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# Exploring Leisure Involvement, Perceived Health, and Life Satisfaction: Evidence from Recreational Physical Activity Participants in Turkey

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## ABSTRACT

Leisure grows in importance for many developing countries, such as Turkey, since it affects individuals' health and satisfaction with life. This study explored the relationships among leisure involvement, perceived health outcomes of recreation (mediating variable), and life satisfaction. The study group consisted of 786 Turkish adults participating regularly in physical activities in Ankara. Structural Equational Modelling (SEM) was used to examine the relationships among variables and test hypothesis models. This analysis resulted in respectively leisure involvement had direct effect on both life satisfaction and perceived health outcomes of recreation. Perceived health outcomes of recreation had a direct effect on life satisfaction. In addition, leisure involvement had an indirect effect on life satisfaction, with a partial mediating effect of perceived health outcomes of recreation. These results suggested that there could also be an increase in Turkish participants' life satisfaction thanks to the health outcomes that they perceived as a result of leisure involvement.

## INTRODUCTION

Healthy individuals and increased life satisfaction are important indicators of both individual and societal well-being (Ruggeri et al., 2020). Given this, physical activities (PAs) in leisure have been recognized as essential tools that support not only physical health but also



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psychological and social well-being (Zarazaga et al., 2024). Several studies have found that participating in recreational PA contributes to an individual's overall quality of life, prompting researchers to look more closely at the dynamics underlying these activities (i.e., Barakou et al., 2025; Sánchez-González et al., 2025). In this context, the three main constructs addressed in this study, which are leisure involvement, perceived health outcomes of recreation, and life satisfaction, provide a comprehensive framework for understanding how individuals' interest in leisure activities, their perceptions of their health, and, consequently, their life satisfaction are interrelated.

Leisure involvement has been related to an individual's interest and commitment to leisure activities and their central role in an individual's life (Kyle et al., 2007). In the literature, high levels of leisure involvement have been demonstrated to create a stronger sense of belonging, social bonds, and personal meaning (Havitz & Mannell, 2005). The individual not only participates in the activity in this process but also internalizes the benefits of this participation (Zhang et al., 2022). At this point, perceived health outcomes of recreation refer to how the individual perceives the physiological, psychological, and social health gains from leisure activities (Gomez et al., 2016). In leisure literature, individuals' motivation to pursue such activities has been emphasized as closely related to their positive perceptions of health (Antunes et al., 2024; Schreyer & Driver, 1989; Özant et al., 2025). In sum, the higher the level of involvement, the more noticeable the health outcomes achieved, which directly contributes to individual well-being (An et al., 2024). The last factor, life satisfaction, refers to the individual's general evaluation of their life, that is, their satisfaction with life (Diener et al., 1985). Studies have suggested that life satisfaction is at the center of an individual's subjective well-being (Kuykendall et al., 2015; WHOQOL, 1995) and is directly related to the gains from leisure activities (Kim et al., 2024).

Strong theoretical approaches in leisure literature suggest a multifaceted interaction between involvement, perceived health, and life satisfaction (i.e., Chen et al., 2021; Kim et al., 2018; Lin et al., 2021). As individuals participate in recreational PAs during their leisure, they not only become physically active but also feel better psychologically, their stress levels decrease, their social relationships improve, and they develop a more positive perception of their lives in general (Potoczny et al., 2025; White et al., 2024). In this process, the extent to which the individual is involved in the activity (e.g., the level of leisure involvement) plays a decisive role because high interest and commitment to a PA increases the personal meaning of that activity and creates a more in-depth experience for the individual (Sezer & Aki, 2024).

Such experience may create a perception of "gain" in the individual (Chadi & Hetschko, 2024). This gain is not only well-being, but also multifaceted health outcomes such as self-actualization, coping with stress, feeling of belonging, mental clarity, and social support (Bonekamp et al., 2023; Đuranović, 2024; Lyu et al., 2024). As the individual recognizes these outcomes - that is, as they begin to subjectively perceive the benefits that the PAs bring to their lives - their motivation to participate increases, and this process continues cyclically (Deci & Ryan, 2013). Perceived health outcomes are key because it is not only the individual's participation in the activity, but also how they experience this participation and what meanings they attribute to it that directly affect their life satisfaction (An et al., 2024; Kim et al., 2024). Therefore, the mediating role of perceived health outcomes in this process should be considered to gain a deeper understanding of the relationship between leisure involvement and life satisfaction. Perceived health outcomes influence an individual's subjective assessment of quality of life (Fernández-Jiménez et al., 2024). Individuals who feel healthier, stronger, more peaceful, and socially active feel more satisfied with their lives, which means one of the main components of life satisfaction (Đuranović, 2024; Nicolás-Martínez et al., 2024; Zhou et al., 2024). Therefore, the relationship between leisure participation and life satisfaction becomes more explanatory through perceived health outcomes. This situation reveals a process that is shaped not only by individuals' involvement in PA, but also by the impressions that this participation leaves on them, that is, by their perception levels.

The combination of leisure involvement, perceived health outcomes, and life satisfaction is crucial to understanding not only the leisure behaviors of individuals but also the consequences of these behaviors (An et al., 2024; Matte et al., 2024; Rodríguez et al., 2024). The research model provides a roadmap that starts from the level of involvement of the individual, transforms this involvement into health perception, and ultimately evolves into life satisfaction. This holistic approach makes important contributions in both theoretical and practical fields. Such relationships can guide the development of new policies, especially for social policy makers, health professionals, and recreation practitioners who focus on individual well-being. The limited number of studies testing the interaction between these constructs in the Turkish context makes this study more unique (i.e., Bayrak, 2023; Çevik et al., 2021; Kayapınar, 2021; Öztürk & Alpullu, 2023). The cultural structure of Turkish society, differences in social relations, lifestyle trends and the meanings attributed to PA may add different dimensions to the relationships between these variables (e.g. Kundakcı et al., 2024). Therefore, the present study not only fills a gap in the literature but also contributes to

understanding how these three constructs interact in Turkey's specific social and cultural conditions. The study offers a novel conceptual approach that highlights how subjective perceptions of health gained from leisure experiences play a central role in shaping overall life satisfaction by integrating perceived health outcomes as a mediating construct.

*Conceptual Background*

*Leisure Involvement*

Researchers have mostly benefited from studies in the consumer behavior literature to define the concept of involvement (Jun et al., 2012; Kyle et al., 2003). For example, Havitz and Dimanche (1997) defined leisure involvement as an unobservable state of motivation, arousal, or interest towards a recreational activity or related product, adapted from Kapferer and Laurent (1985), who studied consumer behavior (Glancy & Little, 1995). Though there have been many of these types of definitions related to leisure involvement (i.e., Alexandris et al., 2012; Kyle et al., 2007; Laaksonen, 1994), it is much more notable that researchers have accepted that the basis of leisure involvement is personal relevance in a recreational activity (Slama & Tashchian, 1985; Zaichkowsky, 1985). The first study on involvement in leisure literature did not seem to focus on defining this concept, but on developing measures tools (i.e., Havitz & Dimanche, 1997; Kyle et al., 1999; Schuett, 1993). Just as with the definition process for involvement in leisure activities, the first scales developed (i.e., Havitz & Dimanche, 1997; Kim et al., 1997; McIntyre, 1989) were created, benefiting from studies named the Personal Involvement Inventory by Zaichkowsky (1985) and Consumer Involvement Profile by Kapferer and Laurent (1985) in the consumer behavior literature. However, different scale tools, each with complementary qualities and with specific dimensions for only recreational activities (i.e., social bonding, identity affirmation) were developed by leisure researchers and added to the recreation literature (i.e., Havitz et al., 1993; Gürbüz et al., 2018; Kyle et al., 2007).

*Perceived Health Outcomes of Recreation*

Benefits of leisure have been shown to be more closely related to studies with motivation (Iso-Ahola, 1989) and satisfaction (Mannell, 1989). However, researchers have used various terms such as motivation, satisfaction, psychological outcome, or experience to identify leisure benefits for a while (Manfredo et al., 1996). Especially, authors have obtained limited information about why people need to participate in leisure activities (expected benefits) and what they will achieve by participation (realized benefits) through this research.

This situation has revealed the need for comprehensive studies focusing directly on health benefits due to presenting limited and indirect information about the benefits of leisure activities (Melamed et al., 1995; Schreyer & Driver, 1989). In time, perceived health outcomes of recreation, which are accepted as benefits of leisure, have contributed to a clear understanding of the benefits of activities for individuals from many health aspects led by physiological, psychological, and social aspects (Allen, 1990; Driver, 1990; Hull, 1990; Ulrich et al., 1990).

*Life Satisfaction*

Life satisfaction has been defined as an individual's perception of their quality of life, which includes physical health, psychological state, and social relations, as well as culture and values (WHOQOL, 1995). Researchers have assumed that quality of life includes both objectively observable variables (e.g., income, socio-economic status, education, and health) and subjective variables that are not easily observed (e.g., perceived enjoyment) (Browne et al., 1997; Campbell et al., 1976). These variables are a criterion in determining life satisfaction (Kahneman et al., 2000; Utsey et al., 2000). Several studies implied that the subjective variable in quality of life comprises a person's perception of general life satisfaction, namely, how a person perceives fulfillment of his or her personal expectations, goals, and needs (Downing, 2006; Veenhoven, 2011). All these have led to life satisfaction and quality of life being used with close meaning (Browne et al., 1994; Lyons, 2005; Moons et al., 2006) and have been considered life satisfaction as the greatest determinant of quality of life (Herman, 2008). Nevertheless, Pavot et al. (1991) found that life satisfaction, which is considered a cognitive characteristic in personal evaluation, is more accurately qualified as a subset of quality of life.

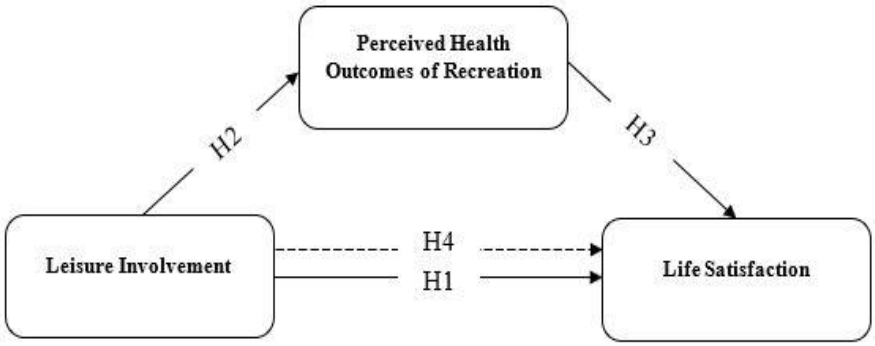
*The Present Study with Hypotheses*

Individuals' high level of involvement in leisure activities allows them to evaluate their lives in a more balanced and satisfying way (Kim et al., 2024). Such involvement may meet the individual's intrinsic motivation and psychological needs, leading to the development of positive emotions and increased satisfaction with life (Yang & Qian, 2024). Various studies in the literature have demonstrated that there is a significant and positive relationship between leisure involvement and life satisfaction (An et al., 2024; Chen et al., 2021; Doğan & Ünal, 2024; Sato et al., 2017; Sato et al., 2018). Accordingly, the first hypothesis of the study suggests that leisure involvement would be positively related to life satisfaction (H1). Additionally, this relationship is not only limited to direct effects on life satisfaction. However, it may also be

strengthened through the perceptual gains that individuals obtain from the activities they participate in (Geng et al., 2023). In particular, individuals with high involvement in leisure activities perceive the physical, mental, and social benefits of these activities more strongly (Nyberg et al., 2025). This reveals that the level of participation of the individual in the activity shapes the perceptual dimension of health outcomes. Recent studies have also found evidence of this effect and suggest that high leisure involvement has positive effects on perceived health outcomes (i.e., Bone et al., 2022; Li et al., 2021). Therefore, the second hypothesis of the study predicts that leisure involvement would be positively related to perceived health outcomes (H2).

Several studies have frequently emphasized in the literature that perceived health outcomes have a distinct determinant on individuals' life satisfaction (Hellström et al., 2021; Kim et al., 2021; Tomé et al., 2024). Individuals' perceptions of physical, psychological, and social gains from leisure activities positively affect their general evaluations of their lives (Yalçınkaya et al., 2022). Especially, positive psychology and subjective well-being theories have argued that positive perceptions of health are one of the main determinants of life satisfaction (Diener & Chan, 2011; Diener et al., 1999; Keyes, 2002; Seligman, 2011). Research has supported this theoretical view and has presented that perceived health outcomes are positively related to life satisfaction (i.e. Potoczny et al., 2025; White et al., 2024). In this context, the third hypothesis of the study predicts that perceived health outcomes would be positively related to life satisfaction (H3). Lastly, when all these relationships are considered together, the relationship between leisure involvement and life satisfaction may not only have a direct effect; this effect could also be explained indirectly through perceived health outcomes. High levels of involvement may cause individuals to think that they benefit more from the activities in terms of health, and this positive perception becomes an important factor that increases life satisfaction (An et al., 2025). Such indirect effects have frequently been tested and supported in positive psychology-based approaches and structural modeling research (i.e., Hsieh, 2025; Lee et al., 2023; Zhou et al., 2025). Indeed, these studies have proved that the effect of leisure involvement on life satisfaction may be significantly mediated through perceived health outcomes. Based on these theoretical and empirical foundations, the fourth hypothesis of the study proposes that perceived health outcomes would mediate the relationship between leisure participation and life satisfaction (H4). The research model tested in the study is presented below (Figure 1).

**Figure 1.**
Research model




## METHODS

*Research Design*

This study was conducted within the framework of the positivist scientific paradigm, which assumes that reality is objective and can be measured through empirical data. A quantitative research approach was adopted to test the proposed relationships among the variables. Specifically, the study employed a cross-sectional and correlational design, using self-report questionnaires to collect data from individuals participating in recreational PAs. The purpose of this design was to examine the predictive and mediating relationships between leisure involvement, perceived health outcomes of recreation, and life satisfaction.

*Participants and Procedures*

Participants were recruited from approximately 3,000 individuals who regularly purchased recreational PA services from eleven different health and fitness sports clubs located in various districts of Ankara, the capital city of Turkey. The number of approximately 3,000 individuals reflects the total number of active adult members registered across the eleven selected health and fitness clubs in Ankara at the time of data collection. These individuals formed the accessible population for the study, and the study group was drawn from this group based on convenience sampling. This figure was not arbitrarily determined but instead represented the actual size of the population available to the researchers during the research period. These clubs were selected based on their popularity, high member capacity, and the diversity of their clientele in terms of age and fitness background, ensuring access to individuals who actively engage in recreational PAs.

As a result, a total of 786 participants who met the inclusion criteria were included in the study. The sample size was considered sufficient based on quantitative research

recommendations in the literature. For instance, Green (1991) suggested that the number of scale items in a study should be considered and recommends using the formula n ≥ 50 + 8m (where m is the number of predictors) or n ≥ 104 + m to determine an adequate sample size in regression-based analyses. Following these guidelines, the final sample of 786 participants was well above the minimum required threshold, thus ensuring sufficient statistical power for the analyses.

The study employed a convenient sampling method, which was chosen for its practicality and efficiency in reaching individuals who met the inclusion criteria in real-world leisure settings. This approach enabled the researchers to directly access many eligible participants who were already involved in relevant PAs. Participants were included in the study if they were 30 years of age or older, had been participating in recreational PAs for at least one year, and reported engaging in such activities at least twice a week. Data was collected over a four-month period, between June and September 2019. One of the researchers coordinated with the club managers to determine optimal times and locations for data collection and personally administered the questionnaires on-site, immediately after participants had completed their PAs. Prior to participation, respondents were informed about the purpose of the study and the confidentiality of their responses. To prevent duplicate entries, participants were asked whether they had previously completed the survey. All participants were informed that their participation was voluntary, that they could withdraw at any time, and that their responses would remain anonymous. Informed consent was obtained prior to participation. While a fixed response time was not imposed, most individuals completed the questionnaire within 10–15 minutes in a controlled, familiar setting, which contributed to data reliability. Data was collected anonymously and securely stored in a password-protected digital format accessible only to the research team.

Ethical approval for the study was obtained from the Gazi University Measurement and Evaluation Ethics Sub-Committee, following the decision taken during their meeting held on May 28, 2019 (Decision No. 06). Descriptive information regarding participants' demographic and activity-related characteristics is presented in Table 1.

**Table 1**
Participants' characteristics.

| Characteristics | (*n=786*) |
|---|---|
| Gender (%) | |
| Female | 39.7 |
| Male | 60.3 |
| Age (M, *SD*.) | 41.46, 8.70 |
| Marital Status (%) | |
| Married | 69.1 |
| Single | 30.9 |
| Education Level (%) | |
| High School | 15.7 |
| University | 84.3 |
| The perceived importance of leisure (%) | |
| Not Important | 0.7 |
| Less Important | 4.8 |
| Important | 41.6 |
| Very Important | 52.9 |
| Who do you usually do PA with | |
| Friend Group | 59.9 |
| Family | 11.6 |
| Alone | 28.5 |
| Health status feeling | |
| Bad | 0.6 |
| Moderate | 4.1 |
| Good | 28.1 |
| Very Good | 29.1 |
| Perfect | 38.2 |
| PA experience$_{(month)}$ (*M., SD*) | 51.16, 53.99 |
| Duration of club membership$_{(month)}$ (*M., SD*) | 27.44, 28.10 |
| Weekly club visit duration$_{(daily)}$ (*M., SD*) | 2.90, 1.05 |
| Daily time spent in PA$_{(hourly)}$ (*M., SD*) | 1.64, 0.67 |

**Notes:** M= Mean score, SD= Standard deviation, PA= Physical activity

*Measures*

The survey instrument for this study was developed by selecting measures that have been used and validated in prior studies. Detailed explanations of each scale are given below.

*Leisure involvement scale*

Developed by Kyle et al. (2007) and adapted to Turkish by Gürbüz et al. (2018), Modified Involvement Scale (MIS) was assessed by the fifteen involvement items of attraction, centrality, social bonding, identity affirmation, and identity expression using a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

*Perceived health outcomes of recreation scale*

Perceived health outcomes in recreation were assessed using Perceived Health Outcomes of Recreation Scale (PHORS) developed by Gomez et al. (2016) and adapted to Turkish by Yerlisu Lapa et al. (2017). The items were measured on the scale where 1 (never like me) through 7 (very much like me). PHORS consists of 16 items with 3 sub-dimensions: improved state (4 items), prevention of a worse situation (5 items) and realization of a psychological experience (7 items).

*Life satisfaction scale*

Satisfaction with life was assessed by the five-item with Life Satisfaction Scale (LSS). LSS was developed by Diener et al. (1985) and adapted to Turkish by Yetim (1991). Each item used a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). LSS consists of a single factor.

*Data Analysis*

Path analysis was preferred in this study because the proposed research model aimed to examine both direct and indirect relationships among multiple latent variables, including a mediating construct. Unlike simple correlational or regression analyses, path analysis within the structural equation modeling (SEM) framework enables the simultaneous estimation of complex relationships and provides comprehensive model fit indices. This approach is particularly suitable for testing mediation models, as it allows for a more nuanced and holistic understanding of the causal mechanisms underlying the observed relationships. Therefore, path analysis was deemed appropriate based on the theoretical structure of the model and the objectives of the study.

In the study, we identified leisure involvement as the input variable, life satisfaction as the output variable, and perceived health outcomes of recreation as the mediating variable. We carried out the two-stage data analysis proposed for the structural equation model using Mplus (Anderson & Gerbing, 1988). We tested the measurement model, and then analyzed the structural model (namely, Mediation Analysis). To determine the significance of values of the variables, we used standardized factor scores and their t-value. x2/df, Root Mean Square Error Approximation (RMSEA), Comparative Fit Index (CFI), and Standardized Root Mean Square Residual (SRMR) values were reported because they are recommended for SEM studies (Kline, 2016). Bootstrap technique was preferred to verify whether the mediating variables were statistically significant with 5,000 resampling options and calculated at a 95% confidence

interval (MacKinnon et al., 2004; Preacher &Selig, 2012). In the study, we used kurtosis, skewness values, and the Mardia test to determine whether the data meet the assumptions of normal distribution. We performed all data analysis with Mplus Studio (8.3) and SPSS 23 software.

## RESULTS

*Preliminary Test and The Measurement Model's Evaluation*

Before testing the structural model, several preliminary analyses were conducted to ensure the suitability and robustness of the data. First, univariate normality was assessed through skewness and kurtosis values, all of which fell within the acceptable range of ±2.00 (George & Mallery, 2019; Tabachnick & Fidell, 2012). However, Mardia's multivariate kurtosis and skewness values were found to be statistically significant ($p < .05$), indicating a violation of the assumption of multivariate normality (Mardia, 1985; Raykov & Marcoulides, 2008). As a result, the Robust Maximum Likelihood (MLR) estimation method was employed to analyze the structural model, as recommended for non-normal data distributions.

Second, common method variance (CMV), a potential concern in cross-sectional studies using self-report data, was evaluated using Harman's single-factor test and a partial correlation procedure. The results showed that the first factor accounted for 44.98% of the total variance, which is below the 50% threshold, suggesting that CMV was not a critical issue in this study (Aguirre-Urreta & Hu, 2019). These results were consistent with previous recommendations for CMV control in behavioral research (Podsakoff et al., 2012).

Third, the reliability and validity of the measurement model were thoroughly examined to ensure the robustness of the constructions. As part of this process, multicollinearity was assessed through the Variance Inflation Factor (VIF) and tolerance values, which were found to be within acceptable limits (VIF = 1.638 to 2.828; tolerance = 0.354 to 0.610), indicating that multicollinearity was not a concern (Hair et al., 2019; Thompson et al., 2017). Building upon these preliminary checks, we then evaluated both convergent and discriminant validity in line with established recommendations. To assess convergent validity, we calculated Average Variance Extracted (AVE) and Composite Reliability (CR) values for each latent construct. According to Hair et al. (2014), AVE values greater than 0.50 and CR values above 0.70 indicate that the indicators sufficiently represent their respective latent variables. All constructions in the current study met these thresholds. For discriminant validity, the Fornell-Larcker criterion was applied, which compares the square root of AVE for

each construct to the correlations between constructs. Discriminant validity is supported when the square root of a construct's AVE exceeds its correlations with any other construct (Fornell & Larcker, 1981). The results confirmed that all constructions demonstrated satisfactory discriminant validity, supporting the psychometric soundness of the measurement model.

**Table 2.**
√AVE, AVE, CR, Cronbach's Alpha, And Correlations Matrix

| Scale | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | α | CR | AVE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Att | **(0.87)** | | | | | | | | | 0.90 | 0.91 | 0.77 |
| 2. Cnt | 0.59** | **(0.80)** | | | | | | | | 0.84 | 0.84 | 0.65 |
| 3. ScB | 0.57** | 0.57** | **(0.73)** | | | | | | | 0.77 | 0.78 | 0.54 |
| 4. IdA. | 0.50** | 0.53** | 0.59** | **(0.72)** | | | | | | 0.76 | 0.77 | 0.53 |
| 5. IdE | 0.40** | 0.47** | 0.50** | 0.56** | **(0.81)** | | | | | 0.85 | 0.86 | 0.67 |
| 6. PSYC | 0.59** | 0.52** | 0.55** | 0.56** | 0.46** | **(0.82)** | | | | 0.93 | 0.93 | 0.68 |
| 7. PREV | 0.49** | 0.37** | 0.49** | 0.45** | 0.33** | 0.65** | **(0.81)** | | | 0.90 | 0.90 | 0.66 |
| 8. IMV | 0.47** | 0.32** | 0.41** | 0.40** | 0.31** | 0.57** | 0.75** | **(0.87)** | | 0.92 | 0.93 | 0.77 |
| 9. LS. | 0.51** | 0.43** | 0.49** | 0.40** | 0.35** | 0.51** | 0.48** | 0.43** | **(0.80)** | 0.90 | 0.90 | 0.65 |
| M | 4.02 | 3.91 | 3.97 | 3.96 | 3.99 | 5.49 | 5.84 | 6.04 | 5.46 | | | |
| Sd | 0.65 | 0.73 | 0.66 | 0.64 | 0.68 | 0.92 | 0.86 | 0.87 | 0.93 | | | |

***Notes*:** CR= Composite reliability, AVE= Average variance extracted, Att= Attraction, Cnt= Centrality, ScB= Social bonding, IdA= Identity affirmation, IdE= Identity expression, PSYC= Realization of a psychological experience, PREV= Prevention of a worse condition, IMV= An improved condition, LS= Life satisfaction

*Structural Model's Testing*

To test the mediating effect of perceived health outcomes of recreation on the relationship between leisure involvement and life satisfaction, we conducted a mediation analysis using Hayes' PROCESS macro (Model 4) with 5,000 bootstrap samples (Hayes, 2017). The results indicated that leisure involvement had a significant positive effect on perceived health outcomes of recreation ($\beta = 0.75$, $p < 0.01$). Leisure involvement had a significant positive effect on life satisfaction ($\beta = 0.40$, $p < 0.01$). Lastly, perceived health outcomes of recreation had a significant positive effect on life satisfaction ($\beta = 0.30$, $p < 0.01$). The indirect effect of leisure involvement on life satisfaction through perceived health outcomes of recreation was found to be significant ($\beta = 0.23$, 95% CI [0.08, 0.37], R2= 0.17), as the confidence interval did not include zero. Leisure involvement and perceived health outcomes of recreation explained 17% of the variance in life satisfaction ($R^2 = 0.17$). This indicates that these two variables collectively account for 17% of the variability observed in life satisfaction. These

findings confirm the mediating role of perceived health outcomes of recreation and are consistent with the theoretical framework of the study. Model fit indices reported in Table 5 further support the adequacy of the overall model.

**Table 3.**
Results of The Measurement Model's Confirmatory Factor Analysis

| Factor/Item | | SC |
|---|---|---|
| **Factor 1:** Leisure Involvement | | |
| (Att) | 1. This PA is one of the most enjoyable things I do | 0.88 |
| | 2. This PA is very important to me | 0.93 |
| | 3. This PA is one of the most satisfying things I do | 0.82 |
| (Cnt) | 1. I find a lot of my life is organized around this PA | 0.83 |
| | 2. This PA occupies a central role in my life | 0.87 |
| | 3. To change my preference from this PA to another recreation activity would require major rethinking | 0.71 |
| (ScB) | 1. I enjoy discussing this PA with my friends | 0.71 |
| | 2. Most of my friends are in some way connected with this PA | 0.78 |
| | 3. Participating in this PA provides me with an opportunity to be with friends | 0.71 |
| (IdA) | 1. When I participate in this PA, I can really be myself | 0.72 |
| | 2. I identify with the people and image associated with this PA | 0.78 |
| | 3. When I'm this PA, I don't have to be concerned with the way I look | 0.68 |
| (IdE) | 1. You can tell a lot about a person by seeing them this PA | 0.74 |
| | 2. Participating in this PA says a lot about whom I am | 0.87 |
| | 3. When I participate in this PA, others see me the way I want them to see me | 0.83 |
| **Factor 2:** Perceived Health Outcomes of Recreation | | |
| (PSYC) | 1. I participate in the PA because this PA causes me to appreciate life more | 0.87 |
| | 2. I participate in the PA because this PA causes me to enjoy life more | 0.88 |
| | 3. I participate in the PA because this PA gives me a sense of self-reliance | 0.85 |
| | 4. I participate in the PA because this PA gives me a sense of higher self-esteem | 0.81 |
| | 5. I participate in the PA because this PA makes me more aware of who I am | 0.81 |
| | 6. I participate in the PA because this PA is connected to other positive aspects of my life | 0.80 |
| | 7. I participate in the PA because this PA causes me to be more satisfied with my life | 0.75 |
| (PREV) | 1. I participate in the PA because this PA reduces my chances of developing diabetes | 0.82 |
| | 2. I participate in the PA because this PA reduces my chances of weight gain | 0.81 |
| | 3. I participate in the PA because this PA reduces my chances of having a heart attack | 0.85 |
| | 4. I participate in the PA because this PA reduces my chances of premature death | 0.82 |
| | 5. I participate in the PA because this PA reduces my number of illnesses | 0.76 |
| (IMV) | 1. I participate in the PA because this PA improves my overall fitness | 0.84 |
| | 2. I participate in the PA because this PA improves my overall health | 0.88 |
| | 3. I participate in the PA because this PA improves muscle strength | 0.91 |
| | 4. I participate in the PA because this PA improves my physical flexibility | 0.86 |
| **Factor 3:** Life Satisfaction | | |
| | 1. In most ways my life is close to my ideal. | 0.83 |
| | 2. The conditions of my life are excellent. | 0.88 |
| | 3. I am satisfied with my life | 0.82 |
| | 4. So far, I have gotten the important things I want in life. | 0.79 |
| | 5. If I could live my life over, I would change almost nothing | 0.72 |

***Notes***: SC= Standardizes coefficients, α= Cronbach's alpha, Att= Attraction, Cnt= Centrality, ScB= Social bonding, IdA= Identity affirmation, IdE= Identity expression, PSYC= Realization of a psychological experience, PREV= Prevention of a worse condition, IMV= An improved condition, PA= Physical activity.

**Table 4.**
Path Coefficients between Latent Variables

| Path | 95%CI | Hypothesis |
|---|---|---|

| | β | β² | LL | UL | |
|---|---|---|---|---|---|
| $H_1$ Leisure involvement→ Life satisfaction | 0.40** | 0.16 | 0.39 | 1.20 | **Supported** |
| $H_2$ Leisure involvement → Perceived health outcomes of recreation | 0.75** | 0.56 | 1.01 | 1.65 | **Supported** |
| $H_3$ Perceived health outcomes of recreation → Life satisfaction | 0.30** | 0.09 | 0.13 | 0.56 | **Supported** |
| **Estimates of mediation effect** | | | | | |
| $H_4$ Leisure involvement → Perceived health outcomes of recreation → Life satisfaction | 0.23** | 0.05 | 0.08 | 0.37 | **Supported** |

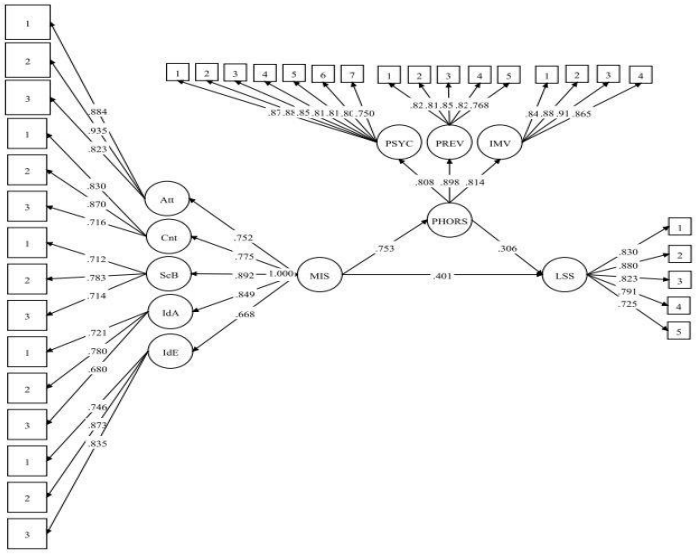
***Notes*:** **p<0.01; *β*= Standardized regression weight, LL= Lower limit, UL= Upper limit, CI= Confidence interval.

**Table 5.**
Summary of The Model Testing Procedure

| Model[a] | $x^2$ | df. | RMSEA (%90 CI) | CFI | TLI | SRMR |
|---|---|---|---|---|---|---|
| 1. Measurement model | 1913.818** | 583 | 0.051 (0.048, 0.054) | 0.919 | 0.913 | 0.060 |
| 2. Structural model | 2702.102** | 583 | 0.064 (0.062, 0.067) | 0.913 | 0.906 | 0.060 |

***Notes***: [a]= $x^2$/df<5.00; RMSEA≤0.08; SRMR≤0.08; CFI>0.90, TLI>0.90 for acceptable model fit (Sources; Hu & Bentler, 1999; Kline, 2016). **= p<0.01.

**Figure 2.**
Structural Model




***Notes:*** MIS= Modified involvement scale, PHORS= Perceived health outcomes of recreation; LSS= Life satisfaction scale, Att= Attraction, Cnt= Centrality, ScB= Social bonding, IdA= Identity affirmation, IdE= Identity expression, PSYC= Realization of a psychological experience, PREV= Prevention of a worse condition, IMV= An improved condition

## DISCUSSION

The effect of leisure participation on people's life satisfaction attracts the attention of researchers. In this study, we evaluated the relationship between leisure involvement, perceived health outcomes of recreation, and life satisfaction of adults participating regularly in PAs.

This study provides a contextual contribution to understanding the relationship between leisure involvement and life satisfaction among adults regularly engaging in PA in Turkey (H1). The findings indicate that involvement in leisure has a direct and positive effect on participants' life satisfaction, aligning with recent research in the field. For instance, Doğan and Ünal (2024) found that higher levels of leisure involvement among fitness center members were significantly associated with increased flow experiences and life satisfaction. Their study demonstrated that leisure involvement explained 14% of the variance in life satisfaction, highlighting its predictive power. Similarly, a study by Potoczny et al. (2025) emphasized that active participation in leisure activities enhances mental health and overall well-being, further supporting the positive link between leisure involvement and life satisfaction. These findings underscore the importance of viewing leisure activities not merely as passive pastimes but as meaningful engagements that contribute to individuals' subjective well-being. Supporting this, a recent study on older Korean immigrants showed that participation in outdoor leisure-time PAs significantly increased their life satisfaction, happiness, and perceived health (Lee et al., 2023). In addition, findings from a large-scale national survey in Korea indicated that individuals who engage in sports-based leisure activities report higher levels of both happiness and leisure life satisfaction (Bae, 2022). These converging findings collectively highlight the universal value of leisure participation as an influential contributor to individuals' psychological health and overall life satisfaction across different populations and cultural contexts.

A second way this study contributes to the literature is that leisure involvement directly affects perceived health outcomes of recreation (H2). This finding is consistent with the framework proposed by Fancourt et al. (2021), who highlighted that engagement in leisure activities positively influences perceived health outcomes through psychological, biological, and behavioral mechanisms. Furthermore, the study by Bone et al. (2022) provides longitudinal evidence that greater leisure involvement is associated with lower levels of depression among older adults, supporting the positive impact of leisure activities on perceived mental health outcomes. Similarly, Han et al. (2021) found that increased leisure walking intensity was associated with improvements in both mental health and perceived health outcomes among older adults, further corroborating the positive link between leisure involvement and perceived health. Overall, these findings indicate that H2 is well-supported by previous studies in the literature, demonstrating a consistent pattern linking leisure involvement with enhanced perceived health outcomes.

The third contribution of the study was that it reveals that perceived health outcomes of recreation have a direct positive effect on life satisfaction (H3). The result demonstrated that the health perception of a person who regularly participates in PAs was important in determining the level of life satisfaction. Zhao and Cole (2023) showed that improvements in perceived health outcomes are positively associated with higher levels of life satisfaction among individuals with spinal cord injuries. Kim et al. (2025) demonstrated that perceived health outcomes significantly and positively influence life satisfaction among older Korean immigrants, further supporting the direct link between health perceptions and overall life satisfaction. Similarly, Mutz et al. (2021) found that engagement in PAs enhanced individuals' perceived physical health, which subsequently contributed to higher levels of life satisfaction. Bakkeli (2021) demonstrated that individuals with better perceived health status reported significantly higher life satisfaction levels in Norway. Taken together, these findings provide robust empirical support for H3, highlighting the critical role of perceived health outcomes in shaping individuals' life satisfaction across diverse populations. This association also helps explain why the desire to participate in PAs tends to evolve into a personal goal over time, driven by the perceived benefits for maintaining or improving one's health (Ito et al., 2018).

The final contribution of the study was that leisure involvement creates an indirect effect on life satisfaction by creating a partial mediation effect of perceived health outcomes of recreation (H4). This finding aligns with previous research emphasizing the mediating role of health perceptions in the relationship between leisure participation and life satisfaction. For instance, Yoon et al. (2020) demonstrated that significant involvement in leisure improved perceived health, which subsequently enhanced life satisfaction among older Korean adults. Their panel analysis highlighted the pivotal role of health-related outcomes in explaining the positive impact of leisure engagement on subjective well-being. Chul-Ho et al. (2020) found that involvement in leisure activities, especially those involving PA, was associated with enhanced health outcomes and greater happiness among older Korean adults. As emphasized by Mansfield et al. (2020), involvement in leisure activities significantly contributes to both physical and psychological health, which are fundamental components of overall well-being. Their conceptual analysis highlighted that leisure participation enhances individuals' perceptions of health and quality of life, ultimately supporting greater life satisfaction. Jeong and Park (2020) demonstrated that participation in leisure activities among community-dwelling elderly Koreans was associated with lower levels of depression and higher quality of life. Thus, the current findings, supported by previous research, reinforce the notion that

perceived health outcomes serve as a vital mechanism linking leisure involvement to enhanced life satisfaction.

*Theoretical Implications*

This study contributes to the theoretical development of leisure and health research by presenting an integrated model that links leisure involvement, perceived health outcomes, and life satisfaction. By conceptualizing perceived health outcomes as a mediating variable, the study moves beyond traditional models that primarily view leisure as a behavioral or hedonic activity. Instead, it highlights the psychological and evaluative processes through which leisure experiences influence broader life satisfaction. This approach supports a more comprehensive understanding of leisure as both a behavioral and cognitive-affective domain.

The results also strengthen existing leisure involvement frameworks by demonstrating that sustained and meaningful engagement in leisure—beyond mere frequency of participation—plays an important role in shaping individuals' health perceptions and overall well-being. This aligns with prior research emphasizing psychological commitment and personal relevance as key components of involvement (e.g., Havitz & Dimanche, 1997), while offering the novel insight that these components may influence life satisfaction indirectly through perceived health benefits.

The inclusion of a Turkish adult sample adds contextual depth to the theoretical model, as cultural characteristics such as social norms, lifestyle patterns, and interpersonal dynamics in Turkey may affect how individuals experience and interpret the relationship between leisure, health, and well-being. By applying the model in a non-Western context, the study contributes to expanding the cultural scope of leisure research. It supports the call for more culturally sensitive approaches in the field.

Furthermore, the study emphasizes that perceived health outcomes derived from leisure experiences can be meaningful predictors of life satisfaction. This finding is consistent with recent perspectives in well-being research that highlight the importance of subjective health assessments alongside traditional, objective health indicators. Overall, the proposed model helps clarify the underlying mechanisms through which leisure involvement contributes to life satisfaction and offers a foundation for future theoretical exploration of how subjective leisure experiences impact psychological well-being.

*Practical Implications*

Practitioners, including fitness center managers and recreation planners, should consider integrating structured leisure programs that promote sustained involvement, especially for adults over 30. Policies that encourage regular participation in recreational activities may also help improve community well-being. Considering these considerations, the study also offers several practical implications for recreation professionals, fitness center managers, and policymakers aiming to promote health and well-being through leisure programming.

First, leisure involvement was found to have both direct and indirect effects on life satisfaction, suggesting that structured and meaningful leisure programs can be strategically used to enhance well-being. Practitioners should design programs that not only increase participation frequency but also foster psychological engagement and personal interest among participants. Moreover, the mediating role of perceived health outcomes indicates that participants value not only enjoyment, but also the physical, psychological, and social health benefits of leisure activities. Therefore, it is recommended that practitioners explicitly incorporate health-focused messages and components into program planning and communication strategies to strengthen participant motivation and engagement.

Additionally, since the study focused on adults aged 30 and older, it emphasizes the importance of targeting this age group with tailored recreation programs that address age-specific motivations and health goals. For example, group-based recreational sessions that promote both PA and social connectedness could be particularly practical in sustaining involvement. Finally, institutions and local governments may consider forming partnerships with fitness centers to develop community-based leisure initiatives, especially in urban environments. Such collaborations could support broader participation and foster long-term adherence to recreational PA by ensuring access, continuity, and relevance to local populations.

*Limitations*

This research has several limitations. Firstly, leisure benefits were evaluated within the scope of physiological, psychological, and social benefits that are thought to affect people only in terms of health. This shows that the concept of benefits has been limited and examined in the study. Secondly, we have noticed some criteria as individuals are thirty years of age or older, they have been involved in the activity for one year or more, and they have participated in the activity at least two days a week to determine the sample group. This indicates the limitations of the study in terms of sample group. For this reason, we can evidence that these

study findings cannot be directly generalized to individuals participating in PAs in other countries. Thirdly, the other primary limitation in this study is the inability to precisely define the total population of individuals who regularly participate in recreational PAs in Turkey. There is currently no official database or registry that provides detailed figures on such individuals at the city or district level. As a result, this study does not rely on a strict population-sample framework. Instead, it focuses on the characteristics and behaviors of a defined study group drawn from an accessible and active population in selected fitness centers. This limitation should be considered when interpreting the generalizability of the findings.

Lastly, several features of the study help mitigate this limitation. However, the study utilized a non-random convenience sampling method, which limits the generalizability of the findings to the broader population. The relatively large sample size (N = 786), the inclusion of participants from 11 different fitness centers across diverse districts, and the use of clearly defined inclusion criteria (e.g., age, frequency, and duration of participation) all contribute to the representativeness of the study group. Moreover, collecting data in real-life recreational settings enhances ecological validity. Therefore, while random sampling was not employed, the diversity and size of the sample allow for cautious generalization of the results to similar populations.

*Future Directions*

Future research may benefit from addressing several key areas that were beyond the scope of the current study. First, although the present study utilized a cross-sectional design, future studies should consider using longitudinal or experimental designs to examine the causal relationships between leisure involvement, perceived health outcomes, and life satisfaction over time. Such approaches would help establish temporal precedence and clarify the directionality of these associations. Second, the current study was limited to adult individuals over the age of 30 who regularly participated in recreational PA in urban fitness settings. Therefore, future research could expand the sample to include younger populations, older adults, or individuals from rural areas to assess whether these relationships vary across different demographic segments. Comparative studies between age groups or regions could offer more nuanced insights into the role of leisure involvement in promoting well-being.

Third, the study was conducted in Turkey, and cultural factors may influence both leisure behaviors and perceptions of health and life satisfaction. Future research could

incorporate cross-cultural comparative studies to investigate whether similar patterns hold across different cultural and societal contexts. Such studies would contribute to the global understanding of leisure's impact on subjective well-being and help identify culturally specific versus universal patterns. Fourth, future studies may consider testing moderating variables such as gender, income level, or types of leisure activities. For instance, it would be valuable to examine whether the strength of the relationship between leisure involvement and life satisfaction differs based on the type of activity (e.g., individual vs. group-based, active vs. passive recreation).

Finally, while this study focused on quantitative methods and structural relationships among variables, future researchers may adopt qualitative or mixed methods approaches to explore perceived health outcomes of recreation and life satisfaction associated with leisure involvement. Such perspectives can offer a richer and more holistic understanding of how individuals interpret their leisure involvement and its outcomes on health and life satisfaction.

## CONCLUSION

This study provides significant insights into the relationships between leisure involvement, perceived health outcomes of recreation, and life satisfaction. The findings confirmed that leisure involvement has a direct positive effect on life satisfaction (supporting H1) and significantly predicts perceived health outcomes (supporting H2). In turn, perceived health outcomes positively affect life satisfaction (supporting H3) and partially mediate the relationship between leisure involvement and life satisfaction (supporting H4). These results support the proposed mediation model and align with theoretical frameworks emphasizing the role of leisure involvement in enhancing subjective well-being and fulfilling individuals' physical, psychological, and social health needs.

Furthermore, the results demonstrate that increased interest in leisure activities not only provides enjoyment but also serves as a motivating force for consistent participation, contributing to physical, psychological, and social health. This finding underscores the importance of perceived health as a key pathway through which leisure enhances quality of life. By contextualizing these findings within a Turkish adult population, the study contributes to the broader literature on leisure, health, and well-being, particularly in non-Western contexts. In conclusion, the study underscores the importance of promoting structured leisure activities as a strategic tool to enhance individual and societal well-being. It encourages future

research to explore these relationships across more diverse populations and with longitudinal or experimental designs.

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**Authors' Contribution**

The author has been involved in revising the manuscript and interpreting the results. The final version of the manuscript was read and approved by the author.

**Declaration of Conflict Interest**

The author has not reported any potential conflicts of interest.

**Ethics Statement**

Ethical approval in the study was received from the Gazi University Measurement and Evaluation Ethics Sub-Committee, as per the decision taken during their meeting on May 28, 2019 (Decision No. 06).

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