

The Relationship between Physical Activity Enjoyment and Exercise Addiction

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Abstract This study investigates the relationship between physical activity enjoyment and exercise addiction, considering gender, age, sports licensure, and exercise frequency. Using a correlational survey model and convenience sampling, data were collected from 560 participants (201 females, 359 males, average age 23.52 years) through the Physical Activity Enjoyment Scale (PACES) and the Exercise Addiction Scale (EAS). Results indicate significant gender differences in exercise addiction, with males scoring higher in overall exercise addiction and its sub-dimensions (excessive focus, emotional change, postponement of social needs). Both genders, however, reported similar levels of enjoyment from physical activities. Licensed athletes exhibited higher scores in both enjoyment and exercise addiction, implying that structured, goal-oriented routines enhance motivation and adherence to exercise. A positive correlation was found between exercise frequency and both enjoyment and addiction. A significant negative correlation between age and exercise addiction suggests younger individuals are more prone to addiction, while enjoyment of physical activities remains consistent across age groups. The strong relationship between physical activity enjoyment and exercise addiction underscores the role of intrinsic motivation in maintaining high levels of physical activity, which can potentially lead to dependence. These findings highlight the need for tailored interventions that promote healthy exercise habits

and address specific demographic factors to enhance effectiveness. Future research should further explore these relationships to develop comprehensive strategies for lifelong physical activity.

Keywords Sports, Exercise, Physical Activity, Enjoyment, Addiction

1. Introduction

Exercise addiction and enjoyment of physical activity are pivotal topics in sports psychology, with substantial implications for physical and mental health [1-3]. Regular physical activity is widely recognized for its numerous health benefits, such as improved cardiovascular health, enhanced mental well-being, and overall quality of life improvements [4-6]. The positive effects of regular exercise include reduced risks of chronic diseases, better mood regulation, and improved social interactions, which collectively contribute to a higher quality of life [7-9]. However, the transition from healthy exercise habits to compulsive, addictive behaviours can have detrimental effects, turning beneficial activities into sources of physical and psychological distress [1-3].

Exercise addiction is characterized by an obsessive and

excessive commitment to physical activity, often despite negative consequences [10-12]. This condition can be driven by various psychological factors, including anxiety, perfectionism, and body image concerns, which can overshadow the intrinsic enjoyment of exercise [13-15]. Individuals with exercise addiction may experience withdrawal symptoms, guilt, and anxiety when unable to exercise, indicating a psychological dependence akin to substance addiction [16-18]. The compulsive nature of exercise addiction not only leads to an increased risk of physical injuries but also contributes to social isolation and deteriorating mental health [10-12].

The relationship between exercise addiction and the enjoyment of physical activity is multifaceted. Enjoyment is a crucial motivator for maintaining regular exercise routines, and individuals who find physical activity pleasurable are more likely to sustain long-term engagement, thereby reaping the associated health benefits [19-21]. Enjoyment of physical activity has been linked to higher levels of intrinsic motivation, which is associated with sustained participation and better mental health outcomes [22-24]. However, when exercise becomes an addiction, the enjoyment often diminishes as the activity shifts from a source of pleasure to a compulsive necessity [25-27].

The transition from enjoyment to addiction involves complex psychological mechanisms. For instance, individuals may initially exercise to improve their health and well-being but gradually increase their activity levels to cope with stress or negative emotions, leading to a dependency on exercise for psychological relief [22,28]. This shift can result in a cycle where the individual feels compelled to exercise more frequently and intensely, often at the expense of their physical health and social relationships [3,15,29].

Promoting a balanced approach to exercise is crucial. Interventions should focus on enhancing the enjoyment of physical activity while mitigating the risks of addiction. This involves understanding the psychological underpinnings of exercise behaviours and developing strategies that foster positive exercise experiences without leading to addictive patterns [22,28]. Cognitive-behavioural therapy (CBT) and motivational interviewing (MI) are among the practical approaches that can help individuals develop healthier relationships with exercise by addressing underlying psychological issues and promoting intrinsic motivation [9,23,25].

Additionally, public health initiatives and educational programs can play a significant role in promoting balanced exercise habits. These programs can provide individuals with the knowledge and skills needed to engage in physical activity safely and enjoyably, emphasizing the importance

of moderation and the risks associated with over-exercising [30-32]. Encouraging a supportive environment where individuals can enjoy physical activity without the pressure to overperform is essential for preventing exercise addiction and fostering long-term well-being [9,20,25].

By examining the interplay between the factors contributing to exercise addiction and the methods by which the enjoyment of physical activity can be preserved and promoted, this article aims to provide insights that can guide the development of interventions designed to foster healthier exercise habits and enhance the quality of life for individuals engaged in physical activity. Understanding these dynamics is essential for developing effective strategies to ensure that physical activity remains a positive and beneficial part of life for all individuals [7,8,31]. This article aims to delve into these critical factors and their interconnections.

2. Method

Model

This research, which aims to examine the relationship between individuals' levels of enjoyment of physical activity and their exercise addiction along with some demographic variables, is a descriptive study in a correlational survey model. Although correlational studies do not prove causality in a true sense, it is possible to make inferences about cause-and-effect relationships using advanced statistical techniques [33].

Study Group

The research study group was formed using a convenience sampling method. The convenience sampling method, based on accessibility and convenience, is preferred for quickly collecting information on specific research topics [34]. Of the 560 individuals selected using the convenience sampling method, 35.9% (n: 201) are female, and 64.1% (n: 359) are male. Of the participants, 24.5% (n: 137) are high school graduates, 63.9% (n: 358) are undergraduate graduates, and 11.6% (n: 65) are postgraduate graduates. 62% (n: 347) of the group participating in the research hold a license in a sports branch, while 38% (n: 213) do not have a license. 45.5% (n: 255) of the participants are married and 54.5% (n: 305) are single. The average age of the participants is 32.57 years (Table 1). The individuals participating in the research were administered the measurement tool through an online form.

Table 1. Distribution of Participants in the Research Sample According to Some Variables

| Variable | | 1 | 2 | 3 | Total |
|-----------------|----------|--------------------|----------------------|---------------------|-------|
| | | <i>Women</i> | <i>Men</i> | | |
| Gender | <i>n</i> | 201 | 359 | | 560 |
| | % | 35.9 | 64.1 | | 100.0 |
| | | <i>Yes</i> | <i>No</i> | | |
| Sports License | <i>n</i> | 347 | 213 | | 560 |
| | % | 62 | 38 | | 100.0 |
| | | <i>Married</i> | <i>Single</i> | | |
| Marital Status | <i>n</i> | 255 | 305 | | 560 |
| | % | 45.5 | 54.5 | | 100.0 |
| | | <i>High School</i> | <i>Undergraduate</i> | <i>Postgraduate</i> | |
| Education Level | <i>n</i> | 137 | 358 | 65 | 560 |
| | % | 24.5 | 63.9 | 11.6 | 100.0 |
| | | <i>Min.</i> | <i>Max.</i> | <i>Mean</i> | |
| Age | | 18 | 74 | 32.57 | |

Data Collection

In the study, the Physical Activity Enjoyment Scale (PACES) adapted to Turkish by Özkurt et al. [35], and the Exercise Addiction Scale (EAS) developed by Demir, G. T., Hazar, Z., & Cicioğlu, H. İ. [36] were used. To determine the participants' age, gender, educational level, exercise frequency, marital status, and whether they hold a sports license, a personal information form containing the demographic information of the individuals was created.

Physical Activity Enjoyment Scale (PACES)

The scale was adapted to Turkish by Özkurt et al. [35]. It evaluates positive feelings, such as the enjoyment and pleasure expected or perceived from physical activities, consisting of one dimension and eight items. The scale items are rated on a 7-point Likert scale (1 = Strongly Disagree, ..., 7 = Strongly Agree). There are no reverse items (negative statements) on the scale. A higher average score on the scale indicates a higher level of enjoyment derived from physical activities, while a lower average score indicates a lower level of enjoyment. Özkurt et al. [35] determined that the Turkish version of the scale explains 76% of the total variance. The fit indices obtained from the DFA were found to be among acceptable and good fit indices ($\chi^2 / df = 2.368$, GFI = .98, CFI = .99, TLI = .99, RMSEA = .042, SRMR = .010).

Exercise Addiction Scale (EAS)

The scale was developed by Demir, G. T., Hazar, Z., & Cicioğlu, H. İ. [36]. Analyses conducted by Demir et al. [36] revealed a three-factor structure for the scale. The scale explains 54.61% of the variance. Upon examining the factors, it was found that the first factor, "Excessive Focus and Emotional Change," consists of the first seven items (1, 2, 3, 4, 5, 6, 7). This factor alone explains 34.89% of the exercise addiction variable in the scale. The second factor, "Postponement of Individual Social Needs and Conflict," consists of six items (8, 9, 10, 11, 12, 13). This factor alone explains 13.06% of the exercise addiction variable in the scale. The third factor, "Development of Tolerance and Passion," consists of four items (14, 15, 16, 17) and alone explains 6.65% of the exercise addiction variable in the scale.

The score ranges of the EAS are evaluated as follows: "1-17 normal group, 18-34 low-risk group, 35-51 risk group, 52-69 dependent group, 70-85 high-level dependent group." The KMO sample adequacy value was found to be 0.89, and the Bartlett-Sphericity test chi-square value was found to be 1085.010. The Cronbach's alpha reliability coefficients were 0.83 for the "Excessive Focus and Emotional Change" factor, 0.79 for the "Postponement of Individual Social Needs and Conflict" factor, and 0.77 for the "Development of Tolerance and Passion" factor, with a total Cronbach's alpha of 0.88. The fit indices obtained

from the confirmatory factor analysis of the scale were $\chi^2/df = 1.94$, RMSEA = 0.43, PGFI = 0.63, PNFI = 0.70, GFI = 0.90, AGFI = 0.87, IFI = 0.96, NFI = 0.91, and CFI = 0.96.

Data Analysis

The data analysis first examined the dataset for erroneous values, outliers, normality, and multicollinearity. It was observed that there were no erroneously entered values. The data analysis was conducted using the SPSS 25 program. The Shapiro-Wilk test was used to determine the normality of the distribution, and it was found that the data were normally distributed ($p > .05$). The t-test was used for pairwise comparisons. One-way analysis of variance (ANOVA) was used for multiple comparisons. Pearson's product-moment correlation coefficient was used to determine the relationships between variables. The significance level was set at $p < .05$.

3. Results

Table 2 shows that there is a significant difference in the total EAS scores, Excessive Focus and Emotional Change, Postponement of Individual Social Needs and Conflict, and Development of Tolerance and Passion scores between

genders in favour of males ($p < .05$). This can be interpreted to mean that male participants are more prone to Exercise Addiction compared to females. However, no significant difference was found between genders regarding PACES scores ($p > .05$). This suggests that enjoyment of physical activity is not dependent on gender.

Table 3 shows that there is a significant difference in the total PACES scores, total EAS scores, Excessive Focus and Emotional Change, Postponement of Individual Social Needs and Conflict, and Development of Tolerance and Passion scores in favour of those with a sports license ($p < .05$). This suggests that having a sports license is an important variable influencing individuals' enjoyment of physical activities and exercise addiction scores.

Table 4 shows that there is a significant difference in the total PACES scores [F (3, 556) = 21.63, $p > .001^*$], total EAS scores [F (3, 556) = 42.12, $p > .001^*$], Excessive Focus and Emotional Change [F (3, 556) = 49.50, $p > .001^*$], Postponement of Individual Social Needs [F (3, 556) = 19.40, $p > .001^*$] and Conflict, and Development of Tolerance and Passion [F (3, 556) = 32.86, $p > .001^*$] scores by frequency of exercise. As a result of the LSD test performed to determine the source of the difference, it was observed that as the frequency of exercise in a week increased for all parameters, the enjoyment of physical activities and exercise addiction increased ($p < .05$).

Table 2. t-Test Results for Levels of Physical Activity Enjoyment and Exercise Addiction by Gender

| Variables | Women (n = 201) | | Men (n = 359) | | t | sd | p |
|--|--------------------|-------|------------------|-------|-------|-----|--------------|
| | \bar{X} | S | \bar{X} | S | | | |
| PACES | 49.54 | 8.22 | 49.13 | 9.08 | .53 | 558 | .59 |
| EAS Toplam | 53.20 | 15.52 | 57.84 | 16.11 | -3.30 | 558 | .001* |
| Excessive Focus and Emotional Change | 26.24 | 6.47 | 27.60 | 6.34 | -2.42 | 558 | .010* |
| Postponement of Individual Social Needs and Conflict | 15.54 | 6.31 | 17.49 | 7.01 | -3.27 | 558 | .001* |
| Development of Tolerance and Passion | 11.42 | 4.90 | 12.74 | 4.84 | -3.07 | 558 | .001* |

* $p < .05$

Table 3. t-Test Results for Levels of Physical Activity Enjoyment and Exercise Addiction by Sports License Variable

| Variables | Licensed (n = 347) | | Not Licensed (n = 213) | | t | sd | p |
|--|-----------------------|-------|---------------------------|-------|------|-----|--------------|
| | \bar{X} | S | \bar{X} | S | | | |
| PACES | 50.09 | 7.98 | 47.95 | 9.82 | 2.18 | 558 | .001* |
| EAS Total | 59.34 | 13.75 | 51.01 | 18.08 | 6.15 | 558 | .001* |
| Excessive Focus and Emotional Change | 28.41 | 5.18 | 25.01 | 7.58 | 6.31 | 558 | .001* |
| Postponement of Individual Social Needs and Conflict | 17.72 | 6.45 | 15.26 | 7.14 | 4.20 | 558 | .001* |
| Development of Tolerance and Passion | 13.20 | 4.47 | 10.74 | 5.19 | 5.92 | 558 | .001* |

* $p < .05$

Table 4. ANOVA Results for Levels of Physical Activity Enjoyment and Exercise Addiction by Frequency of Exercise

| Variables | Group | <i>n</i> | \bar{X} | <i>S</i> | <i>F</i> | <i>p</i> | <i>LSD</i> |
|---|---------------------|----------|-----------|----------|----------|----------|------------|
| PACES Toplam | 1. Never | 116 | 44.01 | 11.54 | 21.63 | .001* | 4-1; |
| | 2. 1-2 days | 168 | 50.17 | 7.51 | | | 4-2; |
| | 3. 3-4 days | 159 | 49.95 | 7.64 | | | 4-3; |
| | 4. 5 days and above | 117 | 52.31 | 6.31 | | | 3-1; |
| | Total | 560 | 49.28 | 8.78 | | | 2-1 |
| EAS Toplam | 1. Never | 116 | 43.87 | 17.30 | 42.12 | .001* | 4-1; |
| | 2. 1-2 days | 168 | 55.69 | 14.27 | | | 4-2; |
| | 3. 3-4 days | 159 | 60.20 | 13.29 | | | 3-1; |
| | 4. 5 days and above | 117 | 63.61 | 13.41 | | | 3-2; |
| | Total | 560 | 56.17 | 16.04 | | | 2-1 |
| Excessive Focus and Emotional Change | 1. Never | 116 | 21.61 | 7.75 | 49.50 | .001* | 4-1; |
| | 2. 1-2 days | 168 | 27.37 | 5.52 | | | 4-2; |
| | 3. 3-4 days | 159 | 28.94 | 4.86 | | | 3-1; |
| | 4. 5 days and above | 117 | 29.72 | 4.57 | | | 3-2; |
| | Total | 560 | 27.11 | 6.41 | | | 2-1 |
| Postponement of Individual Social Needs and Conflict | 1. Never | 116 | 13.27 | 6.60 | 19.40 | .001* | 4-1; |
| | 2. 1-2 days | 168 | 16.35 | 6.54 | | | 4-2; |
| | 3. 3-4 days | 159 | 17.88 | 6.50 | | | 4-3; |
| | 4. 5 days and above | 117 | 19.42 | 6.39 | | | 3-1; |
| | Total | 560 | 16.79 | 6.82 | | | 3-2; |
| Development of Tolerance and Passion | 1. Never | 116 | 8.98 | 4.87 | 32.86 | .001* | 4-1; |
| | 2. 1-2 days | 168 | 11.96 | 4.53 | | | 4-2; |
| | 3. 3-4 days | 159 | 13.37 | 4.27 | | | 4-3; |
| | 4. 5 days and above | 117 | 14.46 | 4.51 | | | 3-1; |
| | Total | 560 | 12.26 | 4.90 | | | 3-2; |
| | | | | | | | 2-1 |

* $p < .05$ **Table 5.** Correlation between Age and Levels of Physical Activity Enjoyment and Exercise Addiction

| Variables | <i>n</i> | PACES | EAS Total | Excessive Focus and Emotional Change | Postponement of Individual Social Needs and Conflict | Development of Tolerance and Passion |
|-----------|----------|-------|-----------|--------------------------------------|--|--------------------------------------|
| Age | 560 | -.04 | -.19** | -.09* | -.21** | -.21 |

** $p < .001$, * $p < .05$ **Table 6.** Correlation between Exercise Addiction Total and Subscale Scores and Levels of Physical Activity Enjoyment

| Variables | 1 | 2 | 3 | 4 | 5 |
|---|------|-------|-------|-------|-------|
| 1. PACES Total | 1.00 | .41** | .58** | .18** | .33** |
| 2. EAS Total | | 1.00 | .86** | .89** | .90** |
| 3. Excessive Focus and Emotional Change | | | 1.00 | .69** | .68** |
| 4. Postponement of Individual Social Needs and Conflict | | | | 1.00 | .74** |
| 5. Development of Tolerance and Passion | | | | | 1.00 |

** $p < .001$, * $p < .05$

Table 5 shows that there is a significant negative relationship between the total EAS scores, Excessive Focus and Emotional Change, Postponement of Individual Social Needs and Conflict, and Development of Tolerance and Passion scores with age ($p < .01$). This suggests that as age increases, exercise addiction decreases. However, no significant relationship was found between total PACES scores and age ($p > .05$). This indicates that the enjoyment of physical activities is the same across all age groups.

Table 6 shows that there is a positive and significant relationship between the total PACES scores and the total EAS scores ($r = .41$), Excessive Focus and Emotional Change ($r = .58$), Postponement of Individual Social Needs and Conflict ($r = .18$), and Development of Tolerance and Passion ($r = .33$) scores (** $p < .001$). This suggests that as individuals' levels of enjoyment from physical activities increase, their exercise addiction also increases. As exercise addiction increases, their levels of enjoyment from physical activities also increase.

4. Discussion

The study reveals significant gender differences in exercise addiction dimensions, indicating that male participants are more prone to exercise addiction compared to females. This includes higher scores in overall exercise addiction, excessive focus and emotional change, postponement of individual social needs and conflict, and development of tolerance and passion. This finding aligns with previous research, suggesting that societal and cultural factors may contribute to higher exercise addiction tendencies among males [11,25,27]. Moreover, the lack of significant gender difference in physical activity enjoyment scores implies that both genders experience similar levels of enjoyment from physical activities [7,37,38].

The data indicate that individuals with a sports license have significantly higher scores in both physical activity enjoyment and exercise addiction dimensions. Licensed athletes often have structured routines and goals, which can enhance their intrinsic motivation and adherence to exercise [8,23,30]. This supports the notion that sports licensure is a critical factor influencing an individual's relationship with physical activity, reinforcing previous findings that licensed athletes derive more excellent reinforcement and satisfaction from their sports activities [7,28,39].

Frequent exercisers exhibit higher scores in both physical activity enjoyment and exercise addiction dimensions, suggesting a positive correlation between exercise frequency and both enjoyment and addiction. Regular physical activity engagement can increase psychological and physiological benefits, reinforcing the behaviour and potentially leading to exercise dependence [4-5,40]. This finding is consistent with the literature, indicating that a higher exercise frequency is associated with increased intrinsic motivation and positive

reinforcement [9,20,41].

The study finds a significant negative correlation between age and exercise addiction dimensions, indicating that exercise addiction tends to decrease with age. This is consistent with research suggesting that younger individuals are more likely to exhibit higher levels of exercise addiction due to higher physical and social demands [25,31,42]. Conversely, the enjoyment of physical activities remains consistent across all age groups, which supports the idea that intrinsic enjoyment of physical activity does not diminish with age [4,5]. This consistency in enjoyment across age groups suggests that intrinsic motivation for physical activity is a stable trait, irrespective of age [43].

A significant positive relationship is found between physical activity enjoyment and exercise addiction, indicating that higher enjoyment levels are associated with higher scores in exercise addiction dimensions. This reciprocal relationship suggests that enjoyment of physical activities can lead to increased exercise engagement and potentially foster addictive behaviours [8,22,44]. Studies that emphasize the role of intrinsic motivation in maintaining high levels of physical activity, which can lead to exercise dependence [3,16,23], corroborate this.

These findings have significant implications for developing interventions to promote healthy physical activity habits while mitigating the risk of exercise addiction. Recognizing the factors that contribute to both enjoyment and addiction can help practitioners design more effective programs that balance the benefits of regular physical activity with the risks of overdependence [32,40]. Tailoring programs to address specific needs, such as gender differences and the influence of sports licensure, can enhance their effectiveness [29,45,46].

5. Conclusions

This study provides valuable insights into the relationship between physical activity enjoyment and exercise addiction, highlighting significant gender differences, the impact of sports licensure, exercise frequency, and age-related variations. The findings indicate that males are more prone to exercise addiction compared to females, though both genders experience similar levels of enjoyment from physical activities. This suggests that while intrinsic enjoyment of physical activity is gender-neutral, cultural and societal factors may drive higher addiction tendencies among males.

The higher scores in both physical activity enjoyment and exercise addiction among licensed athletes underline the importance of structured and goal-oriented exercise routines. Licensed athletes, often having more structured routines and goals, demonstrate enhanced intrinsic motivation and adherence to exercise, leading to greater satisfaction and potentially higher addiction risks. This emphasizes the critical role of sports licensure in shaping

an individual's relationship with physical activity.

Frequent exercisers' higher scores in both enjoyment and addiction dimensions suggest a positive correlation between exercise frequency and both enjoyment and addiction. Regular physical activity engagement increases psychological and physiological benefits, reinforcing the behaviour and potentially leading to exercise dependence. This finding underscores the dual-edged nature of frequent exercise, where increased engagement fosters both positive outcomes and the risk of addiction.

The significant negative correlation between age and exercise addiction dimensions indicates that exercise addiction tends to decrease with age, aligning with research that younger individuals exhibit higher levels of exercise addiction due to greater physical and social demands. Conversely, the enjoyment of physical activities remains consistent across all age groups, suggesting that intrinsic enjoyment of physical activity does not diminish with age.

The positive relationship between physical activity enjoyment and exercise addiction highlights the role of intrinsic motivation in maintaining high levels of physical activity, which can lead to exercise dependence. This reciprocal relationship suggests that enjoyment of physical activities can lead to increased exercise engagement and potentially foster addictive behaviours. Recognizing the factors contributing to both enjoyment and addiction is crucial for developing interventions that balance the benefits of regular physical activity with the risks of overdependence.

These findings have significant implications for designing interventions to promote healthy physical activity habits while mitigating the risk of exercise addiction. Tailoring programs to address specific needs, such as gender differences and the influence of sports licensure, can enhance their effectiveness. Additionally, age-related differences in exercise addiction tendencies should be considered to provide age-appropriate strategies that maximize enjoyment and minimize the risk of addiction.

In conclusion, this study underscores the importance of understanding the complex relationship between physical activity enjoyment and exercise addiction. By recognizing the factors that contribute to both enjoyment and addiction, practitioners can design more effective programs that promote healthy exercise habits and mitigate the risks of overdependence. Future research should continue to explore these relationships, considering various demographic and psychological factors to develop comprehensive strategies for promoting lifelong physical activity.

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