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ORIGINAL PAPER

Addiction in university students – determining the levels of cigarette, alcohol, substance, game, and Internet addiction

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ABSTRACT

Introduction and aim. This study aims to determine the average addiction levels of university students and the effects of different demographic variables on addiction levels and types.

Material and methods. The study included 783 volunteer students in the Seydişehir campus of Necmettin Erbakan University. Data were collected face-to-face using Sociodemographic Information Form, Fagerström Test for Nicotine Dependence (FTND), Cut-off test (CAGE), Digital Game Addiction Scale (DGAS-7), and Internet Addiction Test (IAT).

Results. Of the students, 27.7% were using tobacco, 14.8% were using alcohol, 2.6% were using ecstasy, 2.3% were using cannabis, 1.4% were using inhalants, 1% were using pills. FTND, DGAS-7, and IAT mean scores were 3.80±2.55, 12.04±5.57, and 43.56±15.73, respectively, and 21.5% had risky alcohol use. Also, 2.2% were game addicts, 3.8% were internet addicts. Digital game addiction, internet addiction, and nicotine addiction were positively correlated. There was no significant relationship between nicotine and internet addictions. Individuals with risky alcohol use had higher rates of nicotine addiction.

Conclusion. Students' addiction rates were similar to the country in general. Addictions gained in the youth years continue in the following years and bring many health problems. Therefore, it is crucial to include the subject of combating addiction more in university education and increase studies on the subject.

Keywords. addiction, alcohol, cigarette, game, Internet, university student

Introduction

Addiction is a clinical presentation that starts with taking increasing amounts of a substance outside its intended use, progresses with the inability to stop using it even though it causes problems in the person's life, and lastly, reducing the substance intake causes withdrawal symptoms. In the scientific literature, it is examined under substance and behaviour addiction.[1] The Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5) lists addictive substances as alcohol, caffeine, cannabis, hallucinogens, inhalants, opioids, sedatives-hypnotics and anxiolytics, stimulants, nicotine, and other (or unknown substances)[2]. The individual's actions, including computer, television, gaming, shopping, food, internet, gambling, porn, exhibitionism, sex, being in virtual environments, using digital tools and equipment are behavioural addictions.[3]

Although preventable, tobacco smoking is one of the leading causes of mortality and morbidity. According to the World Health Organization (WHO), nearly 1 billion people worldwide use tobacco.[4,5] In Turkey, smoking prevalence among university students varies between 20% and 48%.[6,7] Alcohol/substance or technological addictions may be accompanied by decreased academic/work achievement, social and physical problems, bringing along psychiatric disorders, attention/concentration difficulties.[8]

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Internet addiction constitutes the main framework of other internet-related addictions. In this context, besides the internet itself, the activities carried out over the internet are also a source of addiction.[9] Therefore, "social media addiction", "digital game addiction" and "smartphone addiction" can be considered as addictions in which the active substance is the internet[10]. Studies have shown that in parallel with the risk of internet addiction for adolescents, digital game addiction is also high and digital games are more stimulating than other games because they increase curiosity and excitement and provide instant gratification.[11-15]

Cannabis remains by far the world's most used drug an estimated 209 million people used cannabis, 61 million people used opioids, 21.5 million people used cocaine, 34 million people used amphetamines, NPS (Synthetic cannabinoids and ketamine) were consumed in most countries in 2020.[16]

At the same time, the desire of university students who are adolescents to lead an independent life and the fact that both substance and behavioural addictions affect all areas, especially in the field of health, causes them to become a priority by leading them to negative situations. Addiction has become a major threat affecting societies. It is crucial to determine the factors causing addiction, to raise awareness for determining the addiction status, to quickly produce solutions to prevent addiction, and to inform students in educational institutions about the negative consequences.

Aim

This study aims to determine the average addiction levels of university students and the effects of different demographic variables on addiction levels and types.

Research Questions

What are the a. Nicotine addiction, b. Alcohol dependence, c. Internet addiction, d. Digital game addiction levels, and e. Substance use rates of university students? What is the socio-demographic variables that affect these rates?

Material and methods

Ethical approval

Ethics committee approval was obtained before starting the study (App. No:2022/18-108-05.01.2022). Institutional permissions were obtained from the relevant University (Number: E-15812146-200-141779 / E-79170238-044-142345 / E-33205045-100-141777). Participants' verbal and written consents were obtained. The research was carried out per the principles of the Declaration of Helsinki.

Type of research

This is a cross-sectional field study.

Research population and sample

The population includes 1545 students studying at the Necmettin Erbakan University Seydişehir campus. The sample size calculated with the Raosoft program using the sample calculation formula for groups with a known population, with a 0.05 margin of error, a 95% confidence interval, was 308. The literature recommends increasing the number obtained by at least 15% for possible losses.[17] Accordingly, the number of students to be sampled was increased by 15% to 354. A total of 783 students who met the inclusion criteria and volunteered to participate were included in the study.

Data collection techniques and tools

Data were collected using "Sociodemographic Information Form", "Fagerström Test for Nicotine Dependence (FTND)", "Cut-off Test (CAGE)", "Digital Game Addiction Scale (DGAS-7)" and "Internet Addiction Test (IAT)".

Sociodemographic information form

It includes questions about the socio-demographic characteristics of individuals and whether they have used addictive substances in DSM-V in the last year.[2,18]

Fagerström Test for Nicotine Dependence (FTND)

Fagerström first proposed the Fagerström Tolerance Test for the assessment of smoking addiction in 1978. This test was reconsidered by Heatherton et al. in 1991, creating the Fagerström Test for Nicotine Dependence (FTND). FTND consists of 6 questions, each having a different score. The validity and reliability analysis of the test was performed by Uysal et al. A total score of 0-2 indicates low dependence, 3-4: low to moderate dependence, 6-7: moderate dependence, and 8-10: high dependence. The Cronbach reliability coefficient of the test was found to be moderately reliable at 0.56. Cronbach was found to be 0.66 in our study, and it can be said that the scale is reliable.[19,20]

Cut-off test CAGE (Cut down, Annoyed, Guilty, Eyeopener)

It was developed by Ewing and Rouse, and its Turkish validity and reliability study was performed by Arıkan et al. It is a short and simple test consisting of four questions. The recommended cut-off is two; that is, two or more positive answers indicate risky use.[21,22]

Digital game addiction scale (DGAS-7)

DGAS-7 was developed by Lemmens et al. to identify problematic digital gaming behaviours. It is a seven-item short form of DGAS-21 consisting of 21 items and seven sub-dimensions. It is a single-dimension, five-point Likert type scale scored between 1 and 5 (1=never, 5=always) (range: 7-35). Scoring three or more on all seven items implies that the person is a game addict. In addi-

tion, a relationship can be established between the increase in the score obtained from the scale and the level of addiction. They reported the Cronbach's alpha coefficient of the scale as 0.72.[23,24]

Internet addiction test (IAT)

It is a 20-item Likert-type scale developed by Dr. Kimberley Young (1996). Turkish validity and reliability studies were conducted. Those who score '80 and above' in the questionnaire are supposed to have significant impairments in functionality and are considered "internet addicts" (IA). Those who score between '50-79' are regarded as those frequently having problems with the internet in their daily lives and difficulty in controlling themselves and are called "risky internet users" (RIU). Those who score "49 and below" are considered "average internet users" (AIU). The reliability level of the scale was found to be 0.895 with the Cronbach's alpha coefficient.[25,26]

Data collection

Data were collected by face-to-face interview method between January 9 and February 28, 2022. Data collection took approximately 10-15 minutes for each individual. As the study was conducted during the COVID-19 pandemic, the interviews were held following the pandemic measures, wearing masks, and maintaining social distance.

Study limitations

The study group was selected from accessible volunteer students.

Statistical data analysis

Data were analysed using the SPSS (IBM, Armonk, New York, United States) for Windows 22 package program. Besides numbers, percentages, minimum and maximum values, mean and standard deviations, normally distributed measurements were compared with t-test for two independent groups, and analysis of variance for multiple groups (as further analysis, LSD was used in cases where variances were homogeneous, and Dunnet C was used in cases where they were not). In the evaluation of statistical relationships, Pearson correlation analysis was used for normally distributed measurements, and Spearman correlation analysis was used for non-normally distributed measurements. Cronbach α coefficient was used for internal validity, Kurtosis and Skewness coefficients were used for normality distribution of the data. In normal distribution analysis, Skewness coefficients for each scale were as follows: FTND (n: 219) SE: 0.16, Kurtosis coefficient SE: 0.327; DGAS-7 (N: 780) SE: 0.088, Kurtosis coefficient SE: 0.175; IAT (n: 769) SE: 0.088 Kurtosis coefficient SE: 0.176. Accordingly, Fagerström Nicotine Addiction Test, Digital Game Addiction Scale, and Internet Addiction Test scores show normal distribution. Age and GPA were not normally distributed; age had a Skewness coefficient of (n: 779) SE: 0.088 and Kurtosis coefficient of SE: 0.175, GPA had a Skewness coefficient of (n: 458) SE: 0.114 and Kurtosis coefficient of SE: 0.228. Internal validity (Cronbach α) coefficients of the scales were as follows; FTND: 0.666, DGAS-7: 0.871, IAT: 0.917.

Results

Of the participants, 36.7% were associate degree (Associate degree is a 2-year education given in vocational schools of universities), 37.8% were second-year students, 67% were male, 83.7% were born in the city centre, 53.9% had a middle socioeconomic level, 72.3% did not smoke, and 85.2% did not use alcohol. As for substance use, 97.7% did not use cannabis, 99.4% did not use ecstasy, and 99.5% did not use heroin. In addition, 99.5% did not use cocaine, 99.6% did not use roofies, 99.7% did not use Rohypnol, 98.6% did not use inhalants, 99% did not use pills, 99.4% did not use amphetamines, and 99.6% did not use other substances (Table 1).

Table 1. Demographic characteristics of the participants

		n	%
Department	Nursing	196	25
	Mechanical Engineering	92	11.7
	Computer Engineering	208	26.6
	Associate degree	287	36.7
Grade	1	352	45
	2	296	37.8
	3	42	5.4
	4	93	11.9
Gender	Male	478	61
	Female	305	39
Place of birth	City	655	83.7
	Town	68	8.7
	Village	60	7.7
Socioeconomic status	Below	47	6
	Below average	238	30.4
	Average	422	53.9
	Upper average	69	8.8
	Upper	7	0.9
Smoking	Yes	217	27.7
	No	566	72.3
Drinking Alcohol	Yes	116	14.8
	No	667	85.2
Medications usage	None	775	99
	Only a few times	3	0.4
	1-3 times a month	1	0.1
	1-5 times a week	1	0.1
	Almost every day	3	0.4

Continuous Variables	**n**	**Min.**	**Max.**	**Avg.**	SD.
Age	779	17	48	20.47	2.97
Grade Point Average	458	1	98	17.52	29.37

* Multiple markings

2.7% of the participants were using electronic cigarettes. Electronic cigarette use was not an effective factor in any type of addiction (p<0.0059).

Participants scored an average of 3.80±2.55 on the Fagerström Test for Nicotine Dependence, and scores ranged from 0 to 10. According to the scale cut-off points, 35.6% of the students had a low dependence on nicotine (Table 2).

Table 2. Distribution of scale scores

Scales and Subscales	n	Min.	Max.	Avg.	SD.
Fagerström Nicotine Addiction Test	219	0	10	3.8	2.55
According to Scale Breakpoints	**n**	**%**	–	–	–
Slightly addicted	78	35.6	–	–	–
Little addicted	56	25.6	–	–	–
Moderately addicted	30	13.7	–	–	–
Highly addicted	35	16	–	–	–
Very highly addicted	20	9.1	–	–	–
Incision Test (CAGE)					
According to Scale Breakpoints	**n**	**%**			
Risky usage	26	21.5	–	–	–
No risky usage	95	78.5	–	–	–
Total	121	100	–	–	–
Digital Game Addiction Scale	780	7.00	35	12.04	5.57
According to Scale Breakpoints	**n**	**%**			
No risk	765	97.8	–	–	–
Game Addicted	17	2.2	–	–	–
Internet Addiction	769	20	101	43.56	15.73
According to Scale Breakpoints	**n**	**%**	–	–	–
Internet addicted	29	3.8	–	–	–
Risky internet users	194	25.2	–	–	–
Average internet user	546	71.0	–	–	–

The difference in Fagerström Test for Nicotine Dependence score was statistically significant according to the participants' class, gender, alcohol use/trial, alcohol use, and pill use (p<0.05) (Table 3). Further analyses to specify which groups the differences originated from determined that the mean score of the 4th-year students was lower than the 1st and 2nd-year students (p<0.05), and the mean score of men was higher than that of women (p<0.05). Those who used/tried alcohol had higher scores than those who did not (p<0.05), and those who used pills almost every day had higher scores than those who never used pills or used only 1-2 times (p<0.05). The difference in Fagerström Test for Nicotine Dependence scores according to department, place of birth, socioeconomic level, and smoking status was not statistically significant (p>0.05). The parts with missing SD in the table; Since the number of respondents was 1 person, it could not be checked (Table 3).

There was no statistically significant correlation between age and GPA and Fagerström Nicotine Dependence test scores (p>0.05) (Table 6). There was risky alcohol use in 25% of the participants.

The difference in Alcohol Abuse Disorder Rates according to department and pill use status was statistically significant (p<0.05) (Table 4). Further analyses (LSD) to determine from which groups the differences originated revealed that those who studied in the nursing department (p<0.05), those who never used pills, and those who were in the no alcohol abuse risk category obtained higher scores than the other groups. The difference in Alcohol Abuse Disorder Rates according to class, gender, place of birth, socioeconomic level, smoking, alcohol use/trial status was not statistically significant (p>0.05) (Table 4). Age and GPA scores were not statistically significant in terms of alcohol abuse status (p>0.05) (Table 5).

Participants scored an average of 12.04±5.57 points on the DGAS-7. The scores varied between 7-35 and based on the scale cut-off points, 2.2% of the participants were game addicts (Table 2). The difference in DGAS-7 scale scores by department, class, gender, socioeconomic level, alcohol use/trial, and inhalant use was statistically significant (p<0.05) (Table 3). Further analyses (LSD) to distinguish from which groups the differences originated determined that the scores of those in the nursing department were lower than those in the computer engineering department, the scores of the second-year students were higher than those in the other years. The mean score of men was higher than that of women. Those in the upper economic classes had higher scores than those in the lower, lower-middle, middle, and upper-middle classes. The mean score of those who used/tried alcohol was higher. The scores of those who never used inhalants were lower than those who used them only 1-2 times and those who used them every day. The difference in DGAS-7 Scale Scores according to the place of birth and smoking status was not statistically significant (p>0.05) (Table 3). There was no statistically significant association between age and DGAS-7 Scale score (p>0.05). There was a statistically significant, low-level negative correlation between GPA and DGAS-7 Scale score (p<0.05). As the DGAS-7 Scale score increased, the overall grade point average decreased (Table 6).

Participants obtained an average of 43.56±15.73 points from the Internet Addiction Test. The scores varied between 20-101, and based on the scale cut-off points, 3.8% of the participants were internet addicts (Table 2). The difference in Internet Addiction Test scores according to socioeconomic level, inhalant use, and other substance use was statistically significant (p<0.05) (Table 3). Further analyses (LSD) to discern from which group the differences originated determined that those in the upper economic class had higher scores than those in the lower, lower-middle, middle, and upper-middle classes. The scores of those who used inhalants only 1-2 times were higher than those who never used them and those who used them almost every day.

Table 3. Comparison of FTND, DGAS-7 and IAT scores according to demographic characteristics

		FTND					DGAS–7					IAT				
		n	Avg.	SD.	Test	p	n	Avg.	SD.	Test	p	n	Avg.	SD.	Test	p
Department	Nursing	20	3.20	3.00	F=2.347	0.074	196	11.20	4.73	F=3.091	**0.026**	193	43.30	12.01	F=0.066	0.978
	Mechanical Engineering	35	3.94	2.03			92	11.85	5.73			88	43.09	16.49		
	Computer engineering	57	3.19	2.68			206	12.87	5.56			204	43.77	16.21		
	Associate degree	107	4.19	2.49			286	12.07	5.98			284	43.73	17.37		
Grade	1	95	3.57	2.43	F=5.491	**0.001**	350	11.47	5.44	F=5.642	**0.001**	343	42.47	15.90	F=2.616	0.050
	2	95	4.43	2.58			295	13.06	5.92			294	45.39	16.79		
	3	5	3.60	2.88			42	10.81	4.72			42	44.62	11.11		
	4	24	2.25	2.11			93	11.49	4.79			90	41.22	12.56		
Gender	Male	177	4.04	2.58	t=2.914	**0.004**	476	13.22	5.79	t=8.058	**0.000**	468	43.24	15.95	t=-0.703	0.482
	Female	42	2.79	2.18			304	10.19	4.66			301	44.06	15.40		
Place of birth	City	189	3.79	2.59	F=0.193	0.824	652	11.87	5.46	F=1.967	0.141	645	43.14	15.67	F=1.441	0.237
	Town	19	4.05	2.59			68	13.12	6.52			66	45.61	15.42		
	Village	11	3.45	1.69			60	12.67	5.55			58	45.91	16.67		
Socioeconomic status	Below	9	4.11	2.32	F=1.452	0.218	47	11.68	5.28	F=2.583	**0.036**	47	42.91	18.19	F=2.623	**0.034**
	Below average	69	3.48	2.44			237	12.16	5.44			231	44.20	16.77		
	Average	109	3.96	2.53			420	11.95	5.50			417	43.45	14.49		
	Upper middle	28	3.50	2.90			69	11.72	5.52			67	40.75	14.92		
	Upper	4	6.25	2.06			7	18.57	11.84			7	60.14	30.53		
Smoking	Yes	217	3.79	2.55	t=–0.390	0.697	215	12.35	5.89	t=0.960	0.338	213	43.84	16.50	t=0.301	0.763
	No	2*	4.50	3.54			565	11.92	5.45			556	43.45	15.44		
Tried Alcohol	Yes	84	4.83	2.58	t=4.988	**0.000**	115	13.48	6.88	t=2.506	**0.013**	115	45.31	17.34	t=1.297	0.195
	No	135	3.16	2.31			665	11.79	5.28			654	43.25	15.43		
Using alcohol	None	104	3.21	2.31	F=4.791	**0.001**	603	11.70	5.23	F=3.693	**0.005**	592	42.99	15.21	F=1.344	0.252
	Only a few times	51	3.84	2.41			85	12.51	5.78			86	44.15	16.51		
	1-3 times a month	39	4.21	2.77			59	14.02	6.68			58	46.71	18.23		
	1-5 times a week	17	5.53	2.76			25	12.80	7.00			25	45.28	15.54		
	Almost every day	8	5.50	2.62			8	15.88	9.78			8	51.13	24.14		
Medications usage	None	214	3.78	2.53	F=3.284	**0.039**	772	12.01	5.57	F=1.065	0.373	761	43.55	15.66	F=0.700	0.592
	Only a few times	3	2.33	2.31			3	14.00	6.00			3	45.33	35.44		
	1-3 times a month	–	–	–			1	11.00	.			1	41.00	.		
	1-5 times a week	–	–	–			1	12.00	.			1	67.00	.		
	Almost every day	2	8.00	1.41			3	18.33	4.62			3	37.00	16.52		
Using volatile substances	None	210	3.75	2.51	F=2.458	0.088	769	11.96	5.52	F=5.388	**0.001**	758	43.44	15.59	F=5.383	**0.001**
	Only a few times	6	6.00	2.97			7	15.86	6.72			7	39.57	14.32		
	1-3 times a month	–	–	–			1	10.00	.			1	57.00	.		
	Almost every day	3	3.00	3.46			3	23.33	4.93			3	78.33	22.50		
Using Ras	None	216	3.81	2.54	F=1.336	0.263	777	12.02	5.56	F=1.725	0.160	766	43.51	15.68	-	**0.036**
	Only a few times	1	1.00	.			1	8.00	.			1	29.00	.		
	1-3 times a month	1	1.00	.			1	20.00	.			1	86.00	.		
	Almost every day	1	7.00	.			1	21.00	.			1	53.00	.		
Other substance use	None	216	3.81	2.54	F=0.609	0.545	777	12.02	5.56	F=2.583	0.076	766	43.51	15.68	F=3.168	**0.043**
	Only a few times	1	1.00	.			1	8.00	.			1	29.00	.		
	Almost every day	2	4.00	4.24			2	20.50	0.71			2	69.50	23.33		

*Two people who said no were included as smokers because they stated that they used electronic cigarettes.

The difference in Internet Addiction Test score by department, class, gender, place of birth, smoking, alcohol use/trial status was not statistically significant (p>0.05) (Table 3). There was no statistically significant correlation between age and GPA and Internet Addiction Test Score (p>0.05) (Table 6).

Table 4. Incision test by demographic characteristics of participants: comparison of alcohol abuse disorder rates by CAGE

		Risky usage		No risky usage		Importance
		n	%	n	%	
Department	Nursing	4	66.7	2	33.3	x^2=12.260 p=**0.007**
	Mechanical Engineering	1	5.0	19	95.5	
	Computer engineering	3	12.5	21	87.5	
	Associate degree	18	25.4	53	74.6	
Grade	1	11	20.4	43	79.6	x^2=3.564 p=0.313
	2	15	26.3	42	73.7	
	3	2	100	–	–	
	4	–	–	8	100	
Sex	Male	24	23.3	79	76.7	p=0.356*
	Female	2	11.1	16	88.9	
Place of birth	City	24	23.1	80	76.9	x^2=1.689 p=0.430
	Town	2	16.7	10	83.3	
	Village	–	–	5	100.0	
Socioeconomic status	Below	2	28.6	5	71.4	x^2=2.842 p=0.585
	Below average	7	20.0	28	80.0	
	Average	11	20.0	44	80.0	
	Upper middle	6	31.6	13	68.4	
	Upper	–	–	5	100	
Smoking	Yes	21	23.9	67	76.1	x^2=1.080 p=0.299
	No	5	15.2	28	84.8	
Alcohol usage/ experience	Yes	23	19.8	93	80.2	p=0.066*
	No	3	60.0	2	40.0	
Medications usage	None	24	20.5	93	79.5	x^2=7.921 p=**0.019**
	Only a few times	–	–	2	100	
	1–3 times a month	–	–	–	–	
	1–5 times a week	–	–	–	–	
	Almost every day	2	100	–	–	

* The value of x2 is not available as Fisher's exact chi-square test is used

There was a statistically significant low-level positive correlation between Fagerström Test for Nicotine Dependence and Digital Game Addiction Scale scores (p<0.05). As the Fagerström Test for Nicotine Dependence score increased, the Digital Game Addiction Scale score also increased. There was no significant association between the Fagerström Test for Nicotine Dependence and the Internet Addiction Test (p>0.05). There was a statistically significant, moderate positive correlation between the Digital Game Addiction Scale score and the Internet Addiction Test score (p<0.05). As the Digital Game Addiction Scale score increased, the Internet Addiction Test score also increased (Table 6).

Table 5. Comparison of FNAT, DGAS-7, IAT Scores by age and GPA according to alcohol abuse disorder

	Alcohol risky usage			No risky usage			Meaningfulness
	n	Avg.	SD	n	Avg.	SD	
Fagerström Test for Nicotine Dependence	21	6.24	2.43	67	4.46	2.45	t=2.908 p=**0.005**
Digital game dependence scale	26	13.50	6.75	94	13.44	6.87	t=0.042 p=0.966
Internet dependence scale	26	46.54	13.95	94	45.16	17.92	t=0.363 p=0.717
Age	26	21.54	4.17	95	20.42	1.22	t=1.351, p=0.188
General score average	16	18.92	29.06	49	15.70	26.33	t=0.413, p=0.681

Table 6. Examining the relationship between FNAT, DGAS-7, IAT, age and GPA

		Fagerström Test for Nicotine Dependence	Digital game dependence scale	Internet dependence scale	Age	General score average
Fagerström Test for Nicotine Dependence	r	1	0.137	0.029	0.108	–0.135
	p		**0.043**	0.673	0.110	0.144
	n	219	217	215	218	118
Digital game dependence scale	r	0.137	1	0.534	0.038	–0.155
	p	**0.043**		**0.000**	0.291	**0.001**
	n	217	780	766	776	457
Internet dependence scale	r	0.029	0.534	1	–0.032	–0.061
	p	0.673	**0.000**		0.379	0.193
	n	215	766	769	766	453

Fagerström Test for Nicotine Dependence scores varied significantly by alcohol abuse disorder risk status (p<0.05). Individuals with risky alcohol use had higher Fagerström Test for Nicotine Dependence scores (Table 5).

Discussion

This research was conducted to evaluate the levels of addiction: cigarette, alcohol, substance, game and internet addiction among university students living in a borough. Universities are an important reflection of the general smoking behaviour of the young population. Many studies in the scientific literature have determined the smoking rates of university students. As there are studies in our country with findings similar to our study (22-34%), there are also studies that have found much higher rates (40-50%).[6,27-29] The smoking rate found in some of the studies conducted in other countries is; 51.4% in Syria, 24% in Italy, and 21% in the USA.[30-32] Two people who said no were included as smokers because they stated that they used electronic cigarettes. When we look at our country and the world in general, it is seen that the rate of smoking among university students is high.

The alcohol consumption rate of university students was determined as 14.8%. Study findings are similar to scientific literature.[33] A multicentre study found that among seven countries (Germany, Poland, Bul-

garia, Denmark, Lithuania, Spain, and Turkey), Turkish students had a lower prevalence of daily alcohol use compared to students studying in other countries (male 19%, female 8%).[34] These results may make us think that living in the borough and religious values also affect it.

Of the participants, 2.3% stated that they use cannabis, 1.4% use volatile substances, and 1% use pills. The rate of students' addictive substance use was found to be 13.4% in a study.[18] Studies in Germany show that alcohol and substance use is more common among university students than in Turkey.[35] Obtaining the study data from a campus in a borough constitutes one of the limitations of the study. Therefore, results cannot be generalized. However, it can be said that the access to the substance of the participants included in the study is low because it is lower than in the city centre.

The participants obtained 35.6% had a very low level of nicotine dependence, 25.6% had a low level of nicotine dependence, and 13.7% had a moderate nicotine dependence. A study conducted with 622 undergraduate students studying at a private university determined that students had an average FNTP score of 3.6, male students scored higher, and the FTND scores indicated low (29.3%) and moderate (9.7%) dependence Evli found the mean FNTP score of the students as 3.52. The present study is consistent with these findings.[30,36] It can be said that a small part of the students have never met cigarettes. The nicotine addiction rate of the last-year students was lower than those in the 1st and 2nd-years. In their study with medical school students, Şenol determined that the first three years were the riskiest years for smoking.[27]

There was risky alcohol use in 21.5% of the participants. Studies on university students found alcohol use risks to be 13% in Denmark, 7.2% in Hong Kong, 1% in Indonesia.[37-39] Many studies determined the alcohol use rate and addiction levels to be higher in males than in females.[18,33,34] Unlike these, our study found no significant correlation between gender and risky alcohol use. The rate of risky alcohol use was higher in students in the nursing department (66.7%). This finding is consistent with the literature.[38]

According to the Household Information Technologies (IT) Usage Survey, 2021 report, the internet usage rate in our country is 82.6% in the 16-74 age group. According to the Digital 2021 report, the worldwide average daily internet usage time is 6 hours 54 minutes, and in our country, it is above the world average with 7 hours and 57 minutes. The scores varied between 20-101, and based on the scale cut-off points, 3.8% of the participants were internet addicts. In a study conducted in Ordu, the average score obtained from the Internet Addiction Test was 89.87.[40] In their systematic review examining the internet addiction levels in the Gulf countries, Al-Khani et al. reported the internet addiction rate as 33%[41]. Both the total scores and the addiction rates of the participants were lower than the mentioned studies.

No significant relationship was found in the rate of internet addiction according to the gender variable. Besides similar studies in the scientific literature, there are also studies reporting higher internet rates in men.[42,43] Internet addiction rates of those with a high-income level were higher in accordance with the literature.[42,43] Since the students live in the borough, it can be predicted that the internet speed is low.

Participant 2.2% of the students are game addicts. Aktaş and Bostancı found students' Digital Game Addiction Scale mean score as 35.86±16.97, and reported that 6.3% of the students were in the addicted group and 1.6% were in the highly addicted group.[44] The digital game addiction scores differed significantly by gender. The addiction scores of male students were higher than female students. There are similar studies in the scientific literature.[42]

The study revealed a statistically significant, low-level negative correlation between the overall grade point average and the DGAS-7 Scale score. As the DGAS-7 Scale score increased, the overall grade point average decreased. This finding is similar to the scientific literature.[45] While gaming is a healthy deal with, it can pose some risks for college students who are still in their teens.

There was a statistically significant, low-level positive correlation between Fagerström Test for Nicotine Dependence and Digital Game Addiction Scale scores, consistent with the scientific literature.[46] There was no significant association between the Fagerström Test for Nicotine Dependence and the Internet Addiction Test. Besides studies in the scientific literature that are compatible with the findings of the studies, there are also studies showing a positive relationship between nicotine addiction and internet addiction.[6,47,48] A moderate positive relationship was found between the participants' Internet addiction and digital game addiction levels. There are studies several studies have associated Internet addiction with smartphone addiction.[42,49]

In the study, nicotine addiction levels were found to be higher in those who used/tried alcohol and those who used pills. Similar to the findings of the study, the scientific literature indicates a significant relationship between the use of tobacco, alcohol, and other substances.[35,50]

Conclusion

Despite the fact that societies continue to stand against all kinds of addiction and take precautions, all addiction rates continue to threaten society and mental health. In our study, the risky use of alcohol by students in the nursing department was higher than in other departments, indicating that health workers are

also under threat. In addition, individuals with risky use of alcohol have higher rates of nicotine addiction, the increase in game addiction as nicotine addiction increases and the increase in internet addiction as digital game addiction increases suggest a connection between addictions. We are of the opinion that individual approaches should be taken with all types of addiction, taking into account the level and degree of addiction, and that protection programs should also be organized for health workers.

Among the examined addiction types, although nicotine, alcohol, and substance addictions are old concepts, internet and game addiction are relatively newly defined concepts. All the addiction types discussed are significant public health problems for young individuals both in Turkey and around the world. This study demonstrates that individuals with any addiction are also at risk for other types of addiction. Hence, it is clear that it is necessary to provide university students with sufficient knowledge and equipment about the types of addictions, the diseases they can cause, the harm they cause to society, the methods of getting rid of this habit, and to develop protective approaches.

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Author contributions
Conceptualization, T.K.A. and S.B.; Methodology, T.K.A.; Software, T.K.A.; Validation, T.K.A. and S.B.; Formal Analysis, T.K.A.; Investigation, S.B.; Resources, T.K.A.; Data Curation, S.B..; Writing – Original Draft Preparation, S.B.; Writing – Review & Editing, T.K.A.; Visualization, S.B.; Supervision, T.K.A.; Project Administration, S.B.; Funding Acquisition, T.K.A. and S.B.

Conflicts of interest
The authors have no conflict of interest.

Data availability
The datasets used and/or analyzed during the current study are open from the corresponding author on reasonable request.

Ethics approval
Ethics committee approval was obtained before starting the study (App. No:2022/18-108-05.01.2022). Institutional permissions were obtained from the relevant University (Number: E-15812146-200-141779 / E-79170238-044-142345 / E-33205045-100-141777). Participants' verbal and written consents were obtained. The research was carried out per the principles of the Declaration of Helsinki.

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