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ORIGINAL ARTICLE

Assessment of Alcohol Use Disorder Risk Profile, Suicide Probability, and Cognitions in University Students

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Main Points

- One in four university students had a high-risk alcohol use disorder.
- Male students, those living at home with their friends, those who experienced a period loss during university, those with suicidal individuals in the neighbourhood, those with a high-risk profile for substance use and those with low scores on the Social Support/Self Perception sub-domain of the Suicide Probability Scale were risk factors for a high-risk alcohol use.
- University students with high-risk alcohol use should be screened for suicidal ideation and cognitions.

Abstract

The aim of the study was to determine the prevalence of high-risk alcohol use, suicide risk, and related factors among university students in the Central Anatolian region of Türkiye. It is a cross-sectional study. The questionnaire used in the study consists of four parts. The first part consists of socio-demographic characteristics and related factors, the second part consists of the Addiction Profile Index Risk Scanning Scale, the third part consists of the Suicide Probability Scale, and the fourth part consists of the Brief Suicidal Cognitions Scale. The prevalence of high-risk alcohol use disorder among university students in the study group was found to be 27.2%. It was found that male students, those living at home with their friends, those who experienced a period of loss during university, those with suicidal individuals in the neighborhood, those with a high-risk profile for substance use, and those with low scores on the Social Support/Self Perception sub-domain of the Suicide Probability Scale were risk factors for a high-risk alcohol use profile. University students with high-risk alcohol use should be screened for suicidal ideation and cognition. In particular, program that focus on high-risk groups and aim to improve students' healthy coping mechanisms should be expanded.

Keywords: Addiction to alcohol, alcohol use, suicide cognitions, suicide probability, university students

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Introduction

Alcohol use is an essential problem that affects the health of university students physically, mentally, and socially. In most of today's societies, alcoholic beverages have become a routine part of the social environment and become more prominent during the university period. This period is an important time when young people gain their independence and socialization is at the forefront, and they experience behavioral changes in the life cycle. Social and emotional changes may increase the tendency towards alcohol use in university students and this process may be a critical period in terms of establishing high-risk alcohol use behaviors (World Health Organization, 2015). According to the World Health Organization data, 7% of the world population has alcohol use disorder, and 3.7% are alcohol dependent. Alcohol use causes 3 million deaths worldwide every year, as well as millions of people to be disabled and leads to health problems that may result in death. In addition to harming physical

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health, alcohol can also seriously affect the mental health of individuals and may be associated with mental disorders such as depression and anxiety. Alcohol is the leading risk factor for premature death and disability in people aged 15 – 49 years and is responsible for 10% of all deaths in this age group. Alcohol use is responsible for 5.1% of the global burden of disease (WHO, 2024a,b,c).

Alcohol use, even at low levels, can lead to health risks; however, most alcohol-induced harms are caused by heavy intermittent or heavy continuous alcohol use, which is considered risky (WHO, 2024a,b,c). Liver damage, many types of cancer, gastrointestinal damage, immune deficiency, cardiovascular disease, abdominal obesity, and neurological damage are among the health problems that may occur due to alcohol use (WHO, 2015). The neurological effects of alcohol on the brain may negatively affect individuals' decision-making mechanisms and emotional regulation capacities, which may trigger behavioral problems and risky decision-making. As a result of high-risk alcohol use, both physical and psychological addiction develop. When addiction develops, deterioration in individual, social, and professional life occurs and as a result of all these, individuals experience many problems. These problems include not being able to fulfill basic responsibilities in work, school, or home life, having legal problems or continuing to use alcohol despite the problems caused by alcohol use, decreased quality of life, loneliness, and health problems secondary to alcohol use (WHO, 2021).

Risk factors leading to alcohol dependence include family history, curiosity, fear, mental problems, and environmental factors (WHO, 2021). The university period has critical importance because it is a time when most of the students leave their families, enter a new environment, experience the transition from childhood to adulthood, and take many different responsibilities (WHO, 2024a,b,c). In this critical period, a lack of psychosocial support or being in the wrong social environment may increase high-risk alcohol use. High-risk alcohol use, which is associated with mental problems such as escaping from stressful living conditions, escaping from self-esteem, trying to alleviate unbearable pain, and ignoring existence, may result in death in the long term and may be seen as a form of self-killing. In addition, alcohol use may trigger suicidal behavior (Pompili et al., 2010). The inhibition-reducing effect of alcohol may increase the tendency of individuals towards self-destructive behaviors, which establishes a strong link with suicide risk.

In this study, it is aimed to determine the frequency of high-risk alcohol use, suicide probability, and related factors in university students in a province where university students are densely located in the central Anatolia region of Türkiye.

Material and Methods

The study is a cross-sectional study conducted among university students in a province in the central Anatolia region of Türkiye in 2024. The study population consisted of students over the age of 18 years studying at universities in the province. The number of university students living in the province where the study was conducted was reported to be 3,525,767 (Web database, 2021), and since the prevalence of monthly alcohol use was reported to be 12.1% (Aldemir et al., 2018) in the literature, the number of students to be reached by accepting each university in the province as a cluster with a 95% CI and a 5% margin of error was calculated as 327 by accepting the pattern effect: 2. The inclusion criteria are those who are over the age of 18, who can fill in the online questionnaire via smartphone, social media or internet, who are studying at the university, and who volunteer to participate in the study.

The exclusion criteria of the study were: being under the age of 18, not studying at university, having cognitive impairment, incompletely filling out the data collection forms, and those who wanted to leave the study. Ethics committee permission was obtained for the implementation of the study from Eskişehir City Hospital Ethics Committee, Decision date: 23.07.2024, Decision no.: ESH/BAEK 2024/32).

Data Collection Form

The questionnaire used in the study consists of four sections. The first part consists of sociodemographic characteristics (age, gender, family income status, family type, university, faculty, class, parental education level, place of stay) and related factors (academic success level, history of mental illness, history of chronic illness, presence of alcohol/substance addiction in the family/neighborhood, presence of suicidal individuals in the family/neighbourhood, taking a course about addiction). The second part consists of the Addiction Profile Index Risk Scanning Scale (APIRS), the third part consists of the Suicide Probability Scale (SPS), and the fourth part consists of the Brief Suicidal Cognitions Scale (BSCS).

Addiction Profile Index Risk Scanning Scale

Addiction Profile Index Risk Scanning Scale was developed by Ögel et al in 2017. It aims to determine the risk level for alcohol and substance use. The alcohol and substance sections each consist of six questions. If the total score of the questions in the Alcohol Scale is 3 or above, and 4 or above in the Substance Scale, the person is considered to be at high risk (Ögel et al, 2017).

Suicide Probability Scale

It was developed by Cull and Gill in 1982 to assess suicide risk in adolescents and adults (Cull and Gill, 1982), and a Turkish validity and reliability study was conducted by Batıgün and Şahin in 2018 (Batıgün and Şahin, 2018). The scale is a 36-item scale scored on a four-point Likert-type scale. The scale consists of four factors: "Social Support/Self Perception," "Anger/Impulsivity," "Hope lessness/Loneliness," and "Suicidal Ideation." Scores obtained from the scale indicate a high probability of suicide.

Brief Suicide Cognitions Scale

The scale developed in 2021 (Rudd and Bryan, 2021) was adapted for university students by Arslan et al. (2024) and converted into a short form, and a Turkish validity and reliability study was conducted (Arslan et al., 2024). The CSQ is a five-point Likert-type scale (1 = strongly disagree to 5 = strongly agree) consisting of six items. The total score on the scale varies between 6 and 30, and higher scores indicate a higher level of suicidal cognition.

Data were collected online using "Google Forms" on social media platforms (WhatsApp, Twitter, Instagram, Facebook, Pinterest, Snapchat, etc.). Participation was carried out on a voluntary basis. After the students were informed, consent forms were obtained from those who volunteered to participate.

Analysis of the Data

The data were evaluated in the Statistical Package for the Social Science v.15.0 (SPSS Inc.; Chicago, IL, USA). It was presented using descriptive statistics of the study group (frequencies, ratios, means, and median) and measures of distribution (standard deviation, minimum – maximum). The Kolmogorov – Smirnov test was used to check whether the data were normally distributed, and it was found that they were not normally distributed. The chi-square test, Mann – Whitney *U* test, Spearman correlation analysis, and logistic regression analysis were used to analyze the data. Statistical significance level was accepted as $p < .05$.

Results

The study group consisted of 364 students, 218 (59.9%) of whom were female and 146 (40.1%) of whom were male. The median (min – max) age of the students in the study group was 21.0 (18.0 – 45.0) and the mean (SD) was 21.63 (3.65). Ninety-nine of the students (27.2%) were found to have a high-risk alcohol use profile. The comparison of the sociodemographic characteristics of the university students in the study group according to alcohol and substance use disorder risk profiles is given in Table 1.

Among university students, the frequency of high-risk alcohol use profile was found to be higher in those who experienced loss of a period in university, had mental illness, had chronic diseases requiring continuous medication use, thought that they had alcohol use disorder in themselves, their family, and their neighborhood, had high risk in terms of substance use profile, and had suicidal individuals in their neighborhood. The frequency of high-risk alcohol use was found to be lower in those who had no alcohol users in their environment.

The comparison of the factors that may be related to the alcohol use risk profiles of the university students in the study group is given in Table 2.

It was found that the Social Support/Self-Perception, Anger/Impulsivity, Hopelessness/Loneliness, Suicidal thoughts sub-domains, and total score of the SPS, and the total score of the BSCS were related to the alcohol addiction profile high risk. The comparison of SPS sub-domains, total score, and total score of the BSCS according to alcohol APIRS high risk is given in Table 3.

There was a low correlation between the alcohol APIRS and the SPS Social Support/Self-Perception, Hopelessness/Loneliness, Suicidal thoughts sub-domains, SPS total score, and the B-SCS. On the other side, there was a moderate correlation between the alcohol APIRSS and SPS Anger/Impulsivity sub-domain. The relationships between Alcohol APIRS score, SPS score, and B-SCS score are given in Table 4.

The results of the logistic regression aalysis with the variables found to be associated (gender, faculty, maternal education level, family type, place of stay, loss of period in university, history of mental illness, history of chronic disease, thought that they had alcohol use disorder in themselves, presence of alcohol addiction in the family/ in the neighborhood, presence of a person who uses alcohol in one's neighborhood, presence of suicidal individuals in the neighborhood, Drug APIRS high risk, Social Support/Self Perception, Anger/Impulsivity, Hopelessness/Loneliness, Suicidal ideation sub-domains, SPS total score, B-SCS total score) with high-risk alcohol use disorder according to APIRS in the study, are given in Table 5.

Discussion

Addiction is an important problem in university students. High-risk alcohol use is also an important issue that needs to be addressed in this context. Suicide is known as the third leading cause of death in individuals aged 15 – 29 years, including university students (WHO, 2024a,b,c). This shows that the university years are a critical period for young individuals to develop and maintain their alcohol use habits. Considering that death due to high-risk and excessive alcohol use can be seen as a form of self-killing, it is important to examine alcohol use and suicidal tendencies together. This study is important as it examines high-risk alcohol use, suicide probability, and cognitions among university students in a city located in the central region of Türkiye. In this context, understanding the prevalence of risky behaviors among university students is seen as a critical step to develop preventive strategies.

The prevalence of high-risk alcohol use disorder among university students in the study group was found to be 27.2%. In the study of Saeed and Namiq (2024), the prevalence of high-risk alcohol consumption among medical students was reported to be 17.2%. In the study by Ilic et al., the prevalence of alcohol abuse was reported to be 32.9% (Ilic et al., 2024). In a study conducted among medical students in Türkiye, the prevalence of high-risk alcohol use was reported to be 8.4% and 9.2% among nursing students (Karabacak et al., 2024; Öztürk and İncedere, 2021). The prevalence of high-risk alcohol use in university students in another province in the central region of Türkiye was reported to be 75.6% (Fidancı et al., 2021). These findings reveal differences in alcohol use between different universities and regions and suggest that understanding these differences may be important for the development of preventive and intervention strategies. The reasons for the different results in the studies include cultural diversity, country, student profile, and measurement tool differences.

Males had a 2.3 times higher risk profile for alcohol use than females. Similarly, in the study conducted by Rodríguez et al. on university students, it was reported that females always had lower levels of dependence compared to males (Moure-Rodríguez, 2016). In the study by Saeed and Namiq, the frequency of alcohol consumption was reported to be higher in male medical students than in female students (Saeed and Namiq, 2024). This may indicate the presence of a cultural structure in society that normalizes the alcohol consumption of males more. In patriarchal societies where females' socio-cultural and socioeconomic participation in life is limited, it may be thought that males consume alcohol more than females.

University students living at home with friends were associated with a 2.5 times higher risk profile than those living with their families. A study by Rodríguez et al. reported that female students, in particular, became more dependent as they moved away from the family home (Moure-Rodríguez et al., 2016). This finding suggests that the independent lifestyle of university students is a factor that may increase alcohol consumption as their

Table 1.
The Comparison of the Sociodemographic Characteristics of the University Students in the Study Group According to High-Risk Alcohol Addiction Profile Risk Index Screening

		High-Risk Alcohol APIRS				
		No		Yes		
		n	%	*n*	%	*p**
Age groups	18 – 19	43	66.2	22	33.8	.222
	20 – 21	127	70.9	52	29.1	
	22 – 23	61	80.3	15	19.7	
	24 and upper	34	77.3	10	22.7	
Gender	Male	86	58.9	60	41.1	<.001
	Female	179	82.1	39	17.9	
Faculty years	2	109	77.9	31	22.1	.297
	3	26	74.3	9	25.7	
	4	106	67.9	50	32.1	
	6	24	72.7	9	27.3	
Faculty	Health associated (medicine, dentistry, pharmacy…)	101	74.8	34	25.2	.029
	Education-science-literature	49	81.7	11	18.3	
	Economy	22	66.7	11	33.3	
	Engineering-architecture	17	51.5	16	48.5	
	Others (theology, fine arts, aeronautics and astronautics…)	76	73.8	27	26.2	
Class	1	54	65.1	29	34.9	.401
	2	140	75.3	46	24.7	
	3	35	72.9	13	27.1	
	4	32	80.0	8	20.0	
	5	3	60.0	2	40.0	
	6	1	50.0	1	50.0	
Maternal education level	Literate and below	20	74.1	7	25.9	<.001
	Primary school	89	79.5	23	20.5	
	Middle school	58	75.3	19	24.7	
	High school	73	76.0	23	24.0	
	University and upper	25	48.1	27	51.9	
Paternal education level	Literate and below	15	71.4	6	28.6	.829
	Primary school	52	76.5	16	23.5	
	Middle school	52	76.5	16	23.5	
	High school	93	70.5	39	29.5	
	University and upper	53	70.7	22	29.3	
Family type	Nuclear	198	74.2	69	25.8	.042
	Extended	51	76.1	16	23.9	
	Broken	16	53.3	14	46.7	
Family income	Good	44	65.7	23	34.3	.314
	Middle	199	74.8	67	25.2	
	Bad	22	71.0	9	29.0	
Place of stay	With family at home	77	77.8	22	22.2	<.001
	With friends at home	46	53.5	40	46.5	
	İn the dormitory	142	79.3	37	20.7	

Note: *Chi-square tests.

Table 2.
The Comparison of the Factors That May be Related to the High-Risk Alcohol Addiction Profile Index Risk Screening of the University Students in the Study Group

		High-Risk Alcohol APIRS				
		No		Yes		
		n	%	*n*	%	*p**
Loss of period in university	No	232	76.3	72	23.7	.001
	Yes	33	55.0	27	45.0	
Academic success level	High	87	79.1	23	20.9	.086
	Moderate	158	71.5	63	28.5	
	Low	20	60.6	13	39.4	
History of mental illness	No	243	77.6	70	22.4	<.001
	Yes	22	43.1	29	56.9	
History of chronic diseases	No	244	75.1	81	24.9	.009
	Yes	21	53.8	18	46.2	
Thought that they had alcohol use disorder in themselves	No	255	75.4	83	24.6	<.001
	Yes	10	38.5	16	61.5	
Presence of alcohol addiction in the family	No	231	77.8	66	22.2	<.001
	Yes	34	50.7	33	49.3	
Presence of alcohol addiction in the neighbourhood	No	168	82.8	35	17.2	<.001
	Yes	97	60.2	64	39.8	
Presence of a person who uses alcohol in one's neighbourhood	No	181	82.3	39	17.7	<.001
	First-degree relative	11	55.0	9	45.0	
	Second-degree relative	5	55.6	4	44.4	
	Friend	52	65.0	28	35.0	
	Others	11	61.1	7	38.9	
	Himself	5	29.4	12	70.6	
Take a course about addiction	No	209	73.3	76	26.7	.665
	Yes	56	70.9	23	29.1	
Drug APIRS high risk	No	264	75.6	85	24.4	<.001
	Yes	1	6.7	14	93.3	
Presence of suicidal individuals in the family	No	258	73.7	92	26.3	.065
	Yes	7	50.0	7	50.0	
Presence of suicidal individuals in the neighbourhood	No	191	77.3	56	22.7	.005
	Yes	74	63.2	43	36.8	
Active participation in any club at the university	No	218	74.9	73	25.1	.071
	Yes	47	64.4	26	35.6	

Note: *Chi-square test.

freedom increases. Some studies suggest that a stricter, more controlled home environment may be a protective factor for alcohol use (Wechsler et al., 2002; Weitzman et al., 2005). Our findings in the present study suggest that students who live a controlled, organized life with their families are less risky in terms of their alcohol dependence profile.

Alcohol use and dependence may be more common among students who experience academic failure during the university process. Those who experienced a semester loss during the university process had a 4.1 times higher risk profile for alcohol dependence than those who did not. Neyden et al. reported that high alcohol consumption was associated with a decrease in academic success (Whatnall, 2024). A significant proportion of university students consume alcohol at hazardous levels, and this is often associated with poor academic performance and mental health outcomes (Tembo et al., 2017).

Alcohol dependence is a known risk factor for suicide. The risk of alcohol dependence was 2.2 times higher for those who had

Table 3.
The Comparison of Suicide Probability Scale Sub-domain, Total Score, and Total Score of The Brief-Suicide Cognition Scale According to High-Risk Alcohol Addiction Profile Risk Screening High Risk

	High-Risk Alcohol APIRS		
	No **Median (Min – Max)** **Mean (SD)**	**Yes** **Median (Min – Max)** **Mean (SD)**	***p****
SPS 1.Sub-domain: Social support/Self perception	28.0 (14.0 – 49.0) 29.5 (7.3)	32.0 (14.0 – 50.0) 32.1 (8.4)	0.003
SPS 2. Sub-domain: Anger/Impulsivity	10.0 (6.0 – 23.0) 10.4 (3.5)	13.0 (6.0 – 24.0) 13.1 (4.0)	<0.001
SPS 3.Sub-domain: Hopelessness/Loneliness	14.0 (7.0 – 26.0) 14.5 (4.2)	17.0 (7.0 – 27.0) 17.0 (4.2)	<0.001
SPS 4.Sub-domain: Suicidal thoughts	14.0 (7.0 – 28.0) 14.4 (5.0)	16.0 (7.0 – 28.0) 15.9 (4.9)	<0.001
SPS Total Score	72.0 (40.0 – 123.0) 73.9 (16.3)	85.0 (43.0 – 127.0) 83.8 (17.8)	<0.001
B-SCS Total Score	9.0 (6.0 – 26.0) 9.9 (4.2)	12.0 (6.0 – 27.0) 12.1 (5.3)	<0.001

Note: *Mann – Whitney *U* test.

a suicide survivor in their neighborhood than for those who did not. This suggests that the impact of suicide on the immediate environment should be considered together with the impact of suicide on an individual's alcohol consumption. Recent research on suicide among young people in the United Kingdom (National Confidential Inquiry into Suicide and Homicide [NCISH]) shows that alcohol misuse is a common precursor to suicide (McLaughlin and Gunnell, 2021). Alcohol dependence was also found to be significantly associated with an increased likelihood of suicidal behavior among students (O'Neill et al., 2018). The systematic review by Kabir et al. reported a lack of reliable comparative data on suicide risk factors (Kabir et al., 2024). Porter et al. (2024) also reported a strong association between alcohol consumption and suicide.

Alcohol consumption is known to increase with social support (WHO, 2015). In the present study, those with high scores on the social support/self-perception sub-domain of the SPS had a 0.781-fold lower risk alcohol use profile. This finding suggests that social support and strong family ties may have a protective effect on high-risk alcohol use. The idea that alcohol facilitates social relationships makes it easier and earlier to start drinking (Karaaziz and Söyler, 2024). Recent studies of suicide among young people in the United Kingdom National Confidential Enquiry into Suicide and Homicide report that alcohol misuse, social isolation, and suicide are common precursors (McLaughlin and Gunnell, 2021). A study by Byrnes et al. (2019) testing an

Table 4.
The Relationship Between the Alcohol APIRS Score, SPS Score and B-SCS Score

	Alcohol APIRSS Score	
	r	***p****
SPS 1.Sub-domain: social support/self perception	0.199	<.001
SPS 2. Sub-domain: anger/impulsivity	0.351	<.001
SPS 3.Sub-domain: hopelessness/loneliness	0.273	<.001
SPS 4.Sub-domain: suicidal thoughts	0.138	.008
SPS total score	0.289	<.001
B-SCS total score	0.251	<.001

Note: *Spearman correlation analysis.

Table 5.
Logistic Regression Analysis Results With Variables Found to be Associated With High-Risk According to Alcohol APIRS

Alcohol APIRS High-Risk	**OR[a](95% CI[b])**	*p*
Gender (reference:female)		
Male	2.324(1.187 – 4.552)	.014
Place of stay (reference: with family at home)		
With friends at home	2.506(1.030 – 6.096)	.043
In the dormitory	0.692(0.314 – 1.524)	.361
Loss of period in university (Reference: No)		
Yes	4.072(1.831 – 9.057)	.001
Presence of suicidal individuals in the neighbourhood (Reference: No)		
Yes	2.249(1.129 – 4.479)	.021
High risk drug APIRS (Reference: No risk)		
High risk	17.436(1.378 – 220.659)	.027
SPS 1.sub-domain : social support/self perception	0.781(0.622 – 0.983)	.035

Note: Cox & Snell R^2: 0.337.
Nagelkerke R^2: 0.488.
[a]Odd's ratio.
[b]Confidence interval.

online family prevention program to prevent alcohol use in older adolescents reported that families were effective in preventing alcohol use. A study conducted in Spain reported that alcohol use was a moderator of suicide (Ballabrera et al., 2024). In a study conducted by Crisafulli et al. (2024) among university students, sociability was reported to be associated with high-risk alcohol use, but the need to belong and social connectedness were not directly related to alcohol use. These mixed findings suggest that more research is needed to understand the impact of cultural factors and individuals' social dynamics on alcohol use. Depending on different cultural characteristics, the role of social support in high-risk alcohol use may vary according to different subcategories.

Those with a high-risk profile for substance use were found to have a 17.4-fold higher risk profile for alcohol use than those without. In the study of Saeed and Namiq in 2024, it was reported that the prevalence of alcohol use was higher among medical students with substance abuse (Saeed and Namiq, 2024). This finding suggests that substance use may act as a trigger factor that may increase alcohol consumption. During the university period, alcohol and substance use in students may increase due to reasons such as leaving the family, entering a new environment, and the presence of individuals who use alcohol and substances among their friends. Therefore, it is important to develop intervention strategies for such risk factors in the university environment.

Limitations and Directions/Suggestions for Future Research

In the study, it was found that almost one in four university students had a high-risk alcohol use disorder. It was found that male students, those living at home with their friends, those who experienced a semester loss during the university process, those with suicidal individuals around them, those with a high-risk profile of substance use, and those with low scores on the social support/self perception sub-domain of the SPS were found to be risk factors for a high-risk alcohol use profile. These findings highlight the importance of developing comprehensive approaches to the prevention and management of alcohol dependence among university students. Awareness of high-risk drinking among university students should be increased and intervention studies should be conducted for prevention. University students with high-risk alcohol use should be screened for suicidal ideation and cognitions. In particular, programmes that focus on high-risk groups and aim to improve students' healthy coping mechanisms should be expanded. Suicide prevention programs should address hazardous alcohol use, promote healthy behaviors, and pay particular attention to social support/self-perception.

The strength of the study is that it was conducted in one province in the Central Anatolian region of Türkiye, where university students are densely populated. On the other hand, because it was conducted in a single province, it may not be generalisable. Additionally, the study was conducted online and based on self-reporting (information bias), which are limitations of our study. A larger sample size is needed.

Data Availability Statement: The data that support the findings of this study are available on request from the corresponding author.

Ethics Committee Approval: This study was approved by the Ethics Committee of Eskişehir City Hospital (Approval no.: ESH/BAEK 2024/32; Date: 23.07.2024).

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

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