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Original Article

Examination of Exercise Craving in Individuals Who Exercise Regularly According to Sex, Age, Educational Level, and Exercise Duration

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Abstract

Understanding the psychological processes involved in maintaining regular exercise behavior is important for promoting healthy exercise habits. Exercise craving, defined as an intense desire and cognitive preoccupation with engaging in exercise, may vary according to individual and exercise-related characteristics. This study aimed to examine exercise craving according to sex, age, educational level, and exercise-related characteristics in individuals who exercise regularly. The study included 314 adults who had exercised regularly for at least six months (113 women, 201 men; mean age = 30.94 ± 10.25 years). Exercise craving was assessed using the Exercise Craving Scale. Men had significantly higher overall exercise craving ($p = .004$), exercise obsession ($p = .002$), and withdrawal effects ($p = .004$) scores than women. Age was negatively correlated with withdrawal effects ($r = -.237$, $p < .001$), but was not significantly associated with overall exercise craving or exercise obsession. Educational level was significantly associated only with withdrawal effects ($p < .001$). Years of exercise participation differed significantly for exercise obsession ($p = .020$), with higher scores among those exercising for seven years or more than among those exercising for 1–2 years ($p = .016$). Daily exercise duration was not significantly associated with any scale score ($p > .05$). Weekly exercise frequency was significantly associated with overall exercise craving ($p = .031$) and exercise obsession ($p = .001$), but not with withdrawal effects ($p = .796$). Overall, different dimensions of exercise craving showed distinct associations with sociodemographic and exercise-related characteristics.

Keywords: Exercise addiction, Exercise craving, Exercise obsession, Exercise withdrawal.

Introduction

The adoption of regular exercise behavior, as well as its long-term maintenance, constitutes one of the central areas of research in sport and exercise sciences (Gabay & Oravitan, 2023; Rodrigues & Teixeira, 2023). Although many individuals initiate exercise with the aim of improving their health, enhancing their physical appearance, or increasing their performance, maintaining this behavior over the long term remains a considerable challenge for many people (Ekkekakis & Biddle, 2023; Stone & Klein, 2004). In contrast, some individuals make exercise an indispensable part of their daily lives; when unable to exercise, they may experience restlessness or withdrawal symptoms, spend a substantial portion of the day thinking about exercise, and show a tendency to resume exercising at the earliest opportunity. These characteristics are regarded as key manifestations of exercise

addiction or excessive exercise behavior (Colledge et al., 2020; Landolfi, 2013). The fact that the same behavior may gradually cease in some individuals while remaining strongly persistent in others suggests that exercise behavior cannot be explained solely by planned decisions and highlights the need for a more detailed examination of the underlying psychological processes.

Research aimed at explaining the maintenance of exercise behavior has long focused on constructs such as self-efficacy (Eynon et al., 2019), intrinsic motivation (Turner & Reed, 2022), exercise commitment (Wilson et al., 2004), and exercise addiction (Weinstein & Szabo, 2023). Although each of these variables has made important contributions to explaining specific aspects of exercise behavior, they do not adequately clarify why an individual may experience a strong desire to exercise at a particular moment. In particular, the intense sense of deprivation experienced by some individuals when exercise is postponed or interrupted for various reasons, their persistent thoughts about exercise, or the development of a strong desire to resume exercising point to a distinct psychological construct that warrants consideration beyond existing motivational models. In this context, the concept of exercise craving, which has attracted increasing attention in recent years (İlbak et al., 2024, 2026), has emerged as a noteworthy approach to explaining the maintenance of exercise behavior.

Exercise craving is defined as the experience of an intense urge, strong desire, and cognitive preoccupation with engaging in exercise (İlbak et al., 2024). However, considering this construct solely within the context of exercise addiction would constitute an incomplete approach, as exercise craving does not necessarily reflect pathological behavior. Among healthy individuals who exercise regularly, a strong desire to exercise may also emerge as a natural motivational mechanism that supports the maintenance of exercise habits (İlbak et al., 2024, 2026). Thus, exercise craving may be regarded, on the one hand, as an important psychological determinant that may help explain the persistence of regular physical activity behavior and, on the other hand, as a dual-faceted construct that, when experienced at excessive levels, may be associated with maladaptive patterns such as compulsive exercise behavior and exercise addiction (İlbak et al., 2026). This dual nature underscores the need to investigate exercise craving not only in clinical samples but also among healthy individuals who engage in regular exercise.

Despite growing interest in the construct, a substantial portion of the existing literature has focused on the conceptualization (İlbak et al., 2024) and measurement of exercise craving (İlbak et al., 2026). In contrast, the question of which individual characteristics are associated with exercise craving remains largely unanswered. Exercise behavior is inherently heterogeneous, and individuals differ considerably in their reasons for initiating exercise, exercise histories, training habits, and lifestyles (Box et al., 2019). The role of these differences in the development of exercise craving has yet to be sufficiently clarified. In particular, the simultaneous examination of sociodemographic characteristics and exercise-related variables may provide important insights into this issue. Individual characteristics such as sex, age, and educational level may influence the meaning attributed to exercise and the benefits individuals expect to derive from it. Similarly, the number of years an individual has exercised regularly, weekly exercise frequency, daily exercise duration, and preferred type of exercise may be considered indicators of the extent to which exercise behavior has become integrated into the individual's lifestyle. Studies examining the relative contributions of these variables to exercise craving remain notably limited.

Identifying the variables associated with exercise craving may contribute to a better understanding of the mechanisms underlying the long-term maintenance of exercise behavior, while also providing practitioners with valuable information for predicting the risk of exercise discontinuation, designing individualized exercise programs, and promoting healthy exercise habits. Accordingly, the aim of the present study was to examine sociodemographic and exercise-related variables associated with exercise craving among individuals who engage in regular exercise.

Material and Methods

Research Design

This study employed a quantitative, cross-sectional, and correlational design to examine the relationships between exercise craving, sociodemographic characteristics, and exercise-related variables among individuals who engage in regular exercise. Data were collected from participants at a single time point using self-report measures. Exercise craving was treated as the primary dependent variable, whereas sociodemographic characteristics and indicators of exercise behavior were structured as independent variables. The research design was developed to allow, on the one hand, an examination of whether exercise craving scores differed according to participant characteristics and, on the other hand, an assessment of the relative contributions of the relevant variables to explaining exercise craving. Accordingly, the study was based on a comprehensive methodological framework incorporating descriptive statistics, group comparisons, and multivariate analyses.

Participants

An a priori power analysis was conducted using G*Power 3.1 to determine the minimum sample size required for the study. The analysis was based on a one-way analysis of variance (one-way ANOVA), assuming a medium effect size (f = 0.25), a significance level of α = .05, and statistical power of .95. The analysis indicated that a minimum sample size of 252 participants was required. To account for potential data loss, a total of 314 participants were included in the study. Criterion sampling, one of the purposive sampling techniques, was used in the selection of participants.

Specific eligibility criteria were applied to participant selection in order to examine the variables associated with exercise craving among individuals who engage in regular exercise. Accordingly, individuals were eligible for inclusion if they were aged 18 years or older, had been exercising regularly for at least six months, and engaged in exercise at least one day per week. For the purposes of the present study, regular exercise was defined as having a planned and consistently maintained physical exercise routine. Additional inclusion criteria were voluntary participation, provision of informed consent, and complete completion of the data collection instruments.

Exclusion criteria were also established to ensure that the study sample consisted of adults who regularly engaged in exercise. Accordingly, individuals were excluded if they were younger than 18 years of age, had not exercised regularly for at least six months, did not meet the study criterion for weekly exercise frequency, or did not maintain exercise as a consistent behavioral habit. The demographic characteristics of the participants are presented in Table 1.

Table 1. Demographic characteristics of the participants.

Variable	Category	n	%
Sex	Female	113	36.0
	Male	201	64.0
Age	M = 30.94, SD = 10.25, Md = 30.00	–	–
Educational Level	Secondary education (High School)	55	17.5
	Associate Degree	78	24.8
	Bachelor's Degree	130	41.4
	Postgraduate Degree	51	16.2
Years of Exercise Participation	1–2 years	102	32.5
	3–4 years	63	20.1
	5–6 years	21	6.7
	7 years or more	128	40.8
Average Daily Exercise Duration	45–60 min	164	52.2
	60 min	73	23.2
	90 min	40	12.7
	120 min or more	37	11.8
Average Number of Exercise Days per Week	1–2 days	71	22.6
	3–4 days	189	60.2
	5–6 days	54	17.2

Note. N = 314; M = Mean; SD = Standard Deviation; Md = Median.

Data Collection Instruments

Personal Information Form

A Personal Information Form developed by the researcher was used to determine participants' sociodemographic characteristics and basic features related to their exercise behavior. The form was structured to collect information on participants' individual characteristics and exercise habits in accordance with the aims of the study. In addition to sociodemographic variables such as sex, age, and educational level, the form included questions regarding the duration of regular exercise participation, average daily exercise duration, and weekly exercise frequency.

Exercise Craving Scale

The Exercise Craving Scale, developed by İlbak et al. (2026), was used to assess participants' levels of exercise craving. The scale employs a 5-point Likert-type response format, with items scored from 1 = *Strongly disagree* to 5 = *Strongly agree*. Higher scores indicate more pronounced symptoms of exercise craving experienced when an individual is unable to exercise. The scale contains no reverse-scored items.

The scale consists of two subdimensions: Exercise Obsession and Withdrawal Effects. The Exercise Obsession subdimension comprises the first four items and assesses cognitive and emotional symptoms such as an intensified desire to exercise when unable to do so, frequent thoughts about exercise, mental preoccupation with exercise, and feelings of restlessness. The Withdrawal Effects subdimension consists of the final four items and evaluates withdrawal-related consequences, including difficulty controlling the urge to exercise, deterioration in mood on days when exercise cannot be performed, difficulty concentrating, and a reduction in enjoyment derived from other pleasurable activities due to the perceived need to exercise.

Regarding the psychometric properties of the scale, exploratory factor analysis showed that the two-factor structure explained 74.628% of the total variance. Confirmatory factor analysis also demonstrated that this structure provided a good fit to the data (χ^2/df = 2.327, RMSEA = 0.077, SRMR = 0.030, CFI = 0.995, TLI = 0.990). The internal consistency coefficient for the total scale was reported as Cronbach's α = 0.897. For the subdimensions, Cronbach's α = 0.887, composite reliability (CR) = 0.888, and average variance extracted (AVE) = 0.670 were reported for Exercise Obsession, whereas Cronbach's α = 0.849, CR = 0.843, and AVE = 0.585 were reported for Withdrawal Effects. Test–retest reliability coefficients were reported as 0.85 for the Exercise Obsession subdimension and 0.81 for the Withdrawal Effects subdimension.

Data Collection Procedure

The study data were collected through an online survey. Prior to the initiation of data collection, ethical approval for the study was obtained from the Ethics Committee of Çankırı Karatekin University with Decision No. 67, dated June 9, 2026. In the first section of the data collection form, participants were informed about the purpose of the study and provided voluntary informed consent. Participants then completed the Personal Information Form followed by the Exercise Craving Scale.

Data were collected using the self-report method, and participants were expected to complete the survey in approximately 5 minutes. The data obtained were used solely for scientific purposes and were protected in accordance with the principle of confidentiality.

Statistical Analysis

IBM SPSS Statistics version 25.0 was used for the statistical analysis of the study data. Initially, the dataset was examined for missing data, outliers, and assumptions of normality. The assumption of normal distribution was evaluated based on skewness and kurtosis coefficients, with values within the range of ±2 considered indicative of an approximately normal distribution. For analyses involving parametric tests, homogeneity of variances was assessed using Levene's test. Independent-samples t-tests were used for comparisons between two groups, whereas one-way analysis of variance (ANOVA) was used for comparisons involving more than two groups. When statistically significant ANOVA results were obtained, Tukey's Honestly Significant Difference (HSD) post hoc test was applied for multiple comparisons. Because the assumption of normality was not met for the variable representing years of exercise participation, group comparisons for this variable were conducted using the Kruskal–Wallis H test. When significant differences were identified, pairwise comparisons with Bonferroni correction were performed to determine which groups accounted for the differences. The relationships between age and the total Exercise Craving Scale score, as well as its subdimension scores, were examined using Pearson correlation analysis. For all statistical analyses, the level of statistical significance was set at $p < .05$.

Results

The findings obtained in the present study are presented sequentially based on the statistical analyses conducted to examine the total Exercise Craving Scale score and the Exercise Obsession and Withdrawal Effects subdimension scores according to participants' sex, age, educational level, years of exercise participation, average daily exercise duration, and average weekly exercise frequency.

Table 2. Comparison of the exercise craving scale total and subdimension scores according to sex.

Variable	Sex	n	M	SD	*t*	*df*	*p*
Exercise Craving Total	Female	113	3.14	0.72	-2.929	312	.004*
	Male	201	3.40	0.76			
Exercise Obsession	Female	113	3.29	0.77	-3.141	312	.002*
	Male	201	3.59	0.81			
Withdrawal Effects	Female	113	2.79	0.81	-2.869	253.22	.004*
	Male	201	3.08	0.91			

*p < .01. Note. The assumption of homogeneity of variances was met for the total score and the Exercise Obsession subdimension. Because Levene's test was significant for the Withdrawal Effects subdimension, the results obtained without assuming equal variances are reported.

Table 2 presents the results of the independent-samples t-tests comparing the Exercise Craving Scale total score and subdimension scores according to participants' sex. The analysis revealed that male participants (M = 3.40, SD = 0.76) had significantly higher total exercise craving scores than female participants (M = 3.14, SD = 0.72), t(312) = -2.929, p = .004. A significant difference between sexes was also observed for the Exercise Obsession subdimension. Male participants (M = 3.59, SD = 0.81) scored significantly higher than female participants (M = 3.29, SD = 0.77), t(312) = -3.141, p = .002. For the Withdrawal Effects subdimension, Levene's test indicated that the assumption of homogeneity of variances was violated; therefore, the results obtained without assuming equal variances were considered. The analysis showed that male participants (M = 3.08, SD = 0.91) had significantly higher scores than female participants (M = 2.79, SD = 0.81), t(253.22) = -2.869, p = .004.

Table 3. Descriptive statistics and pearson correlation coefficients for the exercise craving scale total score, subdimensions, and age.

Variable	M	SD	1	2	3	4
1. Age	**30.94**	**10.25**	**–**			
2. Exercise Craving Total	3.31	0.75	-.074	–		
3. Exercise Obsession	3.48	0.80	.027	.920**	–	
4. Withdrawal Effects	2.98	0.88	-.237**	.868**	.625*	–

*$p < .01$; ** $p < .05$.

Table 3 presents the results of the Pearson correlation analysis examining the relationships between age and the Exercise Craving Scale total score and its subdimensions. The analysis revealed no statistically significant relationship between age and the Exercise Craving Scale total score (r = -.074, p = .193) or the Exercise Obsession subdimension (r = .027, p = .635). In contrast, a weak, negative, and statistically significant correlation was observed between age and the Withdrawal Effects subdimension (r = -.237, $p < .001$).

Table 4. One-Way ANOVA results comparing the exercise craving scale total and subdimension scores according to educational level.

Variable	Educational Level	n	M	SD	F	p	Tukey HSD
Exercise Craving Total	1. Secondary Education (High School)	55	3.53	0.79	2.171	.091	–
	2. Associate Degree	78	3.27	0.75			
	3. Bachelor's Degree	130	3.23	0.75			
	4. Postgraduate Degree	51	3.31	0.70			
Exercise Obsession	1. Secondary Education (High School)	55	3.65	0.85	1.850	.138	–
	2. Associate Degree	78	3.34	0.77			
	3. Bachelor's Degree	130	3.45	0.80			
	4. Postgraduate Degree	51	3.58	0.80			
Withdrawal Effects	1. Secondary Education (High School)	55	3.32	0.89	6.630	< .001*	1 > 3, 1 > 4, 2 > 3
	2. Associate Degree	78	3.15	0.87			
	3. Bachelor's Degree	130	2.79	0.87			
	4. Postgraduate Degree	51	2.81	0.78			

*p < .01.

Table 4 presents the results of the one-way analysis of variance examining differences in the Exercise Craving Scale total score and subdimension scores according to participants' educational level. The results indicated no statistically significant differences across educational levels in the Exercise Craving Scale total score, $F(3, 310) = 2.171$, $p = .091$, or the Exercise Obsession subdimension, $F(3, 310) = 1.850$, $p = .138$. In contrast, Withdrawal Effects scores differed significantly according to educational level, $F(3, 310) = 6.630$, $p < .001$. Tukey HSD post hoc comparisons revealed that participants with a secondary education (high school) had significantly higher Withdrawal Effects scores than those with bachelor's and postgraduate degrees. In addition, participants with an associate degree had significantly higher Withdrawal Effects scores than those with a bachelor's degree. No statistically significant differences were observed between the remaining educational-level groups.

Table 5. Kruskal–wallis test results for exercise craving scale scores according to years of exercise participation.

Variable	1–2 Years	3–4 Years	5–6 Years	7 Years or More	χ^2	*p*	Post Hoc
Exercise Craving Total	147.90	164.85	134.79	165.26	3.818	.282	–
Exercise Obsession	138.17	160.69	140.38	174.14	9.821	.020*	7 years or more > 1–2 years
Withdrawal Effects	163.29	175.87	137.81	147.07	5.725	.126	–

*p < .05. Note. Values presented in the table represent mean ranks. Pairwise comparisons were conducted using the Bonferroni correction.

Table 5 presents the results of the Kruskal–Wallis test examining differences in the Exercise Craving Scale total score and the Exercise Obsession and Withdrawal Effects subdimension scores according to participants' years of exercise participation. The results indicated no statistically significant differences in the Exercise Craving Scale total score, $\chi^2(3) = 3.818$, $p = .282$, or the Withdrawal Effects subdimension, $\chi^2(3) = 5.725$, $p = .126$, according to years of exercise participation. However, Exercise Obsession scores differed significantly according to years of exercise participation, $\chi^2(3) = 9.821$, $p = .020$. Bonferroni-adjusted pairwise comparisons showed that participants who had been exercising for 7 years or more had significantly higher Exercise Obsession scores than those who had been exercising for 1–2 years ($p = .016$). No statistically significant differences were observed in the remaining pairwise comparisons.

Table 6. One-way ANOVA results for exercise craving scale scores according to average daily exercise duration.

Variable	Daily Exercise Duration	*n*	*M*	*SD*	*F*	*p*
Exercise Craving Total	45–60 min	164	3.24	0.77	1.027	.381
	61–89 min	73	3.32	0.69		
	90–119 min	40	3.43	0.82		
	120 min or more	37	3.43	0.72		
Exercise Obsession	45–60 min	164	3.41	0.83	0.935	.424
	61–89 min	73	3.55	0.70		
	90–119 min	40	3.61	0.83		
	120 min or more	37	3.52	0.86		
Withdrawal Effects	45–60 min	164	2.91	0.90	1.481	.220
	61–89 min	73	2.93	0.83		
	90–119 min	40	3.12	0.90		
	120 min or more	37	3.20	0.85		

Table 6 presents the results of the one-way analysis of variance examining differences in the Exercise Craving Scale total score and the Exercise Obsession and Withdrawal Effects subdimension scores according to participants' average daily exercise duration. The results indicated no statistically significant differences according to average daily exercise duration in the Exercise Craving Scale total score, $F(3, 310) = 1.027$, $p = .381$; the Exercise Obsession subdimension, $F(3, 310) = 0.935$, $p = .424$; or the Withdrawal Effects subdimension, $F(3, 310) = 1.481$, $p = .220$.

Table 7. One-way ANOVA results for exercise craving scale scores according to average weekly exercise frequency.

Variable	Average Weekly Exercise Frequency	*n*	*M*	*SD*	*F*	*p*	Tukey HSD
Exercise Craving Total	1. 1–2 days per week	71	3.10	0.82	3.504	.031*	2 > 1
	2. 3–4 days per week	189	3.37	0.71			
	3. 5–6 days per week	54	3.36	0.78			
Exercise Obsession	1. 1–2 days per week	71	3.17	0.89	7.120	.001**	2 > 1, 3 > 1
	2. 3–4 days per week	189	3.58	0.73			
	3. 5–6 days per week	54	3.55	0.87			
Withdrawal Effects	1. 1–2 days per week	71	2.92	0.85	0.229	.796	–
	2. 3–4 days per week	189	2.99	0.89			
	3. 5–6 days per week	54	3.01	0.91			

*$p < .05$; ** $p < .01$.

Table 7 presents the results of the one-way analysis of variance (ANOVA) examining differences in the Exercise Craving Scale total score and its Exercise Obsession and Withdrawal Effects subdimension scores according to participants' average weekly exercise frequency. The results revealed a statistically significant difference in total Exercise Craving Scale scores across weekly exercise frequency groups, $F(2, 311) = 3.504$, $p = .031$. Tukey HSD post hoc comparisons indicated that participants who exercised 3–4 days per week had significantly higher total exercise craving scores than those who exercised 1–2 days per week. No statistically significant differences were found between the other groups.

Exercise Obsession scores also differed significantly according to average weekly exercise frequency, $F(2, 311) = 7.120$, $p = .001$. Tukey HSD post hoc comparisons showed that participants who exercised 3–4 days per week and those who exercised 5–6 days per week

had significantly higher Exercise Obsession scores than participants who exercised 1–2 days per week. However, no statistically significant difference was observed between participants who exercised 3–4 days per week and those who exercised 5–6 days per week. In contrast, Withdrawal Effects scores did not differ significantly according to average weekly exercise frequency, $F(2, 311) = 0.229$, $p = .796$.

Discussion

The present study aimed to examine exercise craving among individuals who engage in regular exercise in relation to sociodemographic characteristics and exercise-related variables. The findings revealed that different components of exercise craving may exhibit distinct patterns according to individual and exercise-related characteristics. One of the first notable findings was that male participants had higher total exercise craving, Exercise Obsession, and Withdrawal Effects scores than female participants. This finding is partially consistent with a recent study reporting significantly higher exercise addiction scores among male university students than among female students (Wang et al., 2025). Similarly, a recent meta-analysis including 30 studies indicated that sex may be an important variable in exercise addiction, although this association may vary depending on the type of exercise, with a higher risk particularly observed among men engaged in strength-oriented activities (Zhu et al., 2026). Nevertheless, although exercise craving is related to exercise addiction, it has recently been conceptualized as a distinct construct comprising the dimensions of Exercise Obsession and Withdrawal Effects (İlbak et al., 2026). Therefore, although the present findings suggest that sex may play a role in exercise craving, this difference should not be interpreted as an independent effect of sex without considering exercise type, intensity, motivation, and other individual characteristics.

With regard to age, no significant relationship was found with total exercise craving or Exercise Obsession, whereas Withdrawal Effects decreased as age increased. A study conducted among physically active young adults reported that individuals aged 18–20 years had higher exercise addiction scores than those aged 20–35 years (Khoshro et al., 2024). Similarly, among gym-goers, individuals aged 17–23 years were found to have higher tendencies toward exercise addiction than those aged 30–36 years and those older than 43 years (İzgi Tezcan & Alp, 2024). A more recent study also identified a weak negative relationship between age and the risk of exercise addiction among adults (Orhan et al., 2026). These findings appear to be consistent with the present result indicating a decline in Withdrawal Effects with increasing age.

In terms of educational level, total exercise craving and Exercise Obsession scores did not differ significantly, whereas Withdrawal Effects were higher in some groups with lower educational attainment. This finding is indirectly consistent with previous research examining the relationship between educational level and problematic exercise behaviors. Sarıyer and Ünübol (2023) reported significantly higher exercise addiction scores among participants with lower educational levels. Similarly, İribalcı et al. (2026) found that veteran tennis players with bachelor's degrees had significantly higher exercise addiction scores than those with master's or doctoral degrees. In the international literature, Lukács et al. (2019) demonstrated that lower educational attainment was associated with an increased risk of developing exercise addiction among Hungarian amateur runners and that educational level was one of the variables that significantly explained this risk.

Regarding exercise history, total exercise craving and Withdrawal Effects did not differ significantly, whereas individuals who had been exercising for 7 years or more had higher Exercise Obsession scores than those who had been exercising for 1–2 years. This

finding suggests that the relationship between exercise history and problematic exercise patterns may not manifest uniformly across all components of exercise behavior. Indeed, Bavlı et al. (2011) reported significant differences between exercise addiction groups in terms of exercise history, while Orhan et al. (2019) found that exercise addiction differed significantly according to the number of years of regular training. However, some studies have reported no significant association between exercise history and exercise addiction (Youngman & Simpson, 2014; Maceri et al., 2021). In this context, exercise history may not function as a general indicator of exercise craving or withdrawal in itself, but may instead show a more specific association with cognitive preoccupation and obsession with exercise, as observed in the present study.

No significant differences were observed in total exercise craving, Exercise Obsession, or Withdrawal Effects according to average daily exercise duration. This finding differs from some previous studies reporting an association between exercise duration and exercise addiction. Uz and Bavlı (2016) identified a weak positive relationship between daily exercise duration and total exercise addiction scores. Similarly, higher numbers of exercise days and exercise hours have been associated with greater levels of exercise addiction (Basoglu, 2018). López et al. (2022) identified training-session duration as one of the variables associated with the risk of exercise addiction among amateur long-distance runners. Furthermore, meta-analytic evidence has shown that individuals at risk of exercise addiction spend more time exercising per week (Simón-Grima et al., 2019). However, direct comparison with the present findings is limited because these studies assessed exercise addiction rather than exercise craving, and some focused on total weekly exercise volume rather than the duration of individual daily sessions. Accordingly, the present finding suggests that the duration of a single exercise session may not, by itself, be sufficient to explain exercise craving.

Finally, with regard to weekly exercise frequency, participants who exercised 3–4 days per week had higher total exercise craving scores than those who exercised 1–2 days per week. Exercise Obsession scores were also higher among participants who exercised 3–4 days and 5–6 days per week than among those who exercised 1–2 days per week, whereas Withdrawal Effects did not differ according to weekly exercise frequency. These findings are largely consistent with previous research on weekly exercise frequency. Studies conducted in Türkiye have reported that weekly exercise frequency is associated with exercise addiction (Bavlı et al., 2011; Uz & Bavlı, 2016). Freire et al. (2021) identified positive associations between weekly training frequency and both total exercise addiction scores and several subdimensions. Similarly, Maceri et al. (2021) showed that the number of weekly running sessions was a significant predictor of running addiction scores. Other studies have also demonstrated that individuals at risk of exercise addiction perform more weekly training sessions and that the number of weekly training days is associated with exercise addiction risk (López et al., 2022; Valenzuela & Arriba-Palomero, 2017). These findings suggest that, in the present study, the frequency with which exercise is repeated during the week may be more closely related to Exercise Obsession than the duration of daily exercise sessions. At the same time, the absence of significant differences in Withdrawal Effects according to weekly exercise frequency further supports the view that the subdimensions of exercise craving may display distinct patterns of association with exercise-related variables.

The present study has several limitations. Its cross-sectional design limits causal interpretations of the relationships between the variables. The online and self-report nature of data collection may also increase the possibility of recall bias and social desirability

bias. The inclusion of only adults who had been exercising regularly for at least six months, together with the higher proportion of male participants, may limit the generalizability of the findings. In addition, exercise behavior was assessed in terms of exercise history, daily duration, and weekly frequency, whereas variables such as exercise type, intensity, and motivation were not examined. Finally, because the analyses were predominantly based on group comparisons and bivariate relationships, the independent effects of the variables could not be fully determined. Future research should therefore employ longitudinal designs, more balanced samples, objective measures of exercise behavior, and multivariate analytical approaches.

Conclusions

The present study demonstrates that exercise craving cannot be explained by a single behavioral indicator and that individual characteristics and different components of exercise habits may show distinct patterns of association with Exercise Obsession and Withdrawal Effects. In particular, the finding that exercise history and weekly exercise frequency were more closely associated with Exercise Obsession, whereas age and educational level were primarily associated with Withdrawal Effects, highlights the need to conceptualize exercise craving as a multidimensional construct. In contrast, the absence of significant differences according to daily exercise duration suggests that exercise craving cannot be explained solely by the amount of exercise performed. These findings suggest that, when evaluating individuals who engage in regular exercise, it may be important to consider not only exercise frequency and duration but also cognitive preoccupation with exercise and withdrawal-like responses that emerge when exercise cannot be performed. Within this framework, a better understanding of exercise craving may contribute to supporting sustainable and individualized exercise habits and to the earlier identification of patterns characterized by an excessive orientation toward exercise. Nevertheless, because of the cross-sectional nature of the study, no conclusions should be drawn regarding the direction or causality of the observed relationships. Longitudinal studies are therefore needed to examine how these relationships develop over time.

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