Substance use was noticed by the family approximately 5 years after it started. There was a difference between males and females in terms of the age of experiencing adverse life events due to substance use, with females being earlier ($P=.030$). Similarly, individuals with opioid use disorder experienced adverse life events due to substance use at an earlier age than the non-opioid group ($P=.001$).

Conclusion: Identifying patient characteristics associated with the course of use in people who use different substances of choice and examining the differences in lifelong substance use patterns among these groups will help develop targeted treatment services and policies.

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INTRODUCTION

A career is defined as a process in which substance use “often escalates to more severe levels with repeated cycles of withdrawal and relapse over a long period of time” and must be examined with a “longitudinal and dynamic approach.” The “career approach,” developed to understand substance use and treatment, is important because it can broadly encompass the complexity of addiction patterns and help to illustrate better the chronic and recurrent nature, correlations, and consequences of addiction.¹ In the “career approach,” the following questions are asked to understand the addiction development process: Does the age of onset of substance use change according to the substance type? What is the time between the first substance use and treatment? What is the form of treatment over time? What is the relationship between treatment and addiction career characteristics?² Because the characteristics of people with substance use are heterogeneous and no single type of treatment is

effective for all, a good understanding of addiction and treatment career patterns for individuals with different career characteristics is important for improving treatment policies, clinical practice, and outcomes.

Epidemiological and clinical studies conducted to understand these processes better have revealed that adolescents who start substance use at an early age typically use substances more frequently, reach higher levels of use more quickly, and are more likely to continue using them into adulthood.^{3,4} Early substance use (especially under the age of 15 years) has been associated with higher rates of addiction symptoms, development of polysubstance use, and other psychiatric problems.^{3,5} Studies have also reported that starting substance use at an early age is a predictor of psychiatric problems related to substance use.⁶ In addition, psychiatric problems encountered during the addiction process have been found to be associated with higher severity of substance use, a need for more

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intensive treatment, lower participation in treatment, and worse outcomes.^{7,8} On the other hand, substance use careers can differ according to gender. Studies have revealed that starting substance use, substance use habits, criminal activity, and seeking treatment differ according to gender.⁹⁻¹² It has been reported that the male gender is a risk factor for a long-term substance use career.¹³ Some studies have shown that women start to use alcohol and other substances at a later age than men, apply for treatment soon after transitioning to regular use,¹⁰ and respond better to treatment.¹⁴

To the best of our knowledge, there is no study examining substance use patterns from early adolescence to adulthood in Turkey. Similarly, there are no studies investigating gender differences in the developmental patterns of substance use from early adolescence to young adulthood. Comparing the developmental processes of different substance use behaviors and examining gender differences in these processes can provide insight into critical periods and thus help identify target populations for prevention and intervention programs. Therefore, this study aimed to examine the substance use career and patterns of patients diagnosed with substance use disorder in Turkey. We believe that our research will contribute to meeting the needs in this direction.

MATERIALS AND METHODS

Participants

The current study included 550 individuals who were recruited from 2 centers between May and November 2022: an inpatient unit of a psychiatric hospital and a counseling center of Green Crescent, a non-profit and non-governmental organization against alcohol/substance use and behavioral addictions. Of the sample ($n=197$), 35.8% consisted of outpatients recruited from the counseling center. Consecutive patients with a diagnosis of substance use disorder and aged between 18 and 65 years were included in the study. Those who could not answer the questions because of withdrawal symptoms ($n=21$), those who did not wish to fill out the clinical interview form ($n=8$), or those who could not fill out the form because of intellectual disability or severe psychiatric disorders ($n=4$)

were excluded from the evaluation. The study protocol was approved by Istanbul Kent University Social, and Human Sciences Ethics Committee on Research and Publication (Date: 27.04.2022; No:05), and written informed consent was obtained from all participants.

Tools

A question form created by the authors was used in the study. The form included questions inquiring at what age several life events related to substance use occurred. In the form, the time of substance use and regular substance use for the first time, the substance of choice and its first regular use, the first “hard drug” use, daytime substance use, deterioration in education, self-harming behavior, receiving psychological treatment, family awareness and problems with family, experiencing substance-related problems, intravenous use, probation and imprisonment, the first treatment and the first inpatient treatment, admission to the emergency department, use of substitution treatment, and the age during the longest abstinence time were questioned. The use of heroin, cocaine, methamphetamine, and crack was accepted as a “hard drug.” The form was applied to 10 outpatients with substance use disorder to check its validity, and the final document was created. The percentage of individuals who experienced particular life events up to 14 years old (i.e., early or pre-adolescence), between 14 and 18 years old (adolescence), between 18 and 21 years old (late adolescence), and 25 years old (which is an age until the majority of participants reported their first drug use) were calculated.

The Addiction Profile Index

The Addiction Profile Index (API) is a 37-question scale developed by Ögel et al¹⁵ to assess addiction severity. Responses are evaluated on a 5-point Likert-type scale scored between 0 and 4 points. The scale comprises 5 subscales, including characteristics of substance use, substance use disorder diagnostic criteria, the effects of substance use on the patient’s life, craving, and motivation to quit using substances. The subscale scores are evaluated separately, and the scale’s total score is obtained by weighting the subscales. The Cronbach’s alpha coefficient of the whole scale was 0.89, and those of the subscales were found to be 0.63-0.86.

The sociodemographic data were collected through an additional form whose validity and reliability studies were conducted using the API software form.¹⁵

Application

The scales were applied face-to-face by expert psychologists working in the field. Since the questions were asked retrospectively, some participants could not remember their exact age at the time of a life event. When the person was unsure or could not remember the

MAIN POINTS

- Of the cases, 72.7% began using substances before the age of 18, but only 12.4% sought treatment by that age.
- There were nearly 8 years between starting substance use and seeking treatment.
- Substance use was noticed by the family approximately 5 years after it started.
- Women had adverse life events at an earlier age, and they were more severe than men.
- Individuals with opioid use experienced adverse life events at an earlier age.

age at which a life event occurred, that finding was not included in the data. Information regarding the substance of choice was based on the patient statement; no urine toxicology was performed for this purpose.

Statistical Analysis

Descriptive statistics were given with mean $\pm$ SD and median (Q1-Q3) for the continuous variables and with percentages and frequencies for categorical variables. Two-group comparisons were made using the independent *t*-test for normally distributed variables and the Mann-Whitney *U*-test for non-normally distributed variables. Therefore, the independent sample *t*-test was used when comparing treatment type groups and substance of choice groups, and the Mann-Whitney *U*-test was used when comparing based on gender. The statistical significance level was set at $P < .05$. Statistical analyses were performed using the Statistical Package for Social Sciences program version 21.0 (IBM SPSS Corp.; Armonk, NY, USA).

RESULTS

The sociodemographic characteristics of the sample are shown in Table 1. Of the participants, 93.3% were male ($n=513$) and 66.2% were single ($n=364$). The mean age was 29.4 ± 6.66 years. The lowest age was 17, and the highest was 62. Of the sample ($n=533$), 98.2% stated that they lived in a house, 33.5% ($n=184$) stated that their economic situation was good, and 33.9% ($n=185$) indicated they were unemployed.

Among participants, 58.4% ($n=319$) stated heroin, 13.9% ($n=76$) methamphetamine, 8.4% ($n=46$) marijuana ($n=46$), 7.1% ($n=39$) synthetic cannabinoids, 4.2% ($n=23$) cocaine, and 7.9% ($n=43$) other substances as the substance of choice. The mean longest abstinence time was 311.09 ± 426.20 days.

There was no statistically significant difference in the severity of addiction regarding gender and treatment type. The mean API score was 2.71 ± 0.62 for males, whereas it was 2.50 ± 0.86 for females ($P=.237$). The mean API score was 2.70 ± 0.74 for inpatients, whereas it was 2.69 ± 0.57 for outpatients ($P=.092$). The mean API score was 2.90 ± 0.57 for those whose substance of choice was opiates, whereas it was 2.55 ± 0.70 for those whose substance of choice was non-opiate, and the difference was statistically significant ($P=.015$).

The sociodemographic characteristics of the sample are presented in Table 1. The order of the mean age of onset of life events is given in Figure 1. Deterioration in education and first-time substance use were observed to have occurred at similar ages. It is noteworthy that self-harming behavior and regular substance use were started later. A psychiatric treatment attempt followed this. It was noted that after daytime drug use began, they started using the first "hard drug" and the substance of choice.

Table 1. Sociodemographic Characteristics of the Sample

	n	Mean $\pm$ SD
Age	550	29.40 $\pm$ 6.66
	n	%
Gender		
Female	37	6.7
Male	513	93.3
Education level		
Never been to school	4	0.7
Completed primary education	301	54.7
Graduated from high school	183	33.3
Graduated from university	62	11.3
Marital status		
Married	147	26.7
Single	364	66.2
Others	39	7.1
Accommodation status		
In a residence	533	98.2
In an institution	6	1.1
In an inappropriate environment	4	0.7
Economic situation		
Very good	185	33.9
Medium	268	49.6
Poor	89	16.5
Employment status		
Employed	342	63.1
Retired, student, housewife, and so on	16	3.0
Unemployed	184	33.9

n, sample size.

At the same age, the family noticed that the person was using substances. Subsequently, there was a period of experiencing problems related to family and substance use. The initiation of intravenous use and imprisonment, if any, were around similar ages. It is also noteworthy that probation, first treatment, admission to the emergency department, and the longest abstinence were at similar ages.

The rates of life events up to 14, 18, 21, and 25 years of age are given in Table 2. It was seen that 27.8% of them started substance use for the first time until 14, 75.2% started to use substances regularly until 21, and 56.9% started using the substance of choice regularly until 21. The rate of those whose families noticed substance use until 21 was 56%, and the rate of those who started to receive treatment for the first time was 28.7%. The rate of those who received treatment for the first time until 18 was 12.4%.

The difference between the median age when they started substance use for the first time and the median age when the family noticed substance use was 6 years,

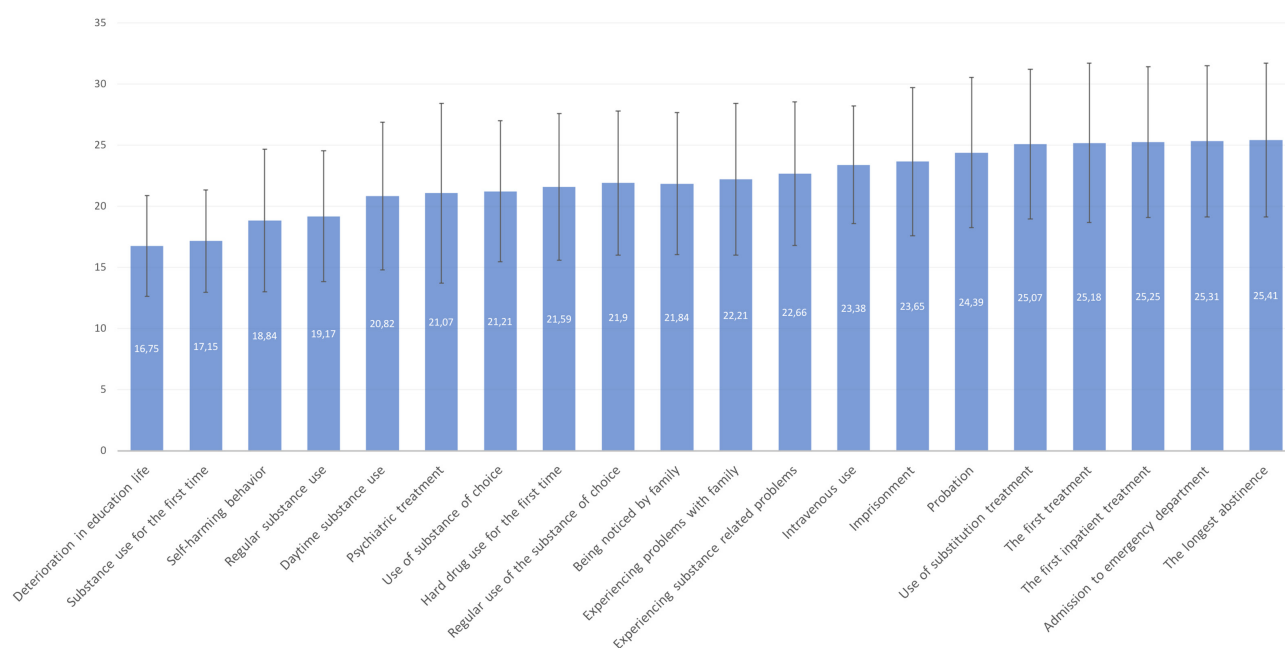


Figure 1. The mean age of onset of life events.

Table 2. Mean Ages at the Time when Life Events Occurred and the Rates of Life Events up to 14, 18, 21, and 25 Years of Age

	n	Up to the Age of 14 (%)	Up to the Age of 18 (%)	Up to the Age of 21 (%)	Up to the Age of 25 (%)	Mean $\pm$ SD
The age when a substance was used for the first time	550	27.8	72.7	88.0	95.5	17.15 $\pm$ 4.38
The age when regular substance use was started	544	15.4	56.1	75.2	88.8	19.17 $\pm$ 5.35
The age when the substance of choice was used for the first time	549	5.5	36.8	61.9	81.8	21.21 $\pm$ 5.77
The age when the substance of choice was first used regularly	547	3.3	31.3	56.9	77.9	21.90 $\pm$ 5.90
The age at the first psychiatric treatment	160	18.8	34.4	51.3	74.4	21.07 $\pm$ 7.36
The age when substance use was first noticed by the family	534	5.4	31.3	56.0	78.4	21.84 $\pm$ 5.82
The age when problems related to substance use were started	528	3.4	25.8	49.6	73.7	22.66 $\pm$ 5.87
The age at first hard drug use	481	5.0	35.6	59.5	80.7	21.59 $\pm$ 5.99
The age at the longest abstinence time	486	0.8	9.1	27.0	59.5	25.41 $\pm$ 6.29
The age at starting a treatment for the first time	502	1.4	12.4	28.7	60.2	25.18 $\pm$ 6.53
The age at an inpatient treatment for the first time	372	0.8	10.5	26.9	59.7	25.25 $\pm$ 6.17
The age at the admission to an emergency department for the first time	121	1.7	9.1	28.9	54.5	25.31 $\pm$ 6.19
The age on probation for the first time	260	0.8	15.4	31.5	65.4	24.39 $\pm$ 6.13
The first imprisonment	153	0.7	19.6	39.2	70.6	23.65 $\pm$ 6.05
Starting to have serious problems with the family	429	6.1	31.0	49.9	74.1	22.21 $\pm$ 6.20
Starting intravenous use	110	2.7	12.7	37.3	76.4	23.38 $\pm$ 4.82
Starting to use substitution therapy	267	1.1	12.7	27.0	61.4	25.07 $\pm$ 6.13
Starting to use substances during the daytime	529	10.6	41.0	62.8	81.7	20.82 $\pm$ 6.03
The age when self-harming behavior occurred	211	17.5	59.7	77.7	89.6	18.84 $\pm$ 5.83
The age when there was a serious deterioration in education	331	29.9	76.1	87.6	97.0	16.75 $\pm$ 4.13

n, sample size.

Table 3. Distributions by Gender, Treatment Type, and Substance of Choice

	Gender			Type of Treatment				Substance of Choice					
	Female (n = 37)		n	Male (n = 513)		Outpatient (n = 197)		Inpatient (n = 353)		Non-opioid (n = 231)		Opioid (n = 319)	
	n	Median (Q1-Q3)		n	Median (Q1-Q3)	n	Mean ± SD	n	Mean ± SD	n	Mean ± SD	n	Mean ± SD
The age when a substance was used for the first time	37	17.0 (14.5-18.5)	513	16.0 (14.0-19.0)	197	17.57 ± 4.64	353	16.92 ± 4.21	227	17.93 ± 4.59	319	16.61 ± 4.14	
The age when regular substance use was started	37	18.0 (15.5-22.0)	507	18.0 (16.0-21.0)	195	19.84 ± 5.72	349	18.80 ± 5.09	224	20.58 ± 5.77	316	18.16 ± 4.75	
The age when the substance of choice was used for the first time	37	19.0 (16.0-23.5)	512	20.0 (17.0-24.0)	197	21.73 ± 6.59	352	20.93 ± 5.25	227	22.44 ± 6.71	319	20.38 ± 4.82	
The age when the substance of choice was first used regularly	37	19.0 (16.0-23.5)	510	20.0 (18.0-25.0)	196	22.69 ± 6.74	351	21.46 ± 5.33	225	23.61 ± 6.68	318	20.72 ± 4.91	
The age at the first psychiatric treatment	25	16.0 (14.0-22.5)	135	22.0 (17.0-26.0)	84	21.73 ± 7.37	76	20.34 ± 7.32	102	20.73 ± 7.44	54	22.13 ± 7.06	
The age when substance use was first noticed by the family	33	20.0 (16.5-24.5)	501	21.0 (18.0-25.0)	188	21.93 ± 5.95	346	21.79 ± 5.75	214	22.42 ± 6.19	317	21.49 ± 5.51	
The age when problems related to substance use were started	36	19.5 (16.3-24.0)	492	22.0 (19.0-26.0)	193	23.11 ± 6.23	335	22.40 ± 5.64	212	24.09 ± 6.35	312	21.69 ± 5.28	
The age at first hard drug use	33	18 (17.0-23.5)	448	20.0 (18.0-24.0)	139	22.99 ± 7.27	342	21.03 ± 5.30	163	24.31 ± 7.20	315	20.23 ± 4.71	
The age at the longest abstinence time	34	22.0 (18.0-29.0)	452	24.0 (21.0-28.0)	189	26.24 ± 7.24	297	24.87 ± 5.54	210	26.75 ± 7.43	273	24.43 ± 5.02	
The age at starting a treatment for the first time	35	21.0 (17.0-25.0)	467	24.0 (21.0-28.0)	177	25.77 ± 7.39	325	24.86 ± 6.00	202	26.62 ± 7.31	297	24.17 ± 5.57	
The age at an inpatient treatment for the first time	28	22.0 (17.3-26.0)	344	24.0 (21.0-28.0)	66	24.80 ± 6.74	306	25.35 ± 6.05	97	26.88 ± 6.98	272	24.61 ± 5.46	
The age at the admission to an emergency department for the first time	11	20.0 (17.0-26.0)	110	24.5 (21.0-29.3)	54	24.85 ± 5.93	67	25.69 ± 6.41	58	25.55 ± 6.69	59	25.36 ± 5.62	
The age on probation for the first time	8	22.5 (18.3-30.8)	252	24.0 (21.0-27.0)	89	25.33 ± 7.54	171	23.91 ± 5.21	88	24.92 ± 6.71	170	24.23 ± 5.76	
The first imprisonment	3	26.0 (18.0-38.0)	150	23.0 (19.8-26.0)	49	24.98 ± 7.68	104	23.03 ± 5.03	55	23.44 ± 6.30	95	24.02 ± 5.86	
Starting to have serious problems with the family	28	17.0 (16.0-22.8)	401	22.0 (18.0-26.0)	165	22.51 ± 6.67	264	22.02 ± 5.89	176	23.05 ± 6.93	250	21.62 ± 5.54	
Starting intravenous use	8	19.5 (17.5-22.5)	102	23.0 (20.0-26.0)	20	23.80 ± 5.29	90	23.29 ± 4.74	11	24.18 ± 6.08	97	23.44 ± 4.62	
Starting to use substitution therapy	18	22.5 (18.0-25.5)	249	24.0 (21.0-28.0)	57	26.25 ± 7.96	210	24.76 ± 5.51	45	26.58 ± 7.65	219	24.85 ± 5.72	
Starting to use substances during the daytime	34	18.0 (16.0-23.3)	495	19.0 (17.0-24.0)	189	21.83 ± 6.69	340	20.26 ± 5.56	211	22.64 ± 6.73	314	19.59 ± 5.16	
The age when self-harming behavior occurred	17	16.0 (15.0-20.0)	194	18.0 (15.0-21.-0)	71	18.24 ± 4.85	140	19.14 ± 6.26	81	18.91 ± 5.98	128	18.94 ± 5.67	
The age when there was a serious deterioration in education	25	17.0 (14.5-22.0)	306	16.0 (14.0-18.0)	117	16.49 ± 3.59	214	16.90 ± 4.40	118	17.19 ± 4.90	209	16.56 ± 3.59	

n, sample size.

whereas the difference between the median age when they started using the substance of choice regularly and the median age when the family noticed it was 1 year. The difference between the median age when the family noticed substance use and the median age of the first treatment was 4.

The distribution by gender and the type of treatment is shown in Table 3. When comparing life events in terms of gender, in women, age at onset of using the substance of choice ($U=76035$; $P=.040$), age of receiving psychiatric treatment ($U=1120.5$; $P=.008$), age of experiencing substance use-related problems ($U=7033$; $P=.030$), age of longest abstinence ($U=6087$; $P=.040$), age of receiving treatment ($U=5503$; $P=.001$) and inpatient treatment for the first time ($U=3462$; $P=.010$), age of first admission to the emergency department ($U=377$; $P=.030$), and age of onset of serious difficulties with the family ($U=3979$; $P=.010$) were lower than that in men. The remaining comparisons did not yield a statistically significant difference ($P > .05$).

When the outpatient and the inpatient groups were compared, the mean age of starting regular substance use ($t=2.18$; $P=.020$), the mean age at regular use of the substance of choice ($t=2.33$; $P=.020$), and the mean age of first “hard drug” use ($t=3.27$; $P < .001$) in the outpatient group were higher than in the inpatient group. In other words, participants who began to use substances earlier needed hospitalization. Similarly, in the outpatient group, the mean age when they had the longest abstinence ($t=2.35$; $P=.010$) and age at starting daytime substance use ($t=2.87$; $P=.004$) were higher than in the inpatient group. In other words, inpatients had longer abstinence and switched to daytime use later than outpatients. Other comparisons were not statistically significant ($P > .05$).

In patients whose substance of choice was opioids, age at the first substance use ($t=3.50$; $P < .001$) and regular substance use ($t=5.31$; $P < .001$), age at the use of the substance of choice for the first time ($t=4.17$; $P < .001$) and age at the onset of its regular use ($t=5.80$; $P < .001$), age of having substance use-related problems ($t=4.70$; $P < .001$), age of starting to use “hard drugs” ($t=7.42$; $P < .001$), age of the longest abstinence ($t=4.08$; $P < .001$), age at the first treatment ($t=4.24$; $P < .001$), age at the first inpatient treatment ($t=3.24$; $P=.010$), age at the onset of serious problems with the family ($t=2.35$; $P=.020$), and age at starting daytime substance use ($t=5.84$; $P < .001$) were lower than that in patients whose substance of choice was non-opioids. Other comparisons did not produce statistically significant differences ($P > .05$).

DISCUSSION

It has been emphasized that “substance use career” approaches are essential to understanding the initiation of

substance use, its progression, development of addiction, quitting, and recovery process in people with substance use disorder.^{2,16-18} Examining the factors affecting the substance use career and its associated outcomes are of particular interest as they may have important implications for developing treatment methods and policies.

It is noteworthy that nearly three-quarters of the patients started using substances before the age of 18 years. This finding is similar to the findings of other studies.¹⁹ However, only 12.4% started treatment before the age of 18. This finding suggests the necessity of increasing the treatment options for adolescents. In a meta-analysis of 192 epidemiological studies conducted by Solimi et al.,²⁰ it has been reported that 2.9% of the participants were diagnosed with substance use disorder before the age of 14, 15.2% before the age of 18, 48.8% before the age of 25, and the peak age was 19.5 years. In addition, it has been reported that 8.2% had the first symptoms before the age of 14, 39.1% before the age of 18, and 78.4% before the age of 25, the peak age was 15.5 years, and the difference between the medians for the first symptoms and the first diagnosis was 9 years. On the contrary, although there was no difference in the age of onset between men and women, it was found that men tended to start substance use earlier (median of 4 years). In the same article, the authors emphasized the importance of prevention studies and early intervention at the onset of or before mental illness developed. Individuals who start substance use before high school are more susceptible to substance-related problems later in life than those who start using substances in high school or college.

Considering that the age of first substance use was 16 years and the age to apply for first treatment was 24 years, there were approximately 8 years between the age of first substance use and the age of seeking treatment. Studies have reported that the average time between the initiation of substance use and the first admission to treatment was approximately 5-10 years for various types of substances.^{16,18} In another longitudinal study conducted with 1271 individuals, the median estimated time from the first use to at least 1-year abstinence was 27 years, and the median estimated time from starting treatment to at least 1-year abstinence was 9 years.¹³ Early treatment and ensuring integrity in treatment have been shown to be important factors in the healing process.^{21,22} Therefore, implementing policies to facilitate access to treatment early on and expand treatment services is of great importance.

It is expected that deterioration in education and substance use occur around the same age. A similar situation has been found in the literature.²³ In a study, it was reported that while there was a relationship between academic achievement and substance use in girls, there was no relationship in boys.²⁴ We believe that the deterioration of education life can be accepted as an important indicator of

substance use and prevention will be especially beneficial for these groups. In addition, self-harming behavior was observed as a problem that emerged after starting regular substance use. Several studies have shown that there is a relationship between self-harming behavior and substance use.^{25,26} Pattison and Kahan²⁷ suggested that alcohol substance use is the most important predisposing factor in intentional self-harming behavior.

After starting to use the substance of choice regularly, daytime substance use, and using “hard drugs,” the family realizes that the person has started using substances. It is important to note that there is a psychiatric treatment attempt just before the family notices it. It is an expected situation to have psychiatric problems accompanying substance use. Based on this finding, it can be argued that the family first notices mental health problems but is not aware of substance use. Studies have shown that the majority of individuals seeking treatment have comorbid mental disorders, most commonly mood or anxiety disorders.²⁸ Individuals with substance use who have comorbid disorders have higher rates of seeking treatment than those without them and typically seek treatment in a variety of settings, including substance use treatment, mental health services, social services, and primary care.²⁹ In her study involving people with comorbid disorder, Grella⁸ found that even if patients started regular substance use 6 years before starting psychiatric treatment, starting mental health treatment was approximately 10 years before starting substance treatment.

Substance use is noticed by the family approximately 5 years after it starts. The rate of being noticed by the family until the age of 21 was 56%. It can be said that these findings indicate that families have low awareness of substance use or that family-child communication is insufficient in these populations. Specifically, it has been reported that emotional bonds with parents, parents' being sensitive and supportive, and family cohesion are factors that prevent substance use in adolescents.^{30,31}

The ages of starting intravenous use, having legal problems, applying to the emergency room, and applying for treatment were similar. This finding demonstrates that there is a need for treatment when the problems increase. Weisner and Matzger³² reported that individuals with substance use disorders do not seek treatment until their problems become serious or they experience social or legal problems. In our study, the age of the longest abstinence was the same as that of starting the first treatment. This finding shows that starting treatment is an important factor in quitting. In other studies, it has been shown that there was at least 1 year of abstinence approximately 9 years after starting the first treatment.¹³ In our study, the median age for starting the first treatment and the longest abstinence was 24 (21-28), and the mean age of the study group was 29.4 ± 6.66 . The reason for the difference

observed in other studies can be explained by the fact that the mean age and mean duration of substance use are relatively lower in our study and, therefore, we could consider the longest abstinence that we documented until that age. It is possible that this period will be extended in the future with possible relapses and longer abstinence periods.

It was observed that life events related to substance use occurred at earlier ages among female participants compared to males. It is known that women with substance use disorder face more substance use-related problems than men.³³ One of the reasons for this situation may be that women progress more rapidly in the substance use process. It is clear that women need more intensive support and special care, as stated in many studies.^{33,34} Overall, studies have reported that men have higher rates of substance use than women.^{35,36} However, when age groups are taken into consideration, longitudinal studies have shown that women report higher or similar levels of alcohol/substance use in early adolescence than men. On the other hand, men report greater increases in alcohol/substance use over time, and they, therefore, exhibit higher levels of alcohol/substance use during mid and late adolescence.^{37,38} In addition, it has been reported that women who use substances have more comorbid psychiatric diagnoses and more severe familial and social problems than men.^{14,33,39} While women have lower employment rates, the primary responsibility for raising children hinders their participation in treatment.⁴⁰ Therefore, despite a shorter period of regular use before starting treatment, they generally exhibit more severe substance use and psychosocial disorders at the time of admission to treatment.³³ These findings highlight the need for a more detailed exploration of gender differences in substance use with a developmental perspective over a longer period (i.e., from early adolescence to young adulthood).

Life events related to substance use were observed at a later age in the outpatient group than in the inpatient group. Although no difference was found between the 2 groups in terms of addiction severity, it is known that starting substance use at an earlier age brings along many other problems.^{22,41} In our sample, we observed that a majority of patients used opioids compared to other substances; therefore, we sought a comparison between the ones whose substance of choice was opioids and the ones whose not. Participants whose substance of choice was opioids experienced adverse life events at an earlier age. Their addiction severity scores were also found to be higher than others. Other studies too have documented that opioid use is more destructive compared to other types of substances.²² Furthermore, it has been shown that the “addiction career” progresses more rapidly in individuals with opioid use disorder.¹³ Hence, we think that a rapid “addiction career” can be considered an indicator

of opioid use and that appropriate measures should be taken.

As far as we know, this is the first study conducted on the “addiction career” of individuals with substance use disorder in Turkey. Therefore, we believe that it provided important cues that will help shaping policies related to substance use. However, there are limitations of the study that should be considered. First, the majority of the study sample consisted of men. We believe that conducting studies involving more women will lead to the development of more gender-sensitive policies. Second, the information collection was cross-sectional and patients with substance use may have cognitive problems, which may cause recall bias. Moreover, repeating the research findings with a larger number of samples and basing them on epidemiological studies will increase the precision of the findings. It is important to note that this is a clinical study. Larger epidemiological studies are needed to represent the Turkish sample. Also, the relationship between addiction career and relapse can be investigated in future studies. Developing intervention strategies for certain points of life-course in people with substance use disorders may contribute to prolonging the period of remission. Longitudinal intervention studies are needed to evaluate the effectiveness of these strategies. Identifying user characteristics associated with the course of use in people who use different substances of choice and examining the differences in lifelong substance use patterns among these groups will help in developing targeted treatment services and policies. These findings can provide information on the timing and resource allocation of early intervention and preventive approaches. These results suggest that future mental health research should prioritize designing and funding global early interventions and specified, selective, and/or universal preventive interventions for mental disorders in middle/late adolescence and young adulthood, which are currently insufficient.

Ethics Committee Approval: This study was approved by the ethics committee of Istanbul Kent University (Approval No: 05, Date: April 27, 2022).

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

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