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Research Article

Behavioral addiction tendencies and associated psychosocial factors in faculty members

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Abstract

Objective: Behavioral addictions may be associated with psychological symptoms and work-related factors. However, studies evaluating multiple behavioral addiction domains among faculty members remain limited. This study aimed to investigate behavioral addiction tendencies and associated psychosocial factors among faculty members.

Methods: This cross-sectional online study included 202 faculty members. Participants completed an online survey consisting of a sociodemographic questionnaire, the Depression Anxiety Stress Scale-21 (DASS-21), Pittsburgh Sleep Quality Index (PSQI), Bergen Work Addiction Scale (BWAS), Smartphone Addiction Scale–Short Version (SAS-SV), Bergen Social Media Addiction Scale (BSMAS), Internet Gaming Disorder Scale–Short Form (IGDS9-SF), Modified Yale Food Addiction Scale (mYFAS 2.0), and Online Gambling Addiction Scale (OGAS). Group comparisons and correlation analyses were performed.

Results: Behavioral addiction tendencies were observed at varying levels among faculty members, with work addiction, smartphone addiction, and social media addiction showing the highest scores. Depression, anxiety, and stress were positively associated with work addiction, smartphone addiction, social media addiction, and internet gaming disorder scores. Faculty members working more than 40 hours per week had significantly higher work addiction scores. Smartphone use, social media use, and gaming-related behaviors were positively associated with one another, whereas online gambling/betting tendencies demonstrated a distinct pattern.

Conclusion: Behavioral addiction tendencies in faculty members appear to be associated with psychological symptoms and selected work-related characteristics. These findings contribute to the limited literature examining multiple behavioral addiction domains among faculty members and highlight the importance of considering behavioral addictions within a broader psychosocial context.

Keywords: Behavioral addictions, Faculty members, Work addiction, Psychological symptoms

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INTRODUCTION

Although addiction has traditionally been conceptualized within the framework of substance use disorders, increasing evidence suggests that certain repetitive behaviors share neurobiological, cognitive, and behavioral mechanisms similar to those involved in addictive processes. Both substance-related and behavioral addictions have been associated with dysregulation of the mesolimbic reward system, particularly dopaminergic pathways involved in reward processing and reinforcement, as well as alterations in prefrontal brain regions responsible for inhibitory control and decision-making. Repeated engagement in rewarding behaviors may strengthen craving, reinforce maladaptive learning processes, and ultimately promote compulsive behavioral patterns despite adverse consequences. These shared mechanisms provide a neurobiological rationale for conceptualizing behavioral addictions within the addiction spectrum (Brand et al., 2019; Hunt et al., 2024; Volkow et al., 2016). Consequently, increasing attention has been directed toward behavioral addictions, particularly in the context of rapid technological advances and evolving social environments. Various behavioral addiction domains, including internet gaming disorder, compulsive buying, pornography- and sex-related behaviors, and food-related behaviors, have attracted growing research interest. Internet gaming disorder remains one of the most extensively investigated technology-related behavioral addictions, with a rapidly expanding body of evidence over the past decade (Kuss & Griffiths, 2012; Zhuang et al., 2023). The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) recognized gambling disorder as a non-substance-related addictive disorder under the broader category of substance-related and addictive disorders, providing an important indication of the clinical relevance of behavioral addictions (APA, 2013). Internet gaming disorder was included as a condition requiring further investigation, whereas other behavioral patterns were not incorporated because of insufficient evidence regarding diagnostic criteria and disease course (APA, 2013).

Behavioral addiction is generally defined as the persistent and repetitive engagement in a specific activity despite adverse consequences and impaired control over the behavior (Grant et al., 2010). One of the most widely accepted frameworks for conceptualizing behavioral addictions is Griffiths' components model, which proposes six core dimensions: salience, mood modification, tolerance, withdrawal, conflict, and relapse (Griffiths, 2005). Behavioral patterns such as work addiction, social media addiction, internet gaming disorder, and problematic smartphone use have been evaluated within this framework (Fournier et al., 2023). More recently, the Interaction of Person–Affect–Cognition–Execution (I-PACE) model, originally proposed by Brand et al. (2016) and subsequently updated and generalized to behavioral addictions beyond internet-use disorders (Brand et al., 2019), has provided a broader neurocognitive framework in which individual predispositions (e.g., personality traits and psychopathology) interact with affective and cognitive responses to influence inhibitory control, decision-making, and the development of addictive behaviors. This framework also provides a theoretical basis for understanding the development and maintenance of behavioral addictions, as well as their associations with psychosocial factors such as depression, anxiety, stress, and sleep quality (Brand et al., 2019). This perspective suggests that examining multiple behavioral addiction domains together may provide a more comprehensive understanding, particularly in populations in which several risk behaviors may co-occur.

The social and psychological consequences of behavioral addictions have led to growing research interest. Meta-analyses indicate prevalence estimates ranging from approximately 10–14% for internet addiction, 24–27% for smartphone addiction, 6–17% for social media addiction, 10–21% for food addiction, and 3–7% for gambling-related problems (Alimoradi et al., 2022; Meng et al., 2022). Similar findings have also been reported in Turkish and regional studies (Akpinar Aslan et al., 2021; Gürbüzer & Gürcan Yıldırım, 2025).

However, most existing studies have focused on the general population or student samples, whereas occupational groups, particularly faculty members, remain comparatively underinvestigated.

The I-PACE framework proposes that affective processes and individual characteristics contribute substantially to the development of problematic behaviors (Brand et al., 2016, 2019). Increased levels of depression, anxiety, and stress may lead individuals to engage in specific behaviors as a means of emotional regulation, avoidance, or temporary relief, whereas behavioral addiction patterns themselves may contribute to psychological distress over time (Brand et al., 2014). Previous studies have reported bidirectional associations between psychological symptoms and behavioral addiction domains such as internet addiction and food addiction (Lin et al., 2025; Sun et al., 2025). Accordingly, evaluating behavioral addiction tendencies together with depression, anxiety, and stress may contribute to a more comprehensive understanding of these relationships.

Sleep quality represents another psychosocial factor potentially associated with behavioral addiction tendencies. Impaired sleep may negatively affect executive functioning and reduce inhibitory control, thereby increasing vulnerability to problematic behavioral patterns. Previous studies have reported associations between poor sleep quality and internet addiction, internet gaming disorder, and social media addiction. Existing evidence suggests a potentially bidirectional relationship in which sleep disturbances and behavioral addiction tendencies may mutually reinforce one another (Alimoradi et al., 2019; Han et al., 2024).

Behavioral addictions have generally been examined as isolated constructs rather than multidimensional patterns. Considering multiple behavioral addiction domains together may provide a broader perspective on shared mechanisms and overlapping behavioral profiles. Although previous studies have primarily focused on individual behavioral addiction domains, studies simultaneously examining multiple behavioral addiction tendencies together with their associated psychosocial factors among faculty members remain scarce. The increasing digitalization of academic life and growing occupational demands may place faculty members at risk for both technology-related behavioral addiction tendencies and psychological difficulties, including depression, anxiety, and stress. In Turkey, faculty members commonly undertake multiple academic responsibilities, including teaching, research, academic advancement, and administrative duties, often extending beyond regular working hours, resulting in a substantial workload (Çelik et al., 2023). These occupational characteristics make faculty members a theoretically relevant and practically important population for investigating behavioral addiction tendencies. Accordingly, the present study simultaneously examines multiple behavioral addiction domains together with depression, anxiety, stress, and sleep quality among faculty members, aiming to provide a multidimensional understanding of behavioral addiction tendencies and their psychosocial correlates in this occupational group. The present study aimed to investigate behavioral addiction tendencies and associated psychosocial factors among faculty members and tested the following hypotheses:

H1. Behavioral addiction tendencies are expected to be observed across multiple behavioral domains among faculty members, including social media use, smartphone use, internet gaming, work-related behaviors, online gambling/betting, and eating behaviors.

H2a. Higher weekly working hours will be positively associated with work addiction tendencies.

H2b. Longer daily internet use will be positively associated with technology-related behavioral addiction domains, including problematic smartphone use, social media addiction, and internet gaming disorder.

H3. Depression, anxiety, and stress levels are expected to be positively associated with each behavioral addiction domain examined, including work addiction, problematic smartphone use, social

media addiction, internet gaming disorder, online gambling/betting, and food addiction.

H4. Poor sleep quality is positively associated with behavioral addiction scale scores.

H5. Positive associations exist among digital behavioral addiction domains, including social media use, smartphone use, internet gaming, and online gambling/betting.

METHODS

Participants

The study included 202 faculty members aged 18 years and older who were actively employed at a university. No specific university or geographical region in Türkiye was targeted during recruitment. The online survey was disseminated through academic networks, and faculty members from universities across Türkiye were invited to participate on a voluntary basis. Electronic informed consent was obtained from all participants before participation. As the study aimed to evaluate behavioral addiction tendencies among actively employed faculty members, no additional exclusion criteria were applied.

Procedure

All participants completed an online survey developed by the researchers using the Google Forms platform. Data were collected between January and April 2026. Survey links were distributed through e-mail and social media platforms (e.g., Facebook professional groups and WhatsApp groups), and participants were recruited using convenience sampling, supplemented by snowball dissemination, whereby initial recipients were encouraged to share the survey link with other eligible faculty members. The first page of the survey contained an informed consent form, and participants were required to provide electronic informed consent before proceeding. The survey was conducted anonymously, and no personally identifiable information (e.g., names or e-mail addresses) was collected. An a priori power analysis was conducted for the planned correlation analyses. Assuming an expected correlation coefficient of r = .20, a statistical power of 80%, and a two-sided significance level of .05, the minimum required sample size was calculated as 194 participants. The final sample exceeded this requirement. The survey included, in sequence, a sociodemographic questionnaire, Depression Anxiety Stress Scale-21 (DASS-21), Pittsburgh Sleep Quality Index (PSQI), Bergen Work Addiction Scale (BWAS), Smartphone Addiction Scale–Short Version (SAS-SV), Bergen Social Media Addiction Scale (BSMAS), Internet Gaming Disorder Scale–Short Form (IGDS9-SF), Modified Yale Food Addiction Scale (mYFAS 2.0), and Online Gambling Addiction Scale (OGAS).

The survey was configured to prevent unanswered items. Completion of all questionnaires required approximately 15 minutes.

Data Collection Tools

Sociodemographic Questionnaire

The questionnaire was developed by the researchers and included items regarding age, gender, work-related characteristics, and internet-use behaviors.

Depression Anxiety Stress Scale-21 (DASS-21)

The DASS-21 (Henry & Crawford, 2005) is a 21-item, four-point Likert-type scale designed to assess symptoms of depression, anxiety, and stress. Each subscale consists of seven items, and higher scores indicate greater symptom severity. The Turkish version validated by Sarıcam (2018) was used. In the current sample, Cronbach's α coefficients for the depression, anxiety, and stress subscales of the DASS-21 were .793, .830, and .835, respectively.

Pittsburgh Sleep Quality Index (PSQI)

The PSQI (Buysse et al., 1989) is a widely used instrument assessing sleep quality across seven components, including sleep duration, sleep latency, habitual sleep efficiency, sleep disturbances, use of sleep medication, daytime dysfunction, and subjective sleep quality. Total scores above 5 indicate poor sleep quality. The Turkish version validated by Agargun et al. (1996) was used. In the current sample, Cronbach's α coefficient was .709.

Bergen Work Addiction Scale (BWAS)

The BWAS (Andreassen et al., 2012) is a seven-item, five-point Likert-type scale assessing work addiction tendencies. Higher scores indicate greater work addiction tendency. The Turkish version validated by Ozsoy (2020) was used. In the current sample, Cronbach's α coefficient was .820.

Smartphone Addiction Scale–Short Version (SAS-SV)

The SAS-SV (Kwon et al., 2013) is a 10-item, six-point Likert-type scale assessing problematic smartphone use risk. Higher scores indicate greater smartphone addiction tendency. The Turkish version validated by Noyan et al. (2015) was used. In the current sample, Cronbach's α coefficient was .920

Bergen Social Media Addiction Scale (BSMAS)

The BSMAS (Andreassen et al., 2016) is a six-item, five-point Likert-type scale evaluating social media addiction tendency. Higher scores indicate greater risk. The Turkish version validated by Demirci (2019) was used. In the current sample, Cronbach's α coefficient was .901.

Internet Gaming Disorder Scale–Short Form (IGDS9-SF)

The IGDS9-SF (Pontes & Griffiths, 2015) was developed according to DSM-5 diagnostic criteria and consists of nine items assessing internet gaming disorder symptoms. Higher scores indicate greater gaming-related problems. The Turkish version validated by Aricak et al. (2018) was used. In the current sample, Cronbach's α coefficient was .916.

Modified Yale Food Addiction Scale Version 2.0 (mYFAS 2.0)

The mYFAS (Schulte & Gearhardt, 2017) 2.0 is a 13-item instrument based on DSM-5 symptom criteria for food addiction. Higher scores indicate greater food addiction tendency. The Turkish version validated by Tok et al. (2023) was used. In the current sample, Cronbach's α coefficient was .930.

Online Gambling Addiction Scale (OGAS)

The OGAS was developed by Karaibrahimoglu et al. (2022) and consists of 21 items across three dimensions: motivation, addiction, and negative psychology. Scores range from 21 to 105, with higher scores indicating greater online gambling/betting addiction tendency. A cut-off score of 27 has been proposed, with higher values indicating risk status. In the current sample, Cronbach's α coefficient was .998.

Statistical Analysis

Statistical analyses were performed using IBM SPSS Statistics for Windows, version 23.0 (IBM Corp., Armonk, NY, USA). Data distribution was assessed using histograms, Q–Q plots, and Shapiro–Wilk tests. Because scale scores did not meet the assumption of normality, nonparametric tests were applied.

Descriptive statistics included medians, interquartile ranges (Q1–Q3), minimum–maximum values, mean ranks, frequencies (n), and percentages (%), as appropriate. Missing data were identified for PSQI-derived variables (n = 9, 4.5%; valid n = 193) and academic experience duration in months (n = 3, 1.5%; valid n = 199). No imputation procedures were performed, and analyses were conducted using available data.

The Mann–Whitney U test was used for comparisons between two independent groups, whereas the Kruskal–Wallis H test was applied for comparisons involving three or more groups. Bonferroni correction was used for post hoc pairwise analyses following significant Kruskal–Wallis tests. Because the analyses were hypothesis-driven and based on prespecified comparisons, no global adjustment for multiple testing was applied. Associations between variables were examined using Spearman's rank correlation analysis. Statistical significance was set at $p < .05$.

Ethical approval

This study was conducted in accordance with the Declaration of Helsinki and approved by the Non-Interventional Scientific Research Ethics Committee of Tokat Gaziosmanpaşa University (Approval No: 25-MOBAEK-455; Date: December 12, 2025).

RESULTS

Participant Characteristics

The mean age of participants was 42.15 ± 6.70 years, and 58.9% were female (n = 119). Detailed demographic, lifestyle, clinical, internet-use, and sleep-related characteristics are presented in **Tables 1 and 2**.

Descriptive Characteristics of Scale Scores

The mean DASS-21 depression, anxiety, and stress subscale scores were 9.37 ± 6.76, 8.54 ± 6.32, and 8.68 ± 6.93, respectively. According to PSQI scores, 58.0% of participants had good sleep quality. Based on OGAS scores, 23.8% of participants were classified as being at risk. Descriptive statistics for behavioral addiction scales are presented in **Table 3**.

Comparisons of Behavioral Addiction Scores According to Participant Characteristics

Comparisons of behavioral addiction scores according to participant characteristics are presented in **Table 4.** Male participants had significantly higher IGDS9-SF scores than female participants (Z = −2.513, p = .012). Although median scores were similar, the wider interquartile range among males suggested a greater distribution of elevated gaming-related scores. No gender differences were observed for BWAS, SAS-SV, BSMAS, mYFAS, or OGAS scores.

Participants older than 40 years tended to have higher OGAS scores than those aged 40 years or younger (Z = −1.962, p = .050). No significant age-related differences were found for BWAS, SAS-SV, BSMAS, IGDS9-SF, or mYFAS scores.

BWAS scores differed significantly across weekly working-hour groups (H(2, n = 202) = 11.98, p = .002). Post-hoc pairwise comparisons with Bonferroni correction indicated that BWAS scores were significantly higher among participants working 41–49 hours and ≥50 hours per week compared with those working ≤40 hours per week (adjusted p = .010 and p = .020, respectively). No significant difference was observed between the 41–49 and ≥50 hours groups (adjusted p = 1.000). No significant differences were found for SAS-SV, BSMAS, IGDS9-SF, mYFAS, or OGAS scores.

Table 1. Sociodemographic characteristics (N = 202)

Variable	Mean ± SD	Median (Min–Max)	n	%
Age, years	42.15 ± 6.70	41 (27–63)		
Academic experience, months	145.74 ± 103.03	132 (2–540)		
Age group				
≤40 years			94	46.5
>40 years			108	53.5
Gender				
Female			119	58.9
Male			83	41.1
Marital status				
Single			31	15.3
Married			158	78.2
Divorced/Widowed			13	6.4
Has children				
No			46	22.8
Yes			156	77.2
Academic title				
Research assistant			17	8.4
Lecturer			16	7.9
Assistant professor			74	36.6
Associate professor			52	25.7
Professor			43	21.3
Faculty group				
Medicine			96	47.5
Non-health faculties			65	32.2
Other health-related faculties			25	12.4
Vocational school/School/ Conservatory			16	7.9
Weekly working hours				
≤40 hours			100	49.5
41–49 hours			63	31.2
≥50 hours			39	19.3
Administrative duty				
No			64	31.7
Yes			138	68.3

Note: Categorical variables are presented as frequencies (n) and percentages (%). Continuous variables are presented as mean ± standard deviation (SD) and median (minimum–maximum).

Table 2. Lifestyle, clinical, internet-use, and sleep-related characteristicss (N = 202)		
Variable	**n**	**%**
Smoking status		
Never	147	72.8
Former	11	5.4
Occasional	21	10.4
Daily	23	11.4
Alcohol use		
Never	151	74.8
Former	2	1.0
Occasional	47	23.3
Daily	2	1.0
Psychiatric history		
No	174	86.1
Yes	28	13.9
Psychiatric medication use		
No	165	81.7
Yes	37	18.3
Daily internet use		
<2 hours	28	13.9
2–4 hours	88	43.6
>4 hours	86	42.6
Internet use purpose		
Academic/work-related	200	99.0
Social media	166	82.2
Shopping	110	54.5
Gaming	14	6.9
News	5	2.5
Entertainment	4	2.0
Education	4	2.0
Sleep duration		
≤5 hours	13	6.4
6–7 hours	158	78.2
≥8 hours	31	15.3
Screen use before bed		
No	32	15.8
Yes	170	84.2
Perceived sleep problem		
No	119	58.9
Yes	83	41.1
General stress		
No	36	17.8
Partly/Somewhat	86	42.6
Yes	80	39.6
Academic workload affects quality of life		
No	70	34.7
Yes	132	65.3
PSQI sleep quality group*		
Good sleep quality	112	58.0
Poor sleep quality	81	42.0
OGAS risk status		
No risk (≤27)	154	76.2
Risk (>27)	48	23.8

Note: Values are presented as frequencies (n) and percentages (%). OGAS = Online Gambling Addiction Scale; PSQI = Pittsburgh Sleep Quality Index.
*Multiple responses were allowed for internet use purpose.
† Percentages for PSQI sleep quality group were calculated based on valid cases (n = 193).

Table 3. Descriptive statistics of behavioral addiction scale scores and online gambling/betting risk status (n = 202)

Behavioral addiction	Scale	Median (Q1–Q3)	Min.–Max.	Risk classification
Work addiction	BWAS	19.00 (14.00–23.00)	7.00–33.00	Not classified
Smartphone addiction	SAS-SV	21.00 (14.00–28.00)	10.00–53.00	Not classified
Social media addiction	BSMAS	11.00 (7.00–15.00)	6.00–28.00	Not classified
Gaming disorder	IGDS9-SF	9.00 (9.00–11.00)	9.00–31.00	Not classified
Food addiction	mYFAS	0.00 (0.00–0.00)	0.00–13.00	Not classified
Online gambling/betting	OGAS	21.00 (21.00–25.25)	21.00–105.00	No risk: 154 (76.2%) Risk: 48 (23.8%)

Note: BSMAS = Bergen Social Media Addiction Scale; BWAS = Bergen Work Addition Scale; IGDS9-SF = Internet Gaming Disorder Scale-Short Form; mYFAS = Modified Yale Food Addiction Scale; OGAS = Online Gambling Addiction Scale; SAS-SV = Smartphone Addiction Scale-Short Version. Values are presented as median (Q1–Q3) and minimum–maximum. Q1 and Q3 indicate the first and third quartiles, respectively. Risk classification was reported only for OGAS because it has a predefined cut-off score.

Behavioral addiction scores were also compared according to daily internet use duration. Significant differences were observed for SAS-SV ($H(2, n = 202) = 15.54$, $p < .001$) and BSMAS scores ($H(2, n = 202) = 9.06$, $p = .011$). Post-hoc analyses revealed that participants reporting high daily internet use (>4 h) had significantly higher BSMAS scores than those reporting low daily internet use (<2 h). For SAS-SV, both moderate (2–4 h) and high (>4 h) internet-use groups scored significantly higher than the low-use group. No significant differences were observed for BWAS, IGDS9-SF, mYFAS, or OGAS scores. The observed effect sizes for the significant group differences ranged from small to moderate (rank-biserial r = .128–.176; ε^2 = .045–.077), indicating generally modest practical significance.

Behavioral addiction scores were also examined according to academic title and administrative duty status. Although an overall difference was found across academic title groups for SAS-SV scores ($H(4, n = 202) = 9.56$, $p = .048$), Bonferroni-adjusted post-hoc analyses did not reveal significant pairwise differences. Behavioral addiction scores also did not differ according to administrative duty status.

Associations Between Behavioral Addiction Scores and Psychological Symptoms and Sleep Characteristics

As shown in **Table 5**, BWAS, SAS-SV, BSMAS, IGDS9-SF, and mYFAS scores showed significant positive correlations with DASS-21 depression, anxiety, and stress scores. In contrast, OGAS scores were not significantly associated with psychological symptom levels. Regarding sleep quality, BWAS and IGDS9-SF scores showed positive correlations with PSQI scores, whereas OGAS scores demonstrated a weak negative correlation. No significant associations were observed between PSQI scores and SAS-SV, BSMAS, or mYFAS scores.

Correlations Among Behavioral Addiction Domains

Correlations among digital behavioral addiction domains are presented in **Table 6**. Significant positive associations were observed among SAS-SV, BSMAS, and IGDS9-SF scores. However, OGAS scores were not significantly associated with any other digital behavioral addiction domains.

Associations between work addiction and other behavioral addiction domains were also examined. BWAS scores showed weak but significant positive correlations with SAS-SV ($\rho = .255$, $p < .001$), BSMAS ($\rho = .222$, $p < .01$), and mYFAS 2.0 scores ($\rho = .211$, $p < .01$). No significant correlations were observed between BWAS scores and IGDS9-SF ($\rho = .043$, $p > .05$) or OGAS scores ($\rho = -.130$, $p > .05$).

Table 4. Comparison of behavioral addiction scores according to participant characteristics (N = 202)

Variable	Group	BWAS Median (Q1–Q3)	SAS-SV Median (Q1–Q3)	BSMAS Median (Q1–Q3)	IGDS9-SF Median (Q1–Q3)	mYFAS Median (Q1–Q3)	OGAS Median (Q1–Q3)
Gender	**Female (119)**	19.0 (14.0–23.0)	22.0 (15.0–28.0)	12.0 (7.0–16.0)	9.0 (9.0–10.0)	0.0 (0.0–0.0)	21.0 (21.0–25.0)
	Male (83)	19.0 (15.0–22.0)	20.0 (13.0–28.0)	11.0 (6.0–15.0)	9.0 (9.0–14.0)	0.0 (0.0–0.0)	21.0 (21.0–27.0)
	p	.847	.247	.567	.012*	.588	.954
	Effect size (r)	-.016	-.096	-.047	.176	.030	.004
Age group	**≤40 years (94)**	19.0 (15.0–22.0)	21.0 (14.0–30.0)	11.0 (6.0–16.0)	9.0 (9.0–11.25)	0.0 (0.0–0.0)	21.0 (21.0–21.0)
	>40 years (108)	18.0 (14.0–23.0)	20.5 (14.0–26.75)	11.0 (7.0–15.0)	9.0 (9.0–10.0)	0.0 (0.0–0.0)	21.0 (21.0–33.0)
	p	.700	.674	.950	.214	.490	.050
	Effect size (r)	-.031	-.034	.005	-.086	.038	.128
Weekly working hours	**≤40 h (100)**	17.0 (12.25–22.0)a	19.0 (13.0–27.0)	11.0 (6.25–15.0)	9.0 (9.0–11.0)	0.0 (0.0–0.0)	21.0 (21.0–23.5)
	41–49 h (63)	19.0 (16.0–24.0)b	21.0 (17.0–30.0)	11.0 (7.0–16.0)	9.0 (9.0–11.0)	0.0 (0.0–0.0)	21.0 (21.0–33.0)
	≥50 h (39)	20.0 (16.0–24.0)b	23.0 (14.0–29.0)	11.0 (6.0–15.0)	9.0 (9.0–15.0)	0.0 (0.0–0.0)	21.0 (21.0–33.0)
	p	.002*	.138	.771	.583	.377	.769
	Effect size (ε^2)	.060	.020	.003	.005	.010	.003
Daily internet use	**<2 h (28)**	19.0 (12.5–22.75)	15.5 (10.0–20.0)a	7.5 (6.0–10.75)a	9.0 (9.0–9.75)	0.0 (0.0–0.0)	21.0 (21.0–42.25)
	2–4 h (88)	19.0 (15.0–23.0)	21.5 (16.25–29.75)b	11.0 (7.0–15.0)ab	9.0 (9.0–10.0)	0.0 (0.0–0.0)	21.0 (21.0–24.75)
	>4 h (86)	18.5 (13.75–23.0)	22.0 (14.0–29.25)b	12.5 (7.0–17.0)b	9.0 (9.0–12.25)	0.0 (0.0–0.0)	21.0 (21.0–29.25)
	p	.798	<.001*	.011*	.173	.920	.935
	Effect size (ε^2)	.002	.077	.045	.017	.001	.001

Note: BSMAS = Bergen Social Media Addiction Scale; BWAS = Bergen Work Addiction Scale; IGDS9-SF = Internet Gaming Disorder Scale–Short Form; mYFAS = Modified Yale Food Addiction Scale; OGAS = Online Gambling Addiction Scale; SAS-SV = Smartphone Addiction Scale–Short Version. Values are presented as median (Q1–Q3). Gender and age-group comparisons were performed using the Mann–Whitney U test. Weekly working hours and daily internet use groups were compared using the Kruskal–Wallis H test with Bonferroni-adjusted post-hoc comparisons. Effect sizes are reported as rank-biserial correlation (r) for Mann–Whitney U tests and epsilon squared (ε^2) for Kruskal–Wallis H tests. Different superscript letters indicate significant post-hoc differences. *p < .05.

Table 5. Spearman correlation analysis of behavioral addiction scores with DASS-21 depression, anxiety, stress, and PSQI scores (n = 202)

Behavioral addiction score	DASS-21 depression	DASS-21 anxiety	DASS-21 stress	PSQI
BWAS	.496***	.463***	.491***	.387***
SAS	.359***	.354***	.283***	.127
BSMAS	.338***	.375***	.275***	.107
IGDS9-SF	.240**	.232**	.188**	.174*
mYFAS	.286***	.323***	.289***	.140
OGAS	-.060	-.070	-.016	-.147*

Note: BSMAS = Bergen Social Media Addiction Scale; BWAS = Bergen Work Addition Scale; DASS-21 = Depression Anxiety Stress Scale-21- Short Form; IGDS9-SF = Internet Gaming Disorder Scale-Short Form; mYFAS = Modified Yale Food Addiction Scale; OGAS = Online Gambling Addiction Scale; PSQI = The Pittsburgh Sleep Quality Index; SAS-SV = Smartphone Addiction Scale-Short Version. Values are Spearman's rho coefficients. *p < .05, **p < .01, ***p < .001.

Table 6. Spearman correlation coefficients among digital behavioral addiction scores (n = 202)

Variable	SAS-SV	BSMAS	IGDS9-SF	OGAS
SAS-SV	1	.696***	.255***	-.012
BSMAS	.696***	1	.327***	-.015
IGDS9-SF	.255***	.327***	1	-.028
OGAS	-.012	-.015	-.028	1

Note: BSMAS = Bergen Social Media Addiction Scale; IGDS9-SF = Internet Gaming Disorder Scale-Short Form; OGAS = Online Gambling Addiction Scale; SAS-SV = Smartphone Addiction Scale-Short Version. Values are Spearman's rho coefficients. *p < .05, **p < .01, ***p < .001.

DISCUSSION

The present study examined behavioral addiction tendencies and associated psychosocial factors among faculty members across multiple behavioral domains. Behavioral addiction tendencies were observed at varying levels, particularly in work addiction, smartphone use, and social media use. By examining multiple behavioral addiction domains within the same sample, this study provides a broader perspective on behavioral addiction tendencies and their associated psychosocial characteristics among faculty members. Taken together, these findings underscore the value of adopting a multidomain approach when investigating behavioral addiction tendencies in academic populations.

General Characteristics and Sociodemographic Distribution of Behavioral Addiction Tendencies

Wide score distributions were observed across several behavioral addiction domains, particularly work addiction, smartphone use, and social media use, suggesting varying levels of behavioral addiction tendencies among faculty members. The demanding nature of academic work, continuous digital engagement, and increasing integration of technology into professional life may contribute to these patterns. These observations are also consistent with the I-PACE model, which emphasizes the interaction of individual characteristics with affective, cognitive, and environmental factors in the development and maintenance of problematic

behaviors (Brand et al., 2019). Within the academic environment, persistent occupational demands and extensive technology use may increase vulnerability to different forms of behavioral addiction.

The finding that nearly one-quarter of participants were classified as being at risk for online gambling/betting is noteworthy. Recent evidence suggests increasing rates of online gambling behaviors worldwide (Tran, 2024). Although faculty members represent a highly educated population, the accessibility of online betting platforms, mobile availability, and increasing popularity of sports betting may contribute to these behaviors. Academic stress and occupational burden may also contribute to the use of online betting as a maladaptive coping strategy. However, it should be emphasized that OGAS assesses risk tendency rather than clinical diagnosis. Moreover, because relatively few studies have specifically examined online gambling behaviors among university faculty members, direct comparisons with previous occupational studies remain limited, highlighting the need for further research in this population.

Behavioral addiction scores did not differ according to most sociodemographic variables. However, male participants demonstrated higher internet gaming disorder scores, which is consistent with previous studies reporting greater prevalence of gaming-related problems among males (Stevens et al., 2021; Su et al., 2020). A systematic review and meta-analysis reported that internet gaming disorder prevalence is approximately 2.5 times higher among males than females (Stevens et al., 2021). Previous studies have suggested that this difference may reflect sex-related differences in gaming motivations, reward responsiveness, impulsivity, and gender-related socialization patterns that encourage gaming engagement among males (Brand et al., 2019; Dong & Potenza, 2022; Wang & Cheng, 2022). These mechanisms are consistent with the interaction between individual predispositions and affective-cognitive processes described in the I-PACE model (Brand et al., 2019). Although previous studies have suggested that problematic social media and smartphone use may be more common among females (Su et al., 2020; Varchetta et al., 2024), no gender differences were identified in these domains in the present study. Similar occupational responsibilities and technology-use patterns among faculty members may partly explain this finding. Alternatively, the relatively homogeneous educational and occupational characteristics of the present sample may have attenuated gender-related differences reported in more heterogeneous populations.

Although online gambling behaviors are frequently reported among younger individuals, previous reviews suggest heterogeneous age-related patterns (Dellosa & Browne, 2024). In the present study, participants older than 40 years showed higher OGAS scores. Greater financial resources, sustained interest in sports betting, and easier access to online platforms may contribute to this pattern. The discrepancy between our findings and studies reporting higher gambling involvement among younger individuals may reflect differences in study populations, gambling modalities, or cultural and regulatory contexts. Given that the association observed in our study was borderline significant, this finding should be interpreted cautiously and confirmed in future studies.

Digital Behavioral Addiction Tendencies and Internet-Use Characteristics

Participants reporting longer daily internet use demonstrated higher smartphone addiction and social media addiction scores. Previous studies and meta-analytic findings across different populations suggest that greater digital engagement and internet use are associated with problematic smartphone and social media behaviors (Meng et al., 2022; Tomczyk & Lizde, 2023). The present findings are generally consistent with this literature. However, the strength of this association may vary according to the purpose of internet use, and work-related digital engagement may differ from recreational use. Within academic settings, continuous access to information and increasing reliance on digital

communication may further strengthen this relationship. This interpretation is also compatible with the I-PACE model, which proposes that repeated interactions between individual predispositions and environmental demands contribute to the development and maintenance of problematic technology use (Brand et al., 2019).

Behavioral Addiction Tendencies and Work-Related Characteristics

Participants with longer weekly working hours demonstrated higher work addiction scores. This finding is consistent with previous studies reporting positive associations between work addiction tendencies and increasing workload or total working hours (Dutheil et al., 2020; Morkevičiūtė et al., 2021). Existing workaholism literature suggests that publication pressure, workload, bureaucratic demands, and role overload contribute substantially to excessive work behaviors among academics (Clark et al., 2016). These findings are also consistent with Griffiths' components model of addiction, particularly the concepts of salience and conflict, whereby work gradually becomes a dominant activity that interferes with other aspects of daily life (Griffiths, 2005). Nevertheless, high occupational commitment and long working hours should not automatically be interpreted as work addiction, as excessive work becomes clinically relevant only when it is characterized by impaired control, compulsive engagement, and negative consequences for well-being and daily functioning (Clark et al., 2016; Griffiths, 2005). In academic settings, performance expectations and the pressure to balance teaching, research, and administrative responsibilities may further reinforce these behavioral patterns (Clark et al., 2016). Consistent with this perspective, academic title and administrative responsibilities were not associated with behavioral addiction scores in the present study. Similar expectations regarding teaching, research productivity, publication, and administrative duties across academic roles may contribute to these relatively comparable behavioral patterns among faculty members.

Associations Between Behavioral Addiction Tendencies and Psychological Symptoms

Depression, anxiety, and stress scores showed positive associations with work addiction, smartphone addiction, social media addiction, and gaming-related behaviors. Food addiction scores were also positively associated with psychological symptoms. However, given the substantial clustering of mYFAS scores at zero, this finding may reflect a limited subgroup rather than a broadly distributed pattern within the sample. The generally low mYFAS scores observed in the present sample may reflect occupational or lifestyle characteristics specific to university faculty members. Because factors that might explain this finding, such as dietary habits, nutritional awareness, or other lifestyle characteristics, were not assessed, the reasons for these low mYFAS scores remain unclear. Future studies should examine these factors to better understand food addiction tendencies among university faculty members.

Previous research has consistently reported associations between behavioral addictions and psychological symptoms. Meta-analytic findings suggest significant relationships between problematic smartphone or internet use and depression and anxiety symptoms (Pham et al., 2025). More broadly, recent reviews indicate that digital addiction behaviors and depressive symptoms frequently co-occur and may share overlapping psychological mechanisms (Karakose et al., 2023). Similar associations have also been observed for gaming-related behaviors and work addiction tendencies (Clark et al., 2016; Gao et al., 2022; Ropovik et al., 2023). Collectively, these findings suggest that individuals experiencing psychological distress may engage in behaviors such as excessive smartphone use, social media use, gaming, or overworking as coping strategies. Although these behaviors may temporarily reduce distress, they may evolve into problematic patterns over time. This interpretation is also consistent with the I-PACE model, which proposes that repeated engagement in specific behaviors as a means of regulating negative

affect may contribute to the development and maintenance of behavioral addictions (Brand et al., 2019). However, because of the cross-sectional design, the direction of these relationships cannot be determined.

Unlike other behavioral domains, online gambling/betting scores were not associated with depression, anxiety, or stress. Previous studies generally report positive relationships between gambling-related problems and psychological distress (Lorains et al., 2011). One possible explanation for this discrepancy is that online gambling/betting behaviors may be influenced by different motivational and psychological mechanisms, including reward sensitivity, sensation seeking, and risk-taking tendencies (Sztainert et al., 2014). Alternatively, the absence of an association may reflect the skewed distribution of gambling-related behaviors in the present sample, which may have reduced the statistical power to detect such associations. Therefore, this finding should be interpreted cautiously and replicated in future studies before firm conclusions can be drawn.

Behavioral Addiction Tendencies and Sleep Quality

Work addiction and internet gaming disorder scores were positively associated with poor sleep quality. This finding is consistent with previous studies reporting associations between problematic gaming behaviors and impaired sleep outcomes (Alimoradi et al., 2019; Han et al., 2024; Kristensen et al., 2021). Gaming-related sleep problems may be explained by delayed sleep timing and increased physiological arousal associated with gaming, particularly when gaming occurs during the evening hours (Han et al., 2024). Similarly, work addiction tendencies have previously been linked to poor sleep quality and daytime sleepiness (Spagnoli et al., 2019). Among individuals with work addiction, difficulty disengaging from work-related thoughts and insufficient opportunities for psychological recovery may further contribute to sleep disturbances (Spagnoli et al., 2019).

In contrast, smartphone use, social media use, and several other digital behavioral addiction domains were not associated with sleep quality in the present study. Although previous meta-analyses have reported small-to-moderate relationships between problematic technology use and sleep disturbances (Alimoradi et al., 2019; Han et al., 2024), the absence of significant findings may be related to sample-specific characteristics or relatively small effect sizes. It is also possible that the predominantly work-related nature of smartphone and internet use among faculty members differs from recreational technology use, thereby attenuating the association with sleep quality observed in more heterogeneous populations.

The weak negative association observed between online gambling/betting scores and sleep quality was inconsistent with previous findings suggesting relationships between gambling-related behaviors and sleep problems (Austin et al., 2024; Parhami et al., 2012). This unexpected finding should therefore be interpreted cautiously. It may also reflect the skewed distribution of gambling-related behaviors in the present sample or other unmeasured factors influencing sleep quality, and should be replicated in future studies before firm conclusions can be drawn.

Relationships Among Digital Behavioral Addiction Domains

Significant positive relationships were identified among smartphone addiction, social media addiction, and gaming-related behaviors. These findings suggest that technology-based behaviors may cluster together and potentially share common behavioral or psychological mechanisms. This pattern is also consistent with the I-PACE model, which proposes that different forms of problematic digital behaviors may arise through shared affective, cognitive, and motivational processes while differing in their specific behavioral expressions (Brand et al., 2019). Previous studies similarly indicate that smartphone use, social media use, and gaming-related behaviors frequently co-occur and may involve overlapping digital engagement patterns (Andrade & Viñán-Ludeña, 2025; Moreno et al., 2022).

In contrast, online gambling/betting behavior was not associated with other digital behavioral addiction domains. This distinction may indicate that gambling-related behaviors are driven by somewhat different motivational processes, including reward expectancy and risk-taking tendencies. Unlike other digital behaviors, gambling is characterized by monetary reinforcement and uncertainty of reward, which may contribute to its distinct pattern of associations. Consistent with this interpretation, previous studies suggest that gambling-related behaviors and gaming-related behaviors, despite certain similarities, may involve both overlapping and distinct psychological mechanisms (Fauth-Bühler & Mann, 2015; Mallorquí-Bagué et al., 2017).

An important contribution of the present study is the simultaneous evaluation of multiple behavioral addiction domains within the same occupational sample. While previous studies have typically focused on a single behavioral addiction, the present study examined work addiction, smartphone use, social media use, internet gaming disorder, food addiction, and online gambling/betting together and evaluated their relationships with common psychosocial factors. This multidomain approach provides a more comprehensive understanding of behavioral addiction tendencies among faculty members by demonstrating that different behavioral addiction domains may show distinct patterns of association with demographic, occupational, and psychological characteristics. Such an approach may contribute to the development of more comprehensive prevention, early identification, and intervention strategies tailored to the needs of academic professionals.

Strengths and Limitations

One of the main strengths of this study is its focus on faculty members, a relatively understudied population in behavioral addiction research. Another important strength is the simultaneous evaluation of multiple behavioral addiction domains—including work addiction, smartphone addiction, social media addiction, internet gaming disorder, online gambling/betting behaviors, and food addiction tendencies—within the same sample. Evaluating these domains together with depression, anxiety, stress, and sleep quality also enabled a broader assessment of associated psychosocial factors.

Several limitations should also be considered. First, the cross-sectional design precludes causal interpretation. Second, the use of self-report measures may introduce reporting bias. Third, participants were recruited through voluntary online participation using convenience and snowball sampling, which may have introduced selection bias and limited the generalizability of the findings. Because the survey link was disseminated through multiple e-mail and social media channels without a predefined sampling frame, the total number of faculty members who received the invitation could not be determined; therefore, a response rate could not be calculated. Fourth, because structured clinical interviews were not conducted, behavioral addiction tendencies were assessed using screening instruments rather than clinical diagnoses. Furthermore, given the relatively large number of statistical tests performed, the possibility of Type I error cannot be completely excluded despite the use of Bonferroni correction for post hoc pairwise comparisons. Finally, because most instruments primarily assess risk or tendency rather than clinical diagnosis, findings should be interpreted as behavioral addiction tendencies rather than definitive behavioral addiction conditions.

CONCLUSION

Behavioral addiction tendencies among faculty members were associated with psychological symptoms, sleep quality, and selected occupational characteristics, although these associations differed across behavioral addiction domains. In particular, the relationship between working hours and work addiction, as well as the clustering of digital behavioral addiction domains, emerged as notable findings. This study contributes to the limited literature by simultaneously evaluating multiple behavioral addiction domains and associated psychosocial factors among university faculty members. These

findings may contribute to the development of workplace mental health policies, early identification strategies, and preventive interventions targeting behavioral addiction tendencies in academic settings. Further longitudinal studies are needed to clarify the direction and underlying mechanisms of these relationships.

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Conflict of Interest

The authors declare that they have no conflict of interests regarding content of this article.

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Ethical Declaration

This study was conducted in accordance with the Declaration of Helsinki and approved by the Non-Interventional Scientific Research Ethics Committee of Tokat Gaziosmanpaşa University (Approval No: 25-MOBAEK-455; Date: December 12, 2025).

Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Author Contributions

Concept: EAA, FUD, Design: EAA, FUD, Supervising: EAA, Data collection and entry: EAA, FUD, Analysis and interpretation: EAA, Literature search: EAA, FUD, Writing: EAA, Critical review: EAA, FUD.

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