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Investigation of Sports Sciences Students' Recreational Flow Experience and Psychological Resilience Levels: The Case of Çanakkale Onsekiz Mart University

Damla ÖZSOY[1], Okan ÜNVER[2], Mustafa Deniz DİNDAR[3], Özdemir ATAR[4], İbrahim AYDINLI[5]

[1]*Yalova University, Sport Science Faculty, Depertmant of Sport Management,*
[2]*Çanakkale Onsekiz Mart University, Sport Science Faculty, Depertmant of Recreation,*
[3]*Çanakkale Onsekiz Mart University, Sport Science Faculty, Depertmant of Recreation,*
[4]*Çanakkale Onsekiz Mart University, Sport Science Faculty, Depertmant of Coaching Education,*
[5]*Kocaeli University, Sport Scinece Faculty,*

Abstract

This study aimed to examine the recreational flow experiences and psychological resilience levels of sports sciences students. Data were collected using the "Recreational Flow Experience Scale" (Ayhan et al., 2020) and the "Brief Psychological Resilience Scale" adapted into Turkish by Doğan (2015). The "Recreational Flow Experience Scale" consists of 9 items, while the "Brief Psychological Resilience Scale" includes 6 items. The sample consisted of 202 undergraduate students from the Faculty of Sport Sciences at Çanakkale Onsekiz Mart University. Participants' scores were analyzed according to demographic characteristics, grade point averages, preferred recreational settings, and volunteering experiences in sports organizations. Mann Whitney-U test results showed significant differences based on gender and venue preference. Male students reported higher recreational flow experiences than female students ($p<0.05$), and outdoor recreation was associated with greater flow compared to indoor activities. No significant differences were observed in students' flow or psychological resilience levels based on volunteering experience or grade point averages. Spearman correlation analysis revealed a significant positive relationship between recreational flow and psychological resilience. These findings highlight the importance of promoting diverse recreational opportunities, especially outdoor activities, on university campuses, as they support students' flow experiences and contribute to enhancing psychological resilience.

Original Article

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Spor Bilimleri Öğrencilerinin Rekreasyonel Akış Deneyimi ve Psikolojik Sağlamlık Düzeylerinin İncelenmesi: Çanakkale Onsekiz Mart Üniversitesi Örneği

Öz

Bu çalışma, spor bilimleri alanında öğrenim gören üniversite öğrencilerinin rekreatif akış deneyimleri ile psikolojik dayanıklılık düzeylerini incelemeyi amaçlamıştır. Araştırmanın verileri, amaçlı örnekleme yöntemiyle toplanmış olup Ayhan ve ark. (2020) tarafından geliştirilen "Rekreatif Akış Deneyimi Ölçeği" ve Doğan (2015) tarafından Türkçeye uyarlanan "Kısa Psikolojik Dayanıklılık Ölçeği" kullanılmıştır. "Rekreatif Akış Deneyimi Ölçeği" 9 maddeden, "Kısa Psikolojik Dayanıklılık Ölçeği" ise 6 maddeden oluşmaktadır. Araştırma grubunu, Çanakkale Onsekiz Mart Üniversitesi Spor Bilimleri Fakültesinde öğrenim gören 202 lisans öğrencisi oluşturmuştur. Katılımcıların ölçeklerden aldıkları puanlar; demografik özellikler, not ortalamaları, tercih ettikleri rekreatif alan türü ve spor organizasyonlarında gönüllülük deneyimlerine göre incelenmiştir. Mann Whitney-U testi sonuçları, cinsiyet ve alan tercihine göre anlamlı farklılık ortaya koymuştur. Erkek öğrencilerin akış deneyimleri kadınlardan daha yüksek bulunmuştur ($p<0,05$), ayrıca açık alan rekreasyonları, kapalı alan etkinliklerine göre daha yüksek akış deneyimi sağlamıştır. Spor organizasyonlarında gönüllülük durumu ve not ortalamalarına göre öğrencilerin akış ve psikolojik dayanıklılık düzeyleri arasında ise anlamlı bir fark gözlenmemiştir. Spearman korelasyon analizi, rekreatif akış ile psikolojik dayanıklılık arasında pozitif ve anlamlı bir ilişki olduğunu göstermiştir. Bulgular, üniversite kampüslerinde açık alan rekreasyon uygulamalarının teşvik edilmesinin, öğrencilerin akış deneyimlerini desteklediğini ve psikolojik dayanıklılıklarını güçlendirdiğini ortaya koymaktadır.

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Sorumlu Yazar: Okan ÜNVER
E-mail:okan.unver@comu.edu.tr

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INTRODUCTION

With the post-industrial period 1970s and 1980s, as mechanization replaced human power in working life, working time decreased and the importance of the concept of free time increased. While the time remaining from people's working hours represents free time, activities participated in for purposes such as sports and entertainment on a voluntary basis in free time also express the concept of recreation (Satılmış, 2021).

The concept of flow, first introduced by American psychologist Csikszentmihalyi (1975), refers to an optimal psychological state characterized by complete absorption in an activity. In this state, individuals experience intense concentration, clear goals, immediate feedback, and a loss of self-consciousness, which together lead to profound feelings of intrinsic enjoyment and happiness. Flow is inherently subjective and transient, yet it significantly enhances intrinsic motivation and supports sustained engagement in activities (Csikszentmihalyi, 1990).

In the context of recreational activities, flow emerges when individuals achieve a balance between their skills and the challenges presented by the activity. This equilibrium facilitates a deep sense of immersion, allowing participants to focus fully while filtering out distractions and external concerns. As a result, the experience contributes to psychological well-being by fostering fulfillment and personal growth (Bryce & Haworth, 2002).

Empirical studies have shown that individuals who exhibit strong involvement in leisure and recreational pursuits—demonstrated through excitement, interest, and concentration—are more likely to experience flow. Such involvement increases the likelihood of repeated participation and the allocation of time and effort toward these activities (Ayhan et al., 2020). Within this framework, the concept of recreational involvement is rooted in earlier theoretical understandings that behavior is influenced by the alignment of social purposes with personal relevance or psychological attachment (Sherif & Cantril, 1947).

Ultimately, the flow experience in recreational contexts not only supports continued participation but also enhances self-esteem, motivation, and a sense of well-being, making it a central construct in understanding the psychological benefits of leisure engagement. The primary aim of this study is to examine the relationship between recreational flow experiences and psychological resilience levels among university students studying at the Faculty of Sports Sciences. The potential of recreational activities to trigger flow experiences and the enhancing effect of these experiences on psychological resilience are considered to offer significant contributions to the mental well-being of university students.

The study is framed within both flow theory and positive psychology, aiming to contribute to the understanding of structural and behavioral factors that support psychological resilience among young adults in higher education. In this context, the findings obtained from the study are expected to shed light on practices that can improve the effectiveness of student support services within higher education institutions.

In particular, outdoor recreational practices and volunteer-based sports organizations planned within university campuses are believed to enhance students' flow experiences and strengthen their psychological well-being. Therefore, this study aims to make a unique contribution to the literature by revealing the concrete effects of recreational programs on individuals' psychological resilience. Moreover, the findings are anticipated to serve as a guide for student support units, sports and recreation coordinators, and psychological counseling centers operating within universities.

METHOD

Study Group

The population of this study comprises 71,299 undergraduate students enrolled in Faculties of Sport Sciences throughout Turkey (Council of Higher Education, 2025). A convenience sampling method, which is a type of non-probability sampling, was employed to select the sample. Specifically, students from the Faculty of Sport Sciences at Çanakkale Onsekiz Mart University who volunteered to participate were included. The required sample size was calculated using Cochran's formula, assuming a 95% confidence level, a 7% margin of error, and $p = 0.5$ (maximum variability). Based on this calculation, the minimum sample size needed from the population was determined to be 196. Accordingly, the sample of 202 participants included in the study is statistically sufficient and representative.

Data Collection Tools

Data for the study were gathered using online questionnaires specifically designed for this purpose. The first section of the questionnaire collected demographic information, including participants' gender, GPA, experience in sports volunteering, and their preferred venue for recreational activities. The second section comprised two measurement instruments relevant to the research objectives: the Recreational Flow Experience Scale and the Brief Psychological Resilience Scale. The Recreational Flow Experience Scale, developed by Ayhan et al. (2020), contains 9 items under a single factor and employs a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree), demonstrating a Cronbach's alpha of 0.89. The Brief Psychological Resilience Scale, originally developed by Smith et al. (2008) and culturally adapted to Turkish by Doğan (2015), includes 6 items within a single factor and uses a 5-point Likert scale (1 = not at all appropriate to 5 = completely appropriate), with a Cronbach's alpha coefficient of 0.91. Cronbach's alpha values above 0.70 are generally considered acceptable indicators of internal consistency (Tavşancıl, 2010).

Analysis of Data

Validity and reliability analyses of the scales were conducted, and descriptive statistics were examined. Both descriptive and inferential statistical analyses were performed using the Jamovi software. Normality of the data distribution was assessed by examining skewness and kurtosis values, which were found to exceed the acceptable range of ±1, indicating a deviation from normal distribution (George and Mallery, 2010). Accordingly, non-parametric tests were employed: the Mann-Whitney U test for pairwise group comparisons, the Kruskal-Wallis test

for comparisons across multiple groups, and Spearman's rank-order correlation to assess relationships between variables. In all statistical analyses, the significance level was set at $p < 0.05$.

Ethics

This study was approved by the Scientific Research and Publication Ethics Committee of Çanakkale Onsekiz Mart University Rectorate Graduate Education Institute Ethics Committee. It was deemed ethically appropriate with the decision dated 29.02.2024 and numbered 03/68.

FINDINGS

Table 1. Demographic information of the participants

Variables	Group	N	%
GPA	1-2	17	8.4 %
	2-3	143	70.8 %
	3-4	42	20.8 %
Venue Preference	Outdoor	142	70.3 %
	Indoor	60	29.7 %
Sports Org. Voluntary Participation	Yes	117	57.9 %
	No	85	42.1%
Gender	Female	101	50 %
	Male	101	50 %

According to the demographic information in Table 1, it was determined that the students included in the study were equal in number according to the gender variable. According to the overall weighted GPA of the participants, it is seen that 8,4 % have a GPA between 1 and 2, 70.8% have a GPA between 2 and 3, and 20.8% have a GPA between 3 and 4. It was determined that 57.9% of the students participated in a sports organization voluntarily, and 70.3% preferred the outdoor venue as a recreation area.

Table 2. Descriptive statistics of variables

	N	X	SS	Skewness	Kurtosis	α
Flow	202	5,92	.67	-0.458	0.418	0.93
Resilience	202	3,04	.45	-0.176	4.96	0.81

Descriptive statistics and reliability coefficients for the scales used in the study are presented in Table 2. The mean score for the Recreational Flow Experience Scale was 5.92 (SD = 0.67), indicating a relatively high level of perceived flow among participants. The skewness (-0.458) and kurtosis (0.418) values suggest an approximately normal distribution for this scale. The Cronbach's alpha coefficient was 0.93, indicating excellent internal consistency.

The mean score for the Brief Psychological Resilience Scale was 3.04 (SD = 0.45), reflecting a moderate level of resilience among the participants. While the skewness value (-0.176) falls within acceptable limits, The kurtosis value (4.96) for the Brief Psychological Resilience Scale indicates a more peaked distribution compared to the normal distribution, suggesting

that the data are highly concentrated around the mean. The reliability coefficient for the resilience scale was calculated as 0.81, which is considered good.

Table 3. Recreational flow and psychological resilience scores by gender mann-whitney u test results

	Gender	N	X	ss	U	p	d
Flow	Female	101	5.78	.71	3754	0.001	0.264
	Male	101	6.06	.60			
Resilience	Female	101	3.0	.49	4579	0.203	0.102
	Male	101	3.07	.40			

According to the results of the Mann-Whitney U test, male participants had significantly higher recreational flow scores than female participants (U = 3754, p = .001, d = 0.264). The effect size was small. This difference between female and male participants can be explained by males experiencing recreational flow more intensely compared to females. On the other hand, no significant difference was found between genders in terms of psychological resilience (U = 4579, p = .203, d = 0.102).

Table 4. Mann-whitney u test results of recreational flow and psychological resilience scores according to venue preference

	Venue	N	X	ss	U	p	d
Flow	Outdoor	142	5.99	.68	3349	0.016	0.214
	Indoor	60	5.73	.61			
Resilience	Outdoor	142	3.06	.45	4083	0.637	0.041
	Indoor	60	2.98	.44			

In the analysis based on the venue where participants carried out their recreational activities, it was found that individuals engaging in activities in outdoor venues had significantly higher recreational flow levels than those in indoor venues (U = 3349, p = .016, d = 0.214). The effect size was small. This suggests that activities performed in outdoor venues may enhance individuals' experience of flow. On the other hand, no significant difference was found in terms of psychological resilience levels (U = 4083, p = .637, d = 0.041).

Table 5. Mann-whitney u test results of recreational flow and psychological resilience scores based on voluntary participation

	Volunteer	N	X	ss	U	p	d
Flow	Yes	117	5.94	.64	4838	0.743	0.027
	No	85	5.88	.71			
Resilience	Yes	117	3.00	.50	4254	0.076	0.144
	No	85	3.09	.37			

The results of the Mann-Whitney U test conducted according to whether the participants participated in the activities voluntarily or not showed that there was no statistically significant difference between the recreational flow and psychological resilience levels (Flow: U = 4838, p = .743, d = 0.027; Resilience: U = 4254, p = .076, d = 0.144).

Table 6. Kruskal-Wallis test results based on the overall weighted GPA of recreational flow and psychological resilience scores

	GPA	N	sd	$\chi 2$	p	d
Flow	1-2	17	2	0.530	0.767	0.002
	2-3	143				
	3-4	42				
Resilience	1-2	17	2	3.857	0.145	0.019
	2-3	143				
	3-4	42				

According to the Kruskal-Wallis test results, no significant difference was found between the recreational flow and psychological resilience levels of the participants according to their GPA levels (Flow: $\chi^2 = 0.530$, p = .767; Resilience: $\chi^2 = 3.857$, p = 0.145).

Table 7. Spearman correlation test results of recreational flow and psychological resilience score

	N	r	p
Flow Resilience	202	0.186	0.008

As a result of the Spearman correlation analysis, a positive, weak but statistically significant relationship was found between recreational flow and psychological resilience (r = .186, p = .008). This finding indicates that as recreational flow experience increases, the psychological resilience levels of individuals may also increase slightly.

DISCUSSION AND CONCLUSION

This study revealed important findings by examining the relationship between recreational flow state and psychological resilience through various demographic and preference variables. A positive significance was found in favor of men in recreational flow scores. Detecting a positive significance in favor of male in recreational flow scores is an important finding for understanding the differences between genders in this field and developing improvement suggestions. The diversity of existing recreational activities can be increased and made more inclusive. This may include creating programs that appeal to different interests and benefit both genders equally.

While similar findings are found in the relevant literature; While it is seen that male participants have higher recreational flow experiences than female (Bağcı et al. 2019; Doğan et al., 2018; Güzel et al., 2021), in the gender variable in different sample groups; Korer and Alpullu (2020) on athletes; Koehn (2007) on extreme athletes; Ak and Alpullu (2020) on university students; Özdemir and Durhan (2020) on professional athletes; Kaya et al. (2015) on indoor recreation facility users; and Yapıcı et al. (2022) found in their study on foreign students participating in recreational activities that the flow experience did not differ according to the gender variable.

Additionally, as a result of the research findings; A positive significance was found in recreational flow scores in favor of outdoor venue preference. In line with this result, activities such as organizing community-based events, collective sports events and environmental cleaning campaigns to increase the participation of local communities in

outdoor activities can improve individuals' flow experiences and increase their general well-being by increasing the recreational use of outdoor venues by encouraging community participation. Effective and diverse use of outdoor venues will support social health and happiness. No difference could be detected according to voluntary participation in sports organization and weighted grade point averages. Research result; There is a significant positive relationship in the Spearman correlation test results of recreational flow and psychological resilience scores.

The positive impact of recreational flow on resilience suggests that it may play an important role in increasing individuals' capacity to cope with stress and overcome challenges. These findings emphasize that recreational activities should be encouraged in order to increase the well-being of individuals. In particular, integrating outdoor activities and sports activities into individuals' daily lives can increase health and well-being at both individual and social levels. This study may also guide future research to more deeply understand the relationship between recreational flow and resilience. Studies taking into account different age groups, cultural backgrounds and socio-economic situations will allow this issue to be addressed from a broader perspective.

Many studies conducted in recent years indicate a positive correlation between the level of recreational participation and recreationists' perception of success and satisfaction (Brown et al., 1991; Hassmén, Koivula, & Fallby, 2000; Lu & Hu, 2005; Pace, 2004; Resnick, 2000). This relationship may be explained by the possibility that participation in recreational activities is associated with an enhanced experience of flow, which reflects the optimal state of engagement. Csikszentmihalyi (1990) proposed that a flow state occurs when individuals fully devote their attention to the activity at hand, setting aside irrelevant perceptions. Similarly, Demiral and Karakaş (2024) found that recreational flow experience is significantly correlated with various psychological dimensions and serves as a predictor of happiness.

In conclusion, this positive relationship suggests that individuals' flow experiences during recreational activities can support their psychological resilience. This finding, especially when considered for individuals such as university students whose stress coping skills are still developing, suggests that recreation should be considered not only a leisure activity but also a supportive element of mental health.

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