

Research Article

Co-occurring Addictive Behaviors Among Public Employees in Türkiye: Associations of Alcohol/Substance Use, Nicotine Dependence, and Problematic Internet Use

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Abstract

Objectives: This study explored co-occurring addictive behaviors among public employees in Türkiye by examining alcohol/substance use, nicotine dependence, and problematic internet use, along with the relationships among these variables.

Methods: This descriptive, cross-sectional, and correlational study was conducted with 443 public employees recruited via snowball sampling in Yalova province. Data were collected online using a Personal Information Form, the Michigan Alcoholism and Substance Abuse Screening Test, the Fagerström Test for Nicotine Dependence, and the Problematic Internet Use Scale. Descriptive statistics and Pearson correlation analysis were performed.

Results: Of the participants, 34.5% reported smoking and 13.8% reported alcohol use. Alcohol/substance use was positively correlated with nicotine dependence ($r=0.253$, $p<0.001$). In contrast, problematic internet use was not significantly associated with alcohol/substance use or nicotine dependence. Problematic internet use was higher among younger participants, those with shorter professional experience, single participants, those with higher educational attainment, and those with longer daily internet use. Overall, alcohol/substance use was at a moderate level, nicotine dependence was low, and problematic internet use was at a low-to-moderate level.

Conclusion: The findings suggest that substance-related addictive behaviors may cluster among public employees, whereas problematic internet use may reflect different psychosocial pathways. Workplace-based screening, prevention, and psychosocial support initiatives may facilitate the early identification of addictive behaviors.

Keywords: Addictive behaviors, alcohol use, nicotine dependence, problematic internet use, public employees

Cite This Article: Kaşıkçı ÖH, Adıgüzel V. Co-occurring Addictive Behaviors Among Public Employees in Türkiye: Associations of Alcohol/Substance Use, Nicotine Dependence, and Problematic Internet Use. EJMI 2026;10(4):590–600.

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Submitted Date: May 24, 2026 **Revised Date:** September 15, 2026 **Accepted Date:** September 15, 2026

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Addictive behaviors are considered among the most critical public health challenges in modern societies. In particular, alcohol use, nicotine dependence, and behavioral addictions (e.g., problematic internet use) are multi-dimensional health problems that impair individuals' biological, psychological, and social functioning.^[1] The World Health Organization (WHO) defines addiction not only as a condition related to substance use but also as a chronic condition in which individuals lose control over a behavior and persist despite adverse consequences.^[2] Globally, tobacco use is associated with approximately 8 million deaths annually, while harmful alcohol use is reported to be responsible for nearly 3 million deaths each year.^[3] These data indicate that addictive behaviors constitute a public health issue that affects not only individual health outcomes but also community health and healthcare systems.

In Türkiye, one of the primary institutional structures established to combat addiction is the YEDAM.^[4] According to reports published by YEDAM, the number of individuals seeking help for tobacco, alcohol, and internet addiction has increased in recent years.^[4] Furthermore, a substantial proportion of applications to addiction counseling help-lines have been reported to originate from individuals of working age.^[4] This situation suggests that addictive behaviors are not limited to the younger population but have also become a significant public health concern for individuals in the workforce.

Addiction is regarded as a major risk factor not only in clinical populations but also among individuals in working life.^[5] Factors such as work-related stress, long working hours, shift work, and high workload may contribute to increased substance use behaviors among employees. Specifically, public employees may experience psychosocial stress due to job security concerns, institutional responsibilities, and bureaucratic pressures, which may trigger risky coping behaviors.^[5,6] Indeed, workplace stressors have been shown to be associated with problematic alcohol use among employees, a relationship that may be explained by psychological coping mechanisms.^[6] Similarly, numerous epidemiological studies have demonstrated significant associations between occupational stress and both alcohol and nicotine use.^[5,6]

Tobacco dependence is one of the most common forms of addiction globally and is highly prevalent among working populations. Nicotine dependence is not limited to individual health consequences; it also has substantial effects on work productivity, absenteeism, and healthcare expenditures.^[7] In particular, in stressful work environments, smoking has been reported to be maintained as a means of reducing stress and, over time, may develop into a pattern of dependence.^[8]

In recent years, the concept of addiction has expanded beyond substance-related disorders; behavioral addictions are now also considered within this scope. One such behavioral addiction, problematic internet use, is characterized by difficulty in controlling internet use and the negative impact of such use on academic, social, or occupational functioning.^[9,10] With the widespread adoption of digital technologies, internet addiction has increasingly attracted attention as a public health issue, particularly among working populations. Numerous studies have demonstrated that problematic internet use is associated with stress, loneliness, depression, and anxiety.^[11,12]

Studies examining the relationship between substance-related addictions and behavioral addictions indicate that different types of addiction can often co-occur. For example, a strong association has been reported between nicotine dependence and alcohol use disorders.^[13] Similarly, problematic internet use has been suggested to be associated with other addictive behaviors.^[14] Nevertheless, studies examining multiple types of addictive behaviors together in working populations, particularly among public employees, remain limited.

In Türkiye, a considerable proportion of research on addictive behaviors has focused on adolescents and university students.^[15,16] However, addictive behaviors in working adult populations remain relatively underexplored, particularly in occupational groups such as public employees. Public employees play active roles in essential public services, and identifying patterns of substance-related and behavioral addictions in this population may contribute to the development of preventive and early intervention strategies. In particular, examining alcohol/substance use, nicotine dependence, and problematic internet use together may provide a broader understanding of co-occurring addictive behaviors in professional life. In this context, the present study aimed to examine the levels of alcohol/substance use, nicotine dependence, and problematic internet use among public employees working in Yalova province, Türkiye, and to investigate the relationships among these behaviors. The study is expected to contribute to the addiction literature by evaluating substance-related and behavioral addictive behaviors together in a non-student working sample.

Aim of the Study

The aim of this study was to determine the levels of alcohol/substance use, nicotine dependence, and problematic internet use among public employees working in Yalova province, Türkiye, and to examine the relationships among these variables.

H1. Alcohol/substance use is significantly associated with nicotine dependence among public employees.

H2. Problematic internet use is significantly associated with alcohol/substance use and nicotine dependence among public employees.

Material and Methods

Study Design

This study employed a descriptive, cross-sectional, and correlational design. Before the study was initiated, ethical approval was obtained from the Scientific Research Ethics Committee for Social and Human Sciences of the Yalova University (no: 2025/465, date: 15.12.2025). Voluntary informed consent was obtained from all participants. This work was carried out in accordance with the Declaration of Helsinki. In this study, an AI-based generative tool (ChatGPT Plus) was used solely to assist with language and grammar editing.

Population and Sample

The target population of the study consisted of public employees working in Yalova province, Türkiye. Participants were recruited using the snowball sampling method. The minimum sample size was calculated using G*Power 3.1 for correlation analysis, assuming an effect size of 0.30, an alpha level of .05, and a statistical power of .95. The required minimum sample size was calculated as 420 participants. To compensate for potential data loss and incomplete responses, the study was completed with 443 public employees.

Data Collection Instruments

The study data were collected using the Personal Information Form, the Michigan Alcoholism and Substance Abuse Screening Test (MAST), the Fagerström Test for Nicotine Dependence (FTND), and the Problematic Internet Use Scale (PIUS).

Personal Information Form: This form, developed by the researchers, consisted of 16 items assessing participants' sociodemographic and behavioral characteristics, including age, gender, educational status, marital status, duration of professional experience, smoking status, alcohol use status, and daily internet use.

Michigan Alcoholism and Substance Abuse Screening Test (MAST). The MAST was developed by Selzer (1971) to assess problems related to alcohol and substance use.^[17] The scale consists of 25 items, and higher scores indicate greater levels of alcohol/substance-related problems. The Turkish validity and reliability study was conducted by Coskunol et al.^[18] and the original literature reported a Cronbach's alpha coefficient of approximately 0.90. In the present study, the Cronbach's alpha coefficient was 0.675.

Fagerström Test for Nicotine Dependence (FTND). The FTND was developed to assess nicotine dependence and

was revised into its current 6-item form by Heatherton et al.^[8] Higher scores indicate greater nicotine dependence. The Turkish validity and reliability study was conducted by Uysal et al.^[19], who reported that the scale had a unidimensional structure and an adequate level of reliability. In the present study, the Cronbach's alpha coefficient was 0.764.

Problematic Internet Use Scale (PIUS). The PIUS was developed by Ceyhan et al.^[20] to assess problematic internet use. The scale consists of 33 items rated on a 5-point Likert scale, with total scores ranging from 33 to 165. Higher scores indicate more problematic and unhealthy internet use. In the original study, the internal consistency coefficient was reported as 0.94. In the present study, the Cronbach's alpha coefficient was 0.947.

Data Collection

Data were collected from public employees working in Yalova province, Türkiye, between December 2025 and February 2026 using the snowball sampling method. In this process, eligible participants were asked to share the online survey link with other public employees within their professional and social networks. The data were collected online via Google Forms. To reduce the possibility of duplicate entries, the relevant settings were activated during the preparation of the online form. Individuals aged 18 years or older who were employed in any public institution in Yalova province were eligible to participate. Before accessing the questionnaire, all participants were presented with an online informed consent form; only those who provided consent were allowed to proceed. Individuals who declined to participate (n=28) were excluded.

Statistical Analysis

The data were analyzed using IBM SPSS Statistics for Windows, Version 25.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize participant characteristics and scale scores. Reliability analyses were performed to assess the internal consistency of the measurement tools. The normality of continuous variables was evaluated using the Kolmogorov-Smirnov test. Independent samples t-tests were used for comparisons between two groups, and one-way analysis of variance was used for comparisons among three or more groups. Post hoc analyses were conducted when appropriate. For descriptive clarity, age categories were combined into broader groups in Table 1, whereas the original five-year categories were retained in Table 2 because they formed the basis of the inferential and post hoc analyses. Pearson correlation analysis was used to examine the relationships among alcohol/substance use, nicotine dependence, and problematic internet use. Statistical significance was set at $p < 0.05$.

Table 1. Distribution of participants according to their demographic characteristics

Variables	n	%
Age		
20–30	72	16.2
31–40	147	33.2
41–50	144	32.5
≥51	80	18.1
Gender		
Female	213	48.1
Male	230	51.9
Duration of professional experience		
Less than 1 year	12	2.7
1–5 years	83	18.7
6–10 years	73	16.5
11–15 years	85	19.2
16–20 years	65	14.7
20 years and above	125	28.2
Marital status		
Single	102	23.0
Married	311	70.2
Divorced	30	6.8
Educational status		
Primary school / Middle school	5	1.1
High school	52	11.7
Bachelor's degree	280	63.2
Postgraduate degree	106	23.9
Smoking status		
No	290	65.5
Yes	153	34.5
Alcohol use status		
No	382	86.2
Yes	61	13.8
Daily internet use		
1–3 hours	249	56.2
4–6 hours	154	34.8
7 hours and above	40	9.0
Total	443	100.0

Results

Table 1 presents the distribution of participants according to their demographic characteristics. The largest proportion of participants was in the 31–40-year age group (33.2%, $n=147$), while 51.9% were male. In terms of professional ex-

perience, 28.2% had 20 years or more of work experience. With respect to marital status, 70.2% were married, and 63.2% held a bachelor's degree. Additionally, 34.5% of the participants reported smoking, whereas 13.8% reported alcohol use. Daily internet use indicated that 56.2% of the participants used the internet for 1–3 hours per day.

Participants' scale scores showed several statistically significant differences according to demographic and behavioral characteristics. Problematic Internet Use Scale (PIUS) scores differed significantly by age group ($p<0.001$). Specifically, participants aged 26–30, 31–35, and 36–40 years had significantly higher PIUS scores than those aged 51–55 years, while participants aged 31–35 years also had higher PIUS scores than those aged 46–50 years. A significant difference in PIUS scores was also observed based on the duration of professional experience ($p<0.001$). Participants with 1–5 years of professional experience had significantly higher PIUS scores than those with 6–10 years, 16–20 years, and 20 years or more of professional experience. Regarding marital status, statistically significant differences were found in both Fagerström Test for Nicotine Dependence (FTND) and PIUS scores ($p<0.001$). Divorced participants had higher FTND scores than married participants, whereas single participants had higher PIUS scores than married participants. PIUS scores also differed significantly according to educational status ($p<0.001$), with participants holding bachelor's or postgraduate degrees scoring higher than those with a high school education. In terms of smoking status, FTND scores were significantly higher among smokers than non-smokers ($p<0.001$). According to alcohol use status, both Michigan Alcoholism and Substance Abuse Screening Test (MAST) and FTND scores differed significantly ($p<0.001$), with alcohol users demonstrating higher scores than non-users on both measures. In addition, PIUS scores varied significantly according to daily internet use duration ($p<0.001$). Participants who reported using the internet for 7 hours or more per day had significantly higher PIUS scores than those who used it for 1–3 hours or 4–6 hours per day, and those using the internet for 4–6 hours per day also had higher PIUS scores than those using it for 1–3 hours per day. No statistically significant differences were found in any scale scores based on gender (Table 2). Table 3 presents the descriptive statistics of the scales used in the study. The mean scores were 8.84 ± 4.32 for the MAST, 2.89 ± 2.68 for the FTND, and 52.12 ± 17.59 for the PIUS.

Pearson correlation analysis was used to assess the relationships among the scales. A statistically significant positive correlation was identified between the MAST and the FTND ($r=0.253$; $p<0.001$) (Table 4). However, the PIUS was not significantly correlated with either of the other scales.

Table 2. Comparison of scale scores according to the demographic characteristics of the participants

Variables	MAST Mean±SD	FTND Mean±SD	PIUS Mean±SD
Age			
20–25 (1)	13.20±1.10	4.20±2.20	58.00±21.23
26–30 (2)	9.68±3.89	2.14±2.59	56.16±18.80
31–35 (3)	9.35±4.12	3.59±2.94	57.61±21.86
36–40 (4)	8.04±4.52	2.72±2.54	55.30±18.78
41–45 (5)	8.28±5.32	2.55±2.40	50.48±17.72
46–50 (6)	7.27±4.24	3.15±3.03	47.78±13.55
51–55 (7)	9.27±3.10	3.13±2.85	43.84±6.53
56 years and above (8)	8.50±1.91	2.00±2.54	48.50±11.06
F	1.318	1.097	4.714
p	0.248	0.368	<0.001*
Post hoc	–	–	2>7, 3>7, 4>7, 3>6
Gender			
Female	8.96±4.57	3.05±2.91	51.62±16.89
Male	8.77±4.20	2.79±2.54	52.59±18.23
t	0.229	0.602	-0.581
p	0.819	0.548	0.562
Duration of professional experience			
Less than 1 year (1)	10.50±0.71	1.67±1.51	47.83±9.24
1–5 years (2)	8.74±4.53	3.30±2.72	59.90±22.58
6–10 years (3)	8.87±4.44	3.04±2.65	51.59±16.28
11–15 years (4)	8.45±4.71	2.55±2.62	54.01±18.25
16–20 years (5)	8.89±5.13	3.05±2.82	50.23±17.16
20 years and above (6)	9.04±3.39	2.86±2.84	47.37±12.51
F	0.102	0.521	5.889
p	0.991	0.760	<0.001*
Post hoc	–	–	2>3, 2>5, 2>6
Marital status			
Single (1)	9.21±4.35	3.18±2.29	56.25±19.80
Married (2)	8.65±4.34	2.44±2.53	50.77±16.57
Divorced (3)	9.10±4.43	5.00±3.39	52.10±18.28
F	0.212	7.539	3.772
p	0.809	0.001*	0.024*
Post hoc	–	3>2	1>2
Educational status			
Primary school / Middle school (1)	7.00±–	1.33±1.53	53.40±21.38
High school (2)	7.72±5.05	2.11±1.77	45.33±12.33
Bachelor's degree (3)	8.91±4.22	3.08±2.83	52.66±18.48
Postgraduate degree (4)	9.40±4.21	3.17±2.96	53.95±16.60
F	0.630	1.391	3.113
p	0.597	0.248	0.026*
Post hoc	–	–	3>2, 4>2

Table 2. Continued

Variables	MAST Mean±SD	FTND Mean±SD	PIUS Mean±SD
Smoking status			
No	8.15±4.74	1.14±1.95	53.25±18.03
Yes	9.45±3.84	2.97±2.69	49.97±16.55
t	-1.694	-2.372	1.871
p	0.093	0.049*	0.062
Alcohol use status			
No	6.09±4.06	2.65±2.74	52.48±18.02
Yes	11.72±2.20	3.68±2.35	49.89±14.47
t	-9.572	-2.057	1.069
p	<0.001*	0.041*	0.286
Daily internet use duration			
1–3 hours (1)	8.00±4.17	2.72±2.61	47.90±14.48
4–6 hours (2)	9.67±4.63	3.09±2.79	55.62±18.39
7 hours and above (3)	9.84±3.70	3.35±2.91	64.90±22.70
F	2.549	0.578	22.816
p	0.082	0.562	<0.001*
Post hoc	–	–	3>1, 3>2, 2>1

*p<0.001; MAST: Michigan Alcoholism and Substance Abuse Screening Test; FTND: Fagerström Test for Nicotine Dependence; PIUS: Problematic Internet Use Scale.

Table 3. Descriptive statistics of the scales used in the study

Scales	Min–Max	Mean±SD
Michigan Alcoholism and Substance Abuse Screening Test	0.00–16.00	8.84±4.32
Fagerström Test for Nicotine Dependence	0.00–10.00	2.89±2.68
Problematic Internet Use Scale	33.00–144.00	52.12±17.59

Min: Minimum; Max: Maximum; SD: Standard deviation.

Table 4. Correlations among the scales used in the study

Variables	1	2	3
1. Michigan Alcoholism and Substance Abuse Screening Test			
r	1.000	0.253	-0.071
p	–	0.034*	0.433
2. Fagerström Test for Nicotine Dependence			
r		1.000	0.136
p		–	0.086
3. Problematic Internet Use Scale			
r			1.000
p			–

*p<0.001

Discussion

This study examined the levels of alcohol and substance use, nicotine dependence, and problematic internet use among public employees working in Yalova province and evaluated the relationships among these variables.

The findings showed that patterns of addictive behaviors differed according to age, duration of professional experience, marital status, educational level, smoking and alcohol use, and daily internet use duration. Specifically, the finding that problematic internet use scores were higher among younger participants and those with shorter professional experience suggests that excessive digital use may be more pronounced during early adulthood and the early career period. Recent studies conducted in adult samples have likewise reported that age is a crucial determinant of problematic internet use, with risk increasing

among younger individuals. A study conducted in Türkiye among adults aged 30 years and older showed that younger age was associated with higher internet addiction scores and that age and stress were among the significant predictors of problematic internet use profiles.^[21,22] Multinational longitudinal studies in adult populations have also demonstrated that problematic internet use is not limited to adolescence but may persist into adulthood and be influenced by sociodemographic factors.^[23] In this context, the higher scores observed among participants aged 26–40 years may reflect the combined influence of life stage, occupational demands, online coping tendencies, and the greater integration of digital media into daily functioning. Nevertheless, age alone may not independently explain problematic internet use. Differences in digital familiarity, stress exposure, occupational responsibilities, and preferred coping strategies across age groups may collectively have contributed to the observed pattern.

The finding that participants with 1–5 years of professional experience had higher problematic internet use scores than more experienced groups appears consistent with the age-related findings. Individuals in the early career period may experience greater stress in terms of occupational adaptation and role expectations, which may in turn promote more intensive internet use as a means of escape, relaxation, or social compensation. Recent theoretical and empirical studies on problematic internet use emphasize that online behaviors often serve functions related to coping with stress, emotion regulation, and compensation for unmet social needs.^[24,25] Accordingly, the increase in problematic internet use with lower professional experience may be explained not only by a “technology-oriented generation” effect but also by the psychosocial burden associated with early professional life. However, given the cross-sectional design, this finding should be interpreted as relational rather than causal, as lower professional experience substantially overlaps with younger age. This overlap makes it difficult to determine whether the observed difference is primarily associated with professional experience, age, or the combined influence of both factors. Future studies using multivariable analyses may clarify the independent contributions of age, professional experience, occupational stress, and coping strategies to problematic internet use. The finding that single participants had higher problematic internet use scores than married participants may indicate the protective role of close social bonds and regular face-to-face interactions. Studies conducted among working-age adults have similarly reported that problematic internet use is associated with being single, which supports the present result.^[26] In addition, recent longitudinal meta-analyses have shown a bidirectional relationship

between loneliness and problematic media/internet use, suggesting that loneliness may increase problematic use, while problematic use may also deepen loneliness over time.^[27] Within this framework, although marriage or a stable partner relationship may not be equally protective for all individuals, factors such as social support, mutual monitoring, and a more structured daily life may help limit problematic internet use. Similarly, the higher nicotine dependence scores observed among divorced participants compared with married participants may be related to loss of social support, emotional burden, and stress. Recent studies conducted in adult samples have similarly identified younger age as an important sociodemographic correlate of problematic internet use, with younger individuals generally reporting higher problematic internet use scores.^[28] Taken together, the higher problematic internet use scores observed among single participants may reflect the combined influence of younger age, more intensive digital engagement, and greater reliance on online environments for social interaction, entertainment, and coping.

Although the higher problematic internet use scores observed among participants with bachelor’s and postgraduate degrees compared with high school graduates may appear unexpected, this finding is consistent with evidence reported in recent literature. A study conducted in Türkiye among adults identified educational level as a significant predictor of internet addiction, and another study in working-age adults reported that higher educational attainment was associated with problematic internet use.^[25,26] This may be related to the fact that individuals with higher education use the internet not only for entertainment but also more intensively for work, academic production, communication, news monitoring, and multitasking. In other words, as constant exposure to digital environments and the necessity of being online increase, the boundary between functional use and problematic use may become blurred. Therefore, although digital competence may increase with educational level, the risk of excessive digital use may also rise simultaneously.

The finding that smokers had higher FTND scores is expected and consistent with the structure of the scale. More importantly, however, participants who consumed alcohol had higher scores on both the MAST and the FTND. This result suggests that addictive behaviors may cluster together. Recent studies have shown that tobacco and alcohol use frequently co-occur, that higher cigarette consumption is associated with greater risk of alcohol dependence, and that same-day or same-context co-use may increase cigarette consumption.^[29,30] Thus, the higher nicotine dependence scores observed among alcohol users may be explained by shared neurobiological reward mechanisms,

conditioned patterns of co-use, and contextual social influences. These findings are important because they indicate that different types of addictive behaviors do not progress independently and that substance use and nicotine dependence may share common risk backgrounds.

The increase in problematic internet use scores with longer daily internet use duration is one of the strongest findings of this study and is highly consistent with the literature. In particular, the finding that scores were higher among participants who used the internet for 7 hours or more per day than among those who used it for 1–3 hours or 4–6 hours per day suggests that problematic internet use reflects not only a qualitative but also a quantitative exposure pattern. Current studies indicate that increased time spent online elevates the risk of internet addiction and that high-reward digital activities, such as short-video viewing and gaming, may further amplify this risk.^[31,32] Moreover, problematic internet use has been reported to be associated with lower psychological well-being, poorer sleep quality, and lower quality of life.^[21,22] Therefore, this finding points to a broader behavioral risk domain that may affect health.

When the overall levels of the scales used in the study were examined, participants' alcohol and substance use scores were found to be at a moderate level. This suggests that risk-related behaviors associated with alcohol and substance use are not entirely low in this working population and that a subgroup with elevated risk may exist. The literature indicates that occupational stress, workload, and psychosocial factors may increase risky alcohol and substance use among employees.^[33] In this context, it may be argued that work-related stressors can influence individuals' substance use behaviors.

With regard to nicotine dependence, participants were generally found to have low levels. One study has reported that work-related stress, workload, and long working hours may influence smoking behavior.^[34] Therefore, it is important to develop preventive interventions and awareness programs targeting nicotine use in employee populations. In terms of problematic internet use, participants' scores may be considered generally at a low-to-moderate level. The literature suggests that problematic internet use is particularly prevalent among younger and student populations, whereas it is generally observed at lower levels among working populations.^[35] This may be related to the fact that individuals in working life maintain more balanced regulation of time management, work responsibilities, and daily routines.

In the present study, a positive correlation was identified between alcohol/substance use and nicotine dependence. This finding is consistent with the co-occurring addiction patterns frequently reported in the literature. Previous

studies have shown that nicotine use may increase alcohol and other substance use, and that these substances may reinforce one another through shared neurobiological reward mechanisms.^[36] In addition, global epidemiological studies have shown that risky alcohol use is more common among smokers.^[37] This suggests that addictive behaviors are often shaped by common biological and psychosocial risk factors.

It is also well known that work-related factors may play a role in the development of addictive behaviors. Various studies have demonstrated that occupational stress, workload, shift work, and work–life balance problems may increase alcohol and tobacco use among employees.^[33,34] In stressful working environments, individuals may use smoking and alcohol as short-term coping strategies. Public employees may experience certain levels of psychosocial stress due to service-related responsibilities and bureaucratic processes, which may facilitate the emergence of such behaviors.

In this study, no significant relationship was found between problematic internet use and other types of addictive behaviors. In recent years, internet addiction has been evaluated within the framework of behavioral addictions and has increasingly been recognized as a growing problem, particularly among younger populations.^[38] However, some studies suggest that behavioral addictions may be shaped by psychosocial dynamics different from those underlying substance-related addictions. Problematic internet use has been reported to be more closely associated with loneliness, social isolation, and psychological well-being.^[39,40] Therefore, problematic internet use may not always be directly related to substance-related addictions.

Most participants reported no alcohol consumption and relatively limited daily internet use. The limited variability in these characteristics and the unequal sizes of the relevant subgroups may have reduced the precision of the group comparisons. Therefore, findings concerning participants who reported alcohol consumption or longer daily internet use should be interpreted cautiously because these subgroups were underrepresented in the sample. Importantly, time spent online reflects the quantitative dimension of internet use but does not necessarily indicate problematic use, which also involves impaired control, interference with daily functioning, and adverse psychosocial consequences. Accordingly, findings related to daily internet use duration should be interpreted alongside the problematic internet use scale scores rather than as an equivalent indicator of problematic internet use.

Limitations

This study has several limitations. First, because the study employed a cross-sectional design, the relationships be-

tween the variables cannot be interpreted causally; the findings demonstrate associations only and do not permit definitive conclusions regarding cause-and-effect relationships. Second, the use of snowball sampling, although facilitating access to participants, may have introduced selection bias and limited the representativeness of the sample. Therefore, the generalizability of the findings to all public employees should be approached with caution. Third, the data were collected using self-report measures. Participants' reports of alcohol use, smoking, and internet use may have been affected by social desirability and recall biases, potentially resulting in the underreporting of addictive behaviors, particularly those perceived as socially stigmatizing. Fourth, the predominance of participants who reported no alcohol consumption and relatively limited daily internet use resulted in restricted variability and unequal subgroup sizes. This may have reduced the statistical power of the relevant comparisons and limited the generalizability of the findings to individuals with higher levels of alcohol consumption or online engagement. In addition, although problematic internet use was assessed using a scale, daily internet use duration should not be interpreted as an equivalent indicator of problematic use, because time spent online does not necessarily reflect impaired control or functional consequences. Finally, the study included only public employees working in Yalova Province. Future studies using probability-based sampling methods and larger samples drawn from different geographical regions and occupational groups are recommended to provide a more comprehensive understanding of the factors associated with addictive behaviors.

Conclusion

This study revealed a significant relationship between alcohol/substance use and nicotine dependence among public employees, while also suggesting that problematic internet use may be shaped by different dynamics. The findings indicate that some addictive behaviors may co-occur in working populations, whereas behavioral addictions may be associated with risk factors that differ from those of substance-related addictions.

The results have important implications for both occupational health and public health. In particular, the tendency of alcohol and nicotine use to co-occur suggests that addictive behaviors in employee populations should be addressed through holistic approaches. Workplace stress management programs, psychosocial support services, and addiction awareness initiatives may play important roles in reducing risky behaviors among employees.

The role of health professionals is particularly critical. Occupational physicians, nurses, psychologists, and other

mental health professionals are in an important position to identify addictive behaviors at an early stage in employee populations. Screening programs, counseling services, and psychoeducational interventions delivered by health professionals may contribute to the early detection and prevention of addictive behaviors. In addition, interventions aimed at improving stress management and healthy coping skills among employees may be effective in reducing addiction risk.

Disclosures

Ethics Committee Approval: The study was approved by the Yalova University Scientific Research Ethics Committee for Social and Human Sciences (no: 2025/465, date: 15.12.2025).

Informed Consent: Informed consents were obtained from all participants.

Conflicts of Interest: The authors declared no conflict of interest.

Funding: The authors declared that this research received no external funding.

Use of AI for Writing Assistance: The authors declared that an AI-based generative tool (ChatGPT Plus) was used solely to assist with language and grammar editing.

Authorship Contributions: Concept – VA, ÖHK; Design – VA, ÖHK; Supervision – VA, ÖHK; Fundings – VA, ÖHK; Materials – VA, ÖHK; Data Collection or Processing: VA, ÖHK; Analysis or Interpretation: VA, ÖHK; Literature Search: VA, ÖHK; Writing: VA, ÖHK; Critical Review: VA, ÖHK.

Peer-review: Externally peer-reviewed.

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