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## The relationship between perceived health outcomes of recreation, exercise dependence, and life satisfaction: A study with fitness center members

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## Abstract

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## Keywords

perceived health outcomes of recreation, exercise dependence, life satisfaction

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## INTRODUCTION

The World Leisure and Recreation Association defines leisure as a particular area of human life, including benefits, such as the chance of choice, creativity, pleasure, and personal satisfaction [1, 2]. Harris [3] stated that leisure is characterized by freedom of choice, self-realization, and moods, such as pleasure and satisfaction [4]. The concept of leisure is also stated as a time period which individuals freely express themselves [5-7]. Iwasaki [8] suggested that benefit of leisure would contribute to leading a worthy and meaningful life and to increasing life quality [9]. Similarly, Driver et al. [10] emphasized that leisure activities provide significant benefits for all people [11]. Driver and Brown were the pioneer researchers in leisure benefits, and in 1975 they addressed this issue by emphasizing the recreational motives, expectations, past experiences, and outputs in their model [12, 13]. According to Driver, there are three main benefits of leisure: improving a condition, preventing a worse situation, and realizing a psychological experience. They are called "Typologies of Leisure Benefits" and used to create the framework of the "Perceived Health Outcomes of Recreation Scale (PHORS)" [14]. This typology includes the following aspects: (1) an improved condition is characterized by improvements in human, environmental and economic factors, (2) the prevention of a worse condition stresses the benefits such as prevention of depression and anxiety, maintenance of cardiovascular fitness and weight control, and (3) the realization of a psychological experience is defined as leisure choices based on intrinsic values, flow experience, spirituality and a sense of freedom [15-17].

Exercise helps people overcome physical, emotional, mental, and social challenges imposed by chaotic and stressful lives [18]. It helps maintain and improve physical fitness, such as muscle strength and endurance [19]. Thus, exercise is described as a subset of planned, structured, repetitive, and purposeful physical activity [20,21]. Although regular exercise is acknowledged as typical health behavior, it can be addictive for some individuals [22]. The "exercise dependence" concept was initially used to describe the "excessive dependence" of middle-aged men who continued to run despite injuries and other health complications [23, 24]. Excessive exercise also has potentially harmful consequences. Injuries, dysfunctional eating habits, and poor social relationships are among the harmful consequences of excessive exercise [25-29]. Veale [28] proposed specific diagnostic criteria for assessing exercise dependence and distinguishing between primary and secondary exercise dependence [26]. Exercise dependence was operationalized as a multidimensional maladaptive pattern of exercise, leading to clinically significant impairment or distress, as manifested by three or more of the following: tolerance (the need for an increased amount of exercise or the reduction of the effect due to the same amount of exercise), withdrawal (the same amount of exercise to relieve or prevent anxiety and fatigue symptoms), intention effects (excessive or long-term exercises), lack of control (a persistent desire or an unsuccessful effort to stop or control the exercise), time (the excessive time of exercises), conflict (the interruption or reduction of exercises due to social, professional, or recreational activities), and continuance (doing exercise despite a persistent or recurrent physical or psychological problem that may be exacerbated by exercise) [30].

Diener et al. [31] defined life satisfaction as an overall positive assessment of life by specific criteria [32]. In other words, life satisfaction, which is a subjective way of assessing one's life quality, is a multifaceted structure that refers to the general evaluation of health, finance, work, self-esteem, and interpersonal relationships [33, 34]. According to Schimmack et al. [35], there are many potential factors affecting life satisfaction, such as related to personality, social expectations, socioeconomic factors, social interaction (e.g., neighbors, parents, children), physical and psychological health, accommodation, work, and authority [36]. Besides, subjects with higher life satisfaction generally have more positive social relationships, receive much social support, and have higher marital satisfaction than those with lower life satisfaction [37-40]. Thus, the current study aimed to investigate the

relationship between perceived health outcomes of recreation, exercise dependence, and life satisfaction among fitness center members.

## MATERIAL AND METHODS

*Research Model:* A relational survey model was used in the research. In the model, questions such as the degree of difference between variables are clarified with relational patterns [41].

*Research Group:* The sample consisted of 490 participants, 336 males ( $\text{Mean}_{\text{age}} = 30.47 \pm 8.12$ ) and 154 females ( $\text{Mean}_{\text{age}} = 34.08 \pm 9.27$ ). The participants were members of a fitness center in Istanbul and selected using a purposeful sampling method. 43.5% of the participants were "high school graduates," 55.9% were "single," 41.8% had "average" income, 34.7% went to the fitness center "3-4 days" in a week, and 33.9% had "6-10 hours" of leisure per week.

## DATA COLLECTION TOOLS

*Personal Information Form:* A form prepared by the researcher included items about gender, age, marital status, weekly fitness center attendance, and weekly leisure.

*Perceived Health Outcomes of Recreation Scale (PHORS):* Gomez et al. [14] developed the instrument to measure the perceived health outcomes of leisure activities. It was adapted in Turkish by Yerlisu Lapa et al. [13]. There are 16 items and three sub-dimensions in the scale: "Realization of Psychological Experience (PSYC)", "Prevention of a Worse Condition (PREV)", and "An Improved Conditions (IMPV)". The reliability of the original scale was 0.89, and the internal consistency coefficients for the sub-dimensions were .89 for the realization of psychological experience, 0.81 for preventing a worse condition, and 0.91 for an improved condition. In the current study, the Cronbach alpha coefficients were 0.95, 0.93, and 0.95, respectively. The 7-point Likert-type scale was scored between 1 (Never like me) and 7 (Very much like me).

*Exercise Dependence-21 (ED-21):* The tool was developed by Hausenblas and Downs [42] and adapted into Turkish by Gürbüz and Aşçı [43]. The original scale consists of seven sub-dimensions: "Tolerance", "Withdrawal", "Intention Effects", "Lack of Control", "Time", "Reduction in Other Activities", and "Continuance". In the Turkish version by Gürbüz and Aşçı [43], "Reduction in Other Activities", "Time" and "Intentional Effects" were gathered under a new sub-dimension called "Time and Exercise Preference". The internal consistency coefficient of the tool was 0.90. It was measured 0.87 for time and exercise preference, 0.72 for lack of control, 0.80 for withdrawal, 0.79 for tolerance, and 0.59 for continuance. For the current study, the internal consistency coefficients were 0.96, 0.95, 0.95, 0.95, and 0.96, respectively.

*Life Satisfaction Scale (LSS):* The scale was developed by Diener et al. [31] and adapted to Turkish by Yetim [44]. It is a one-dimensional scale consisting of five items. Items are ranged from 1 (Strongly disagree) to 7 (Strongly agree). The internal consistency coefficient of the original scale was 0.86. It was measured as 0.89 in the current study.

## DATA ANALYSIS

The data were analyzed using the SPSS 20.0 package program. The percentage and frequency methods were applied to show the distribution of personal information. The skewness and kurtosis values were examined to determine whether the data had a normal distribution. The results indicated a normal distribution. Thus, independent t-test, MANOVA, and Pearson correlation analysis were performed in the data analysis. Finally, Cronbach alpha coefficients were calculated to ensure reliability.

## RESULTS

As seen in Table 1, the mean score of LSS was measured at (4.52). The highest mean score among the PHORS sub-dimensions was calculated in "an improved condition" sub-dimension (5.38), and the lowest mean score was in the "realization of a psychological experience" sub-dimension (4.79). The highest mean score in the ED-21 was in "Withdrawal" (2.84), and the lowest one was in "Time and exercises preference" (2.70).

Table 2 shows the analysis results related to gender. The results indicated a significant difference in the LSS scores by gender ( $t=3.774$ ;  $p<0.05$ ). In this sense, the participant males had higher life satisfaction than females. MANOVA analysis results showed that the gender variable had no significant effect on the sub-dimensions of PHORS [ $\lambda=0.989$ ,  $F_{(3,486)}=1.830$ ;  $p>0.05$ ]. However, a statistically significant difference was found only in "the realization of a psychological experience" sub-dimension [ $F_{(1-488)}=4.703$ ;  $p<0.05$ ]. The scores of males were higher than female scores in this sub-dimension. MANOVA analysis results demonstrated that the main effect of gender on the sub-dimensions of ED-21 was significant [ $\lambda=0.956$ ,  $F_{(5,484)}=4.484$ ;  $p<0.05$ ]. The mean scores of females were higher than those of males in the sub-dimensions of "Time and Exercise Preference" [ $F_{(1-488)}=14.222$ ;  $p<0.05$ ], "Lack of Control" [ $F_{(1-488)}=15.099$ ;  $p<0.05$ ], "Withdrawal" [ $F_{(1-488)}=20.688$ ;  $p<0.05$ ], "Tolerance" [ $F_{(1-488)}=10.048$ ;  $p<0.05$ ], and "Continuance" [ $F_{(1-488)}=8.044$ ;  $p<0.05$ ].

Table 1. Distribution of scale scores

	Scale Sub-Dimensions	Items Number	n	Mean	Sd.	Sk.	Kr.
LSS	Life Satisfaction	5	490	4.52	1.57	-0.38	-0.76
	PSYC	7	490	4.79	1.74	-0.83	-0.41
PHORS	PREV	5	490	5.10	1.51	-0.88	0.10
	IMPV	4	490	5.38	1.53	-0.97	0.23
ED-21	Time and Exercise Preference	9	490	2.70	1.23	0.82	0.07
	Lack of Control	3	490	2.79	1.37	0.61	-0.50
	Withdrawal	3	490	2.84	1.39	0.44	-0.70
ED-21	Tolerance	3	490	2.81	1.46	0.56	-0.74
	Continuance	3	490	2.74	1.55	0.67	-0.66

PSYC = Realization of a Psychological Experience, PREV = Prevention of a Worse Condition, IMPV = an Improved Condition

Table 2. Analysis of scale scores by gender

Scales	Male (n=336)		Female (n=154)	
	Mean	SD	Mean	SD
LSS				
Life Satisfaction	4.70	1.60	4.13	1.44
PHORS				
PSYC	4.91	1.74	4.54	1.71
PREV	5.16	1.50	4.96	1.52
IMPV	5.42	1.53	5.30	1.54
ED-21				
Time and Exercise Preference	2.56	1.28	3.01	1.06
Lack of Control	2.63	1.42	3.14	1.21
Withdrawal	2.65	1.46	3.25	1.12
Tolerance	2.67	1.53	3.11	1.24
Continuance	2.61	1.60	3.03	1.39

PSYC = Realization of a Psychological Experience, PREV = Prevention of a Worse Condition, IMPV = an Improved Condition

Table 3 presents the analysis results related to scale scores by age and monthly income. According to the results, there was a negative and low-level relationship between age and LSS. There was a positive and low-level relationship between the age and the "Realization of psychological experience" sub-dimension, but a negative and low-level relationship was found in other sub-dimensions of PHORS. There was a positive and low-level relationship between age and all ED-21 sub-dimensions, except for the "Time and Exercise Preference" sub-dimension. Besides, a positive and low-level relationship was seen between the monthly income and the LSS; and a positive and low-level relationship between monthly income and all ED-21 sub-dimensions except the "Tolerance" and "Continuance." Lastly, there was a positive and moderate relationship between LSS and PHORS; and a negative and low-level relationship between LSS and all ED-21 sub-dimensions, except for the "Time and Exercise Preference" and "Lack of Control" sub-dimensions. A similar negative and low-level relationship was also measured between PHORS and all ED-21 sub-dimensions except the "Time and Exercise Preference".

Table 3. Analysis of scale scores by age and monthly income

	Age	Monthly income	F1	F2	F3	F4	F5	F6	F7	F8	F9
Age	1										
Monthly income	.243**	1									
F1	-.276**	.107*	1								
F2	.262**	-.015	.489**	1							
F3	-.129**	-.006	.378**	.809**	1						
F4	-.095*	-.011	.271**	.679**	.801**	1					
F5	.064	.170**	-.019	.059	.001	.034	1				
F6	.119**	.149**	-.063	-.120**	-.120**	-.073*	.790**	1			
F7	.167**	.140*	-.103*	-.189**	-.157**	-.098*	.776**	.840**	1		
F8	.160**	.072	-.151**	-.196**	-.149**	-.109*	.721**	.793**	.832**	1	
F9	.148**	.079	-.182**	-.250**	-.178**	-.151**	.643**	.722**	.771**	.855**	1

(P<0.01) \*\* (p<0.05) \*

F1 = Life Satisfaction, F2 = Realization of a Psychological Experience, F3 = Prevention of a worse condition, F4 = an Improved Condition, F5 = Time and Exercise Preference, F6 = Lack of Control, F7 = Withdrawal, F8 = Tolerance, F9 = Continuance

## DISCUSSION

The main effect of gender on the sub-dimensions of PHORS was not significant, but males' scores in the realization of a psychological experience sub-dimension were higher than females' scores. Although women and men have equal rights, women spend leisure quite differently from men due to cultural and secular understanding [45, 46]. In the light of the literature findings, this did not overlap with the findings of Gomez and Hill [47], Hill et al. [48], Elçi et al. [4], and Hill et al. [49]. The main effect of gender on ED-21 was significant, and there was a meaningful difference in all sub-dimensions. The female participants had higher levels of exercise dependence than males. It can be explained by women's general discontentment with their appearance, weight, and bodies [22,50]. In the literature, Grandi et al. [26] found that women who exercised for weight control scored higher than men. Similarly, Zmijewski and Howard [51] stressed that women exercise for weight control and general health. There were statistically significant differences in life satisfaction by gender. In this regard, men had higher levels of life satisfaction than women. In the light of the literature findings, this did not overlap with the findings, Drakou et al. [52], Er et al. [6], Çakır and Harmandar Demirel, [53] and Soyer [54]. There was a positive and low-level relationship in the realization of a psychological experience

sub-dimension and a negative and low-level relationship in the prevention of a worse condition and an improved condition sub-dimensions by age. In other words, as subjects get old, they realize much psychological experience in leisure activities, but the outputs related to an improved situation or prevention of a worse condition decrease. In the literature, Serdar [55] indicated a negative and moderate relationship in the "Improved Condition" sub-dimension by age. Similarly, in a study on university students' health outcomes and happiness in recreational activities, Serdar and Demirel [56] found that 24-year-olds scored higher in the sub-dimension of prevention of a worse condition. There was a positive and low-level relationship between age and lack of control, withdrawal, tolerance, and continuance sub-dimensions of the ED-21 scale, i.e. as subjects get old, exercise dependence intensifies. There was a negative and low-level relationship between age and life satisfaction. As individuals get old, their life satisfaction decreases. There was no found relationship between monthly income and sub-dimensions of PHORS. In a study by Serdar [55] on fitness center members' perceived health outcomes, it was found that individuals with good welfare achieved higher scores in all sub-dimensions of PHORS than others. It can be implied that the perceived health outcomes of those with high welfare are also high. There was a positive and low-level relationship between monthly income and all ED-21 sub-dimensions except the "Tolerance" and "Continuance. In this sense, as monthly income increases, so does the exercise dependence. It can be stated that economic well-being is an indicator of doing exercise. A positive and low-level relationship was seen between monthly income and life satisfaction. As the monthly income increases, life satisfaction also enhances. A desired amount of income affects participation in leisure activities and life satisfaction. There was a positive and moderate relationship between LSS and PHORS, a negative and low-level relationship between LSS and ED-21 except for "Time and Exercise Preference" and "Lack of Control" sub-dimensions. There was a low-level and negative correlation between PHORS and ED-21 sub-dimensions except for the "Time and Exercise Preference" sub-dimension. It can be suggested that perceived health outcomes of recreational activities in leisure increase life satisfaction and decrease exercise dependence.

## CONCLUSIONS

In conclusion, it was determined that men with high life satisfaction realized more psychological experiences than women in leisure activities, and women had more exercise dependence than men. It was observed that as people got old, exercise dependence increased, and life satisfaction decreased. Besides, as the monthly income increased, perceived health outcomes decreased, and life satisfaction and exercise dependence increased.

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