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Reasons for exercise avoidance and technology addiction in university students

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Abstract

Introduction. Technological advancements have reshaped daily routines, leading to a growing reliance on digital devices across all age groups. While offering various benefits, this trend has also contributed to reduced physical activity and increased rates of exercise avoidance, particularly among university students. Aim of Study. The aim of this study was to examine the relationship between reasons for exercise avoidance and technology addiction in university students. Material and Methods. The research was conducted using the relational survey model, one of the quantitative research methods. A total of 495 voluntary participants, consisting of 207 women and 288 men, were included in the study through simple random sampling. The Personal Information Form, the Technology Addiction Scale (TAS), and the Reasons for Exercise Avoidance Scale (REAS) were used as data-collection tools. The data obtained within the scope of the research were analyzed using the SPSS statistical package program. In this context, t-tests, ANOVA, and Pearson correlation tests were applied to the data. Results. Analysis revealed a statistically significant gender-based difference in the Interest and Health subdimensions of the REAS ($p < 0.05$), with women scoring higher on average than men. On the TAS, a significant difference was found in the Online Gaming subdimension ($p < 0.05$), with men scoring higher than women. In contrast, no significant difference was found between groups in terms of the grade level variable ($p > 0.05$). When the relationship between the REAS and the TAS was examined, a moderate, positive and significant correlation was found between the two scales ($p < 0.05$). Conclusions. The findings indicate that higher levels of technology addiction are significantly associated with increased exercise avoidance, particularly due to anxiety, lack of interest, and health-related concerns.

KEYWORDS: university students, technology addiction, exercise avoidance.

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Introduction

In today's world, individuals' lifestyles have changed dramatically compared to the past, largely due to the increasing presence of technology in nearly every aspect of daily life. While technological innovations have undoubtedly made many tasks more efficient, they have also brought unintended consequences for health-related behaviors. On the one hand, people now have easier access to information, faster communication channels, and tools that increase productivity; on the other, there has been a marked decline in physical activity, face-to-face social interactions, and a rise in psychological issues such as digital dependency [1]. Within this shifting landscape, physical inactivity and avoidance of exercise have become increasingly prominent public health concerns. Despite the well-established benefits of regular exercise for physical, mental, and emotional well-being [2], many individuals

still avoid engaging in consistent physical activity. This behavior is shaped by a complex interaction of personal, social, and environmental factors. Among these, one of the more recent and noteworthy contributors is the growing amount of time spent on digital devices, which is closely linked to patterns of technology overuse and behavioral addiction [3].

This growing reliance on digital devices not only alters daily routines but also contributes to behavioral shifts that deprioritize health-promoting activities, such as exercise. Physical activity refers to any bodily movement produced by skeletal muscles that results in energy expenditure, while exercise denotes a more structured, planned, and goal-directed form of such movement [4]. For individuals to maintain optimal health, it is essential to engage in regular exercise for a sufficient duration each week. Despite the well-established guidelines issued by health institutions, many individuals continue to postpone or neglect exercise, often citing reasons such as lack of time, lack of motivation, or both [5]. Exercise avoidance behavior can be described as the conscious or unconscious tendency to avoid engaging in physical activity. This avoidance is influenced by a range of factors, including physical fatigue, poor self-discipline, difficulties in time management, lack of environmental support, social anxiety, low intrinsic motivation, negative body image, and adverse past exercise experiences [6]. Each of these factors may contribute to a person's gradual devaluation of exercise, ultimately leading to its complete omission from daily life.

Among the various factors contributing to exercise avoidance, one of the most prominent and increasingly widespread in recent years is technology addiction. This condition refers to the compulsive and prolonged use of digital devices, such as smartphones, tablets, computers, and gaming consoles, often beyond the user's voluntary control [1]. Technology addiction may manifest through excessive engagement with the internet, social media, online gaming, or video streaming platforms [7]. While digital technologies offer significant benefits in communication, education, and productivity, their overuse can negatively affect both physical and psychological well-being. Especially among adolescents and young adults, technology addiction is not merely a matter of distraction or habit, but a pervasive issue that disrupts daily routines, impairs sleep patterns, weakens social connections, and reduces levels of physical activity [8]. As these behaviors become habitual, they may reinforce sedentary lifestyles and exacerbate the avoidance of exercise as part of a broader disengagement from health-promoting behaviors.

A particularly salient and increasingly prevalent factor contributing to exercise avoidance in recent years is technology addiction, marked by excessive, uncontrolled, and compulsive use of digital devices such as smartphones, tablets, computers, and gaming consoles [9]. This form of behavioral addiction commonly involves persistent engagement with the internet, social media, online gaming, or video streaming platforms [7], and although digital technologies offer notable benefits, their excessive use can significantly undermine both physical and psychological health. Research indicates that technology addiction – especially among adolescents and young adults – disrupts daily routines, impairs sleep, reduces interpersonal interactions, and ultimately leads to decreased levels of physical activity [8, 10]. As these patterns become entrenched, a vicious cycle emerges: reduced physical activity weakens physical and mental well-being, prompting individuals to retreat further into digital environments; in turn, increased time spent on digital platforms diminishes the time, energy, and motivation available for exercise, progressively normalizing sedentary lifestyles and exacerbating various health problems [11].

Aim of Study

The primary aim of the present study is to examine the reasons behind exercise avoidance within the context of technology addiction and to explore the potential relationship between these two variables. Specifically, the research seeks to identify the psychological and behavioral factors that underlie the tendency to avoid exercise among university students. Furthermore, by analyzing the influence of demographic variables such as age, gender, time spent on social media, and class level.

Material and Methods

In this study, the relational survey model, a quantitative research method, was employed. The relational survey model is defined as "research models that aim to determine the presence and/or degree of co-variation between two or more variables" [12]. In this context, the study aimed to examine the relationship between reasons for exercise avoidance and technology addiction.

Participants

A total of 495 individuals participated in the study, including 207 females (41.8%) and 288 males (58.2%). The participants' ages ranged from 17 to 58, with a mean age of 21.25 (*Ss* = ±3.30). In terms of academic year, 158 participants (31.9%) were first-year students,

199 (40.2%) were in their second year, 85 (17.2%) were in their third year, and 53 (10.7%) were in their fourth year (Table 1).

Table 1. Participant demographics

Variables	Groups	*n*	%
Gender	female	207	41.8
	male	288	58.2
Class level	freshmen	158	31.9
	sophomores	199	40.2
	juniors	85	17.2
	seniors	53	10.7

Data collection tools

In this study, the Personal Information Form (PIF), the Technology Addiction Scale (TAS), and the Reasons for Exercise Avoidance Scale: Adult Form (REAS) were used as data collection tools.

PIF: This form was designed to gather detailed information about the participants and it includes questions regarding gender, year of study, and time spent on social media.

TAS: Developed by Aydin [13], this scale consists of 24 items and four subdimensions: Social Media Addiction (SMA), Instant Messaging Addiction (IMA), Online Gaming Addiction (OGA), and website addiction (WSA). The scale is structured using a 5-point Likert-type format. The Cronbach's alpha coefficients for the subdimensions range between 0.78 and 0.79 in the original study. In this study, the alpha values were found to be: 0.81 for SMA, 0.83 for IMA, 0.88 for OGA, 0.87 for WSA, and 0.94 for the overall scale.

REAS: This scale was developed by Yilmaz, Erer, Ilhan and Yilmaz [14] and includes 12 items under three subdimensions: Anxiety, Interest, and Health. It employs a 5-point Likert-type format. The Cronbach's alpha coefficients for the subdimensions were found to range between 0.62 and 0.83. The REAS yielded the following Cronbach's alpha values: 0.84 for Anxiety, 0.80 for the Interest, 0.75 for the Health subdimensions, and 0.90 for the overall scale. All alpha values exceed the 0.70 threshold, indicating that the internal consistency reliability of the scales is acceptably high.

Data collection

In order to collect the data within the scope of the study, ethical approval was obtained from the Ethics Committee of Gazi University Rectorate, with decision number 06 dated April 16, 2025. The data from participants were collected online using Google Forms prepared by the researchers. A convenience sampling method was employed, as participation in the study was voluntary.

Data analysis

The data obtained were analyzed using the SPSS software package. To determine the appropriate statistical analyses, the data were subjected to normality tests. It was found that the skewness and kurtosis values of the data were within the acceptable range of −2 to +2, indicating a normal distribution [15]. In line with the aim of the study, t-tests, ANOVA, and correlation analyses were conducted.

Results

According to the t-test results based on gender, significant differences were found between groups in the Interest and Health subdimensions ($p < 0.05$), with females scoring higher on average than males. However, no significant difference was found between the groups in the Anxiety subdimension ($p > 0.05$). For the TAS, significant gender differences were found in the OGA subdimension ($p < 0.05$), with males scoring higher than females. No significant differences were observed in the SMA, IMA, and WSA subdimensions ($p > 0.05$) (Table 2).

Table 2. Independent samples t-test results for the gender variable

Scales	Factors	Gender	*n*	*M*	*SD*	*df*	*t*	*p*
REAS	Anxiety	female	207	2.32	0.87	493	1.93	0.05
		male	288	2.16	0.93			
	Interest	female	207	2.94	0.93	493	3.84	*0.01
		male	288	2.60	0.99			
	Health	female	207	2.46	0.78	493	2.70	*0.01
		male	288	2.24	0.92			

TAS	SNA	female	207	2.48	0.76	493	0.08	0.93
		male	288	2.47	0.82			
	IMA	female	207	2.50	0.80	493	0.36	0.71
		male	288	2.48	0.87			
	OGA	female	207	1.94	0.87	493	−7.86	*0.01
		male	288	2.58	0.91			
	WSA	female	207	2.49	0.87	493	−0.43	0.66
		male	288	2.53	0.90			

Note: REAS – Reasons for Exercise Avoidance Scale, TAS – Technology Addiction Scale, SNA – Social Network Addiction, IMA – Instant Messaging Addiction, OGA – Online Gaming Addiction, WSA – Website Addiction
*$p < 0.05$

The results of the one-way ANOVA conducted for the academic year variable revealed no statistically significant differences among the groups in either the REAS or the TAS, including their subdimensions ($p > 0.05$) (Table 3).

Table 4 presents the results of the one-way ANOVA regarding time spent on social media. A significant difference was found in the Health subdimension of the REAS ($p < 0.05$), whereas no significant differences were found in the Anxiety or Interest ($p > 0.05$). According to the LSD post hoc test, participants who spent 8 or more hours on social media had higher mean scores in the Health subdimension compared to those who spent 1-3 hours or 4-7 hours. In the TAS, significant differences were found in the total scores across groups ($p < 0.05$). The LSD post hoc test indicated that participants who spent 8 or more hours on social media had higher mean scores than those who spent 1-3 hours or 4-7 hours across all significant comparisons.

Table 5 shows that there is a weak but statistically significant negative correlation between age and the TAS ($p < 0.05$), while no significant correlation was found between age and the REAS ($p > 0.05$).

As shown in Table 6, a moderate and positive significant correlation was found between the REAS and the TAS and its subdimensions ($p < 0.05$). Specifically, moderate positive correlations were found between the Anxiety and Interest subdimensions of the REAS and the SMA, IMA, WSA subdimensions, as well as the total scores of the TAS. A low-level but significant positive correlation was observed between the Anxiety,

Table 3. One-way ANOVA results for the academic year variable

Scales	Factors	Class level	*n*	*M*	*SD*	*SV*	*SS*	*df*	*MS*	*F*	*p*
REAS	Anxiety	freshmen	158	2.11	0.85						
		sophomores	199	2.25	0.91	BG	3.65	3	1.21	1.46	0.22
		juniors	85	2.35	0.91	WG	407.82	491	0.83		
		seniors	53	2.28	1.06						
	Interest	freshmen	158	2.72	0.99						
		sophomores	199	2.66	0.96	BG	4.13	3	1.37	1.42	0.23
		juniors	85	2.87	0.93	WG	475.46	491	0.96		
		seniors	53	2.89	1.10						
	Health	freshmen	158	2.26	0.81						
		sophomores	199	2.36	0.92	BG	1.67	3	0.55	0.72	0.53
		juniors	85	2.42	0.79	WG	379.23	491	0.77		
		seniors	53	2.31	0.99						

TAS	SNA	freshmen	158	2.52	0.71						
		sophomores	199	2.44	0.82	BG	0.67	3	0.22	0.35	0.78
		juniors	85	2.45	0.75	WG	313.14	491	0.63		
		seniors	53	2.51	0.97						
	IMA	freshmen	158	2.44	0.75						
		sophomores	199	2.48	0.88	BG	0.84	3	0.28	0.39	0.75
		juniors	85	2.56	0.85	WG	351.84	491	0.71		
		seniors	53	2.53	0.95						
	OGA	freshmen	158	2.30	0.93						
		sophomores	199	2.40	0.92	BG	3.06	3	1.02	1.12	0.33
		juniors	85	2.22	0.97	WG	445.92	491	0.90		
		seniors	53	2.18	1.07						
	WSA	freshmen	158	2.57	0.84						
		sophomores	199	2.48	0.89	BG	0.88	3	0.29	0.36	0.77
		juniors	85	2.51	0.89	WG	392.20	491	0.79		
		seniors	53	2.44	0.99						

Note: REAS – Reasons for Exercise Avoidance Scale, TAS – Technology Addiction Scale, SNA – Social Network Addiction, IMA – Instant Messaging Addiction, OGA – Online Gaming Addiction, WSA – Website Addiction, BG – between groups, WG – within group

Table 4. One-way ANOVA results for the time spent on social media variable

Scales	Factors	Time spent on social media	*n*	*M*	*SD*	*SV*	*SS*	*df*	*MS*	*F*	*p*	*LSD*
REAS	Anxiety	a: 1-3 hours	99	2.15	0.99	BG	0.73	2	0.36			
		b: 4-7 hours	246	2.24	0.85	WG	410.74	492	0.83	0.43	0.64	
		c: 8 hours ≥	150	2.26	0.94							
	Interest	a: 1-3 hours	99	2.62	1.09	BG	5.70	2	2.85			
		b: 4-7 hours	246	2.69	0.93	WG	473.89	492	0.96	2.96	0.05	
		c: 8 hours ≥	150	2.90	0.98							
	Health	a: 1-3 hours	99	2.17	0.90	BG	7.58	2	3.79			
		b: 4-7 hours	246	2.29	0.86	WG	373.32	492	0.75	5.00	*0.01	c > a c > b
		c: 8 hours ≥	150	2.51	0.86							
TAS	SNA	a: 1-3 hours	99	2.21	0.79	BG	14.93	2	7.46			
		b: 4-7 hours	246	2.45	0.78	WG	298.87	492	0.60	12.29	*0.01	c > a c > b
		c: 8 hours ≥	150	2.70	0.76							
	IMA	a: 1-3 hours	99	2.28	0.81	BG	12.98	2	6.49			
		b: 4-7 hours	246	2.43	0.82	WG	339.71	492	0.69	9.40	*0.01	c > a c > b
		c: 8 hours ≥	150	2.72	0.85							

TAS	OGA	a: 1-3 hours	99	2.00	0.86	BG	23.80	2	11.90	13.77	*0.01	c > a c > b
		b: 4-7 hours	246	2.26	0.92	WG	425.18	492	0.86			
		c: 8 hours ≥	150	2.61	0.98							
	WSA	a: 1-3 hours	99	2.23	0.85	BG	14.89	2	7.44	9.69	*0.01	c > a c > b
		b: 4-7 hours	246	2.49	0.89	WG	378.18	492	0.76			
		c: 8 hours ≥	150	2.73	0.86							

Note: REAS – Reasons for Exercise Avoidance Scale, TAS – Technology Addiction Scale, SNA – Social Network Addiction, IMA – Instant Messaging Addiction, OGA – Online Gaming Addiction, WSA – Website Addiction, BG – between groups, WG – within group
*$p < 0.05$

Table 5. Correlation analysis results for the age variable

Variable	Values	TAS	REAS
Age	*r*	−0.129	−0.017
	p	*0.004	0.706

Note: TAS – Technology Addiction Scale, REAS – Reasons for Exercise Avoidance Scale
*p < 0.05

Table 6. Correlation analysis between the REAS and the TAS

Scales/ Factors	Values	TAS	SNA	IMA	OGA	WSA
REAS	*r*	0.525	0.520	0.523	0.307	0.474
	p	*0.001	*0.001	*0.001	*0.001	*0.001
Anxiety	*r*	0.458	0.454	0.471	0.272	0.396
	p	*0.001	*0.001	*0.001	*0.001	*0.001
Interest	*r*	0.417	0.432	0.388	0.228	0.403
	p	*0.001	*0.001	*0.001	*0.001	*0.001
Health	*r*	0.501	0.475	0.516	0.307	0.442
	p	*0.001	*0.001	*0.001	*0.001	*0.001

Note: REAS – Reasons for Exercise Avoidance Scale, TAS – Technology Addiction Scale, SNA – Social Network Addiction, IMA – Instant Messaging Addiction, OGA – Online Gaming Addiction, WSA – Website Addiction

*p < 0.05

Interest, Health and the OGA ($p < 0.05$). For the Health subdimension, moderate positive correlations were observed with all subdimensions and the TAS total score ($p < 0.05$).

Discussion

The findings revealed that females scored significantly higher than males in the Interest and Health subdimensions of the REAS, suggesting that women may be more influenced by motivational and health-related justifications when avoiding physical activity. In contrast, no significant difference was found in the Anxiety subdimension, implying that emotional or psychological barriers – such as performance anxiety or fear of injury – may be perceived similarly by both genders. These findings partially align with prior research indicating that gender may influence the types of motivations or barriers associated with exercise behaviors. For instance, Buckworth and Nigg [16] reported that men are more likely to cite logistical or performance-based reasons for inactivity, while women often emphasize body image concerns or social discomfort. Similarly, Ekkekakis, Parfitt, and Petruzzello [17] noted that women tend to experience higher exercise-related affective discomfort, though this does not necessarily translate into higher avoidance scores in the Anxiety subdimension, which is consistent with our findings. In terms of technology addiction, significant gender differences were observed in the OGA subdimension of the TAS, with males again reporting higher scores than females. This finding aligns with previous research indicating that males, particularly during adolescence and emerging adulthood, are more prone to excessive online gaming behaviors [18]. However, no significant gender differences were found in the SMA, IMA, or WSA subdimensions, suggesting that these digital behaviors are more equally distributed across genders. These results may reflect broader sociocultural and psychological patterns in digital media use. For example, while men are more inclined toward performance- or competition-based platforms such as online games, women may engage more in communicative or relational digital activities [19]. Yet the lack of significant differences in SMA and IMA could indicate a narrowing gender gap in digital engagement patterns, especially as social networking and messaging have become central to communication for both genders.

The current study found no statistically significant differences across academic year levels in either the REAS or the TAS, including all subdimensions. These results suggest that both exercise avoidance and technology addiction behaviors may remain relatively stable throughout the undergraduate years. One possible explanation for the absence of variation across class levels is the increasingly homogenized university lifestyle in terms of both academic demands and technological immersion. Recent studies have shown that digital device use is pervasive among university students regardless of academic seniority, often driven by similar factors such as online coursework, social communication, and entertainment [20]. As such, the risk of technology overuse may be uniformly distributed across year levels, diminishing the likelihood of detectable differences in addiction-related behaviors. Similarly, the lack of significant variation in exercise avoidance may reflect a shared set of challenges common to all university students, including limited free time, academic stress, and lack of motivation [21]. These barriers often persist across the undergraduate timeline, meaning that a student's position in their academic journey may not be a decisive factor in their physical activity behaviors. Furthermore, the university environment may not offer progressively stronger health behavior interventions or resources as students advance, resulting in consistent patterns of exercise neglect throughout all academic years.

The current study found significant differences in both the Health subdimension of the REAS and the TAS subdimensions based on time spent on social media. Specifically, individuals who reported using social media for 8 or more hours per day had significantly higher scores on both measures compared to those who used it for fewer hours. These findings are consistent with previous literature highlighting the negative impact of excessive screen time on physical and psychological well-being [10]. In the context of exercise avoidance, the Health subdimension reflects concerns such as fatigue, lack of energy, or perceived physical limitations. Previous literature supports this association, indicating that prolonged sedentary behavior – particularly that driven by screen-based activities – can contribute to musculoskeletal problems, perceived physical exhaustion, and decreased physical functioning [22]. Montag and Walla [8] found that excessive smartphone and social media use correlates with reduced levels of physical activity and poorer somatic awareness, often manifesting as vague bodily complaints or reduced motivation to move. Spending extensive time on social media often leads to prolonged sitting and screen engagement, which not only reduces time available for exercise but may also reinforce cognitive justifications for avoiding physical activity, such as feeling too tired or lacking energy [23]. The present findings indicated that participants who reported using social media for 8 or more hours daily exhibited significantly higher scores on the TAS, including all its subdimensions. A large-scale study by Banyai et al. [24] found that excessive social networking site use, particularly beyond 6 hours per day, significantly correlated with symptoms of addiction such as salience, mood modification, and conflict with daily responsibilities. This supports the elevated SMA scores among the highest usage group in the current study. Furthermore, findings by Montag et al. [25] revealed that instant messaging and mobile phone overuse share addictive characteristics, including compulsive checking and emotional dependency. They found that participants who engaged in messaging platforms for extended periods showed greater psychological distress, which aligns with the elevated IMA scores observed in the current research. Similarly, the higher OGA scores among heavy users resonate with research by Hussain, Griffiths, and Baguley [26], who observed that excessive gaming – especially in adulthood – is strongly predicted by longer daily engagement. Brown's (1997) Hedonic Management Model of Addiction posits that certain pleasurable activities can lead to addiction when individuals repeatedly seek short-term euphoria at the expense of long-term goals. The model highlights the role of conscious choices and suggests that recovery involves greater self-awareness and reduced engagement in the addictive behavior. In terms of general web-based activity, a study by Young and Brand [27] noted that individuals who spent more than 8 hours online daily scored significantly higher on the WSA subdimension, particularly in domains of impulse control and emotional regulation – an observation that parallels the higher WSA scores in the current study.

The results of the correlation analysis revealed a weak but statistically significant negative relationship between age and the TAS, indicating that younger individuals tend to exhibit higher levels of problematic technology use. This finding aligns with previous research suggesting that younger populations, particularly digital natives, are more susceptible to compulsive digital device use, likely due to their developmental stage and extensive exposure to technology [25, 28]. In contrast, no significant correlation was found between age and the REAS, suggesting that tendencies to avoid physical activity may be shaped more by individual characteristics or environmental factors than by age itself.

Furthermore, a moderate and significant positive correlation between the TAS and REAS scores suggests a meaningful association between technology overuse and exercise avoidance. This relationship was particularly evident in the Anxiety and Interest subdimensions of the REAS, which were moderately correlated with the SMA, IMA, and WSA subdimensions of the TAS. These findings are consistent with prior studies demonstrating that excessive technology use may contribute to sedentary behavior and lower physical activity levels [29, 30].

Conclusions

The findings indicated that males were more likely than females to report health- and motivation-related barriers to physical activity, as well as higher levels of online gaming addiction. However, no significant gender differences were observed in other domains of technology use or exercise avoidance. Academic year level did not yield meaningful variation, suggesting that these behaviors remain relatively stable throughout undergraduate education. Notably, extensive social media use (8 hours or more daily) was strongly associated with both higher exercise avoidance and greater technology addiction scores, underscoring the detrimental impact of excessive screen time on health-related behaviors. The results further revealed a significant positive correlation between technology addiction and exercise avoidance, highlighting the interrelated nature of sedentary digital engagement and reduced physical activity. Collectively, these findings suggest that excessive technology use not only contributes to addictive digital behaviors but also reinforces avoidance of physical activity. The research was conducted exclusively with university students, which limits the extent to which the findings can be generalized to other age groups and broader populations. Future research could expand the sample to include adolescents, older adults, or individuals from diverse socioeconomic backgrounds. Moreover, incorporating other variables – such as personality traits or academic stress – could offer a more comprehensive understanding of the factors that contribute to exercise avoidance and technology addiction.

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Conflict of Interest

The authors declare no conflict of interest.

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