

## ORIGINAL RESEARCH

# The impact of health anxiety on life satisfaction among male university students in sports sciences

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**Abstract**

**Background:** In recent decades, there has been a notable decline in healthy lifestyle activity levels and a rise in unhealthy habits, particularly among university students. These trends are concerning, as behaviors developed during university years can negatively affect long-term life satisfaction. The aim of this study is to examine the effect of health anxiety on life satisfaction levels of male university students enrolled in sports sciences. **Methods:** The study population consisted of male university students studying sports sciences, with a sample of 421 students selected by a simple random sampling method. Data were collected using a researcher-designed personal information form, and the health anxiety and life satisfaction scales in the literature. Statistical analysis were conducted using SPSS 22.0 (IBM SPSS Statistics, Chicago, IL, USA). Pearson correlation analysis was applied to determine the relationships between variables and simple regression analysis was employed to assess the effect of health anxiety on participants' life satisfaction. **Results:** The findings revealed a weak level of negative correlation between health anxiety and life satisfaction among male university students in sports sciences. Furthermore, health anxiety was found to significantly impact life satisfaction. **Conclusions:** This study highlights the need for targeted interventions to promote physical activity among university youth. Addressing the physical activity in university years may contribute to healthier lifestyles, and reduced health anxiety and improved life satisfaction in the long term.

**Keywords**

Health anxiety; Life satisfaction; University students; Sport sciences

## 1. Introduction

Individuals may encounter various challenging periods in their lives that negatively impact their well-being, one of which is the university years. University years can cause individuals to experience numerous difficulties such as academic pressures, personal adaptation to a new environment and the challenge of forming new social connections.

These difficulties in university life can contribute to psychological distress, leading to depression, stress, anxiety and even burnout [1–3]. Different studies have shown that university students often experience a decline in their physical activity levels and an increase in sedentary behavior. Various factors contribute to deteriorating mental well-being, including a sedentary lifestyle, academic and social dissatisfaction, health-related concerns, financial difficulties, pre-existing mental disorders and struggles in emotional expression [4–6]. The combination of these factors can heighten concerns about personal health, making health-related anxiety a significant issue among university students. These anxieties are commonly experienced by individuals to a certain degree but can sometimes turn into a permanent and disturbing situation [7]. Health

anxiety is a condition which is characterized by excessive worry, fear or stress related to one's health. Health anxiety is the stage when an individual devotes "so much time worrying they are ill or about getting ill, that his/her starts to take over their life" [8]. Noyes *et al.* [9] defined health anxiety as an excessive reaction to perceived bodily symptoms, interpreting them as signs of serious illness despite the absence of any actual medical condition. This heightened anxiety can arise when individuals misinterpret normal bodily sensations or minor physical changes as indicators of illness, including common symptoms such as fever, cough and muscle aches, often associated with an infectious disease [10, 11].

As health anxiety progresses, it is characterized by distressing emotions, heightened perceptions of danger and increased physiological arousal [12]. Baumgartner and Hartmann [13] suggest that health anxiety is closely linked to the frequent use of online health information. The widespread accessibility and frequent consumption of online health-related content have significant implications for health anxiety that cannot be overlooked [14]. Individuals who search for health information on the internet can develop incorrect opinions, overestimate the likelihood of illness and consequently experience heightened

distress [15].

Contemporary approaches to health emphasize not only the prevention and management of disease but also the promotion of overall well-being through social support, vitality, a sense of meaning and purpose, acts of kindness, positive social relationships, proper nutrition, spirituality and religious beliefs [16, 17]. This holistic perspective can foster a foundation for a healthier life at both individual and social level by increasing overall life satisfaction.

Life satisfaction is another important dimension to be assessed in university students, as it is linked to important outcomes, such as academic satisfaction and performance, happiness and mental health [18, 19]. Life satisfaction involves a subjective evaluation of an individual's personal life based on how she/he is satisfied with their overall experiences [4]. Life satisfaction is largely determined by an individual's lifestyle and adopting a positive health-promoting lifestyle plays a significant role in maintaining well-being preventing lifestyle-related diseases [20]. Lower life satisfaction has been associated with increased cardiovascular disease mortality rates, healthcare service utilization and higher healthcare-related costs [21]. In contrast, higher life satisfaction is correlated with better self-regulation of health-related behaviors, the selection of habits that align with one's health status, and the effective management of daily activities [22, 23].

A review of the existing literature reveals numerous studies examining the healthy life behaviours [24–26], health anxiety [27–29] and life satisfaction [30–32] among various university student groups. However, no study has specifically investigated the relationship between health anxiety and life satisfaction or the effect of health anxiety on life satisfaction among any university students, including those studying in sports sciences. Taken together, to encourage a healthy lifestyle throughout the life of university students, it is very important to identify problems that will improve their physical and mental health.

Based on the theoretical explanations in the literature and previous research findings, it can be proposed as a theoretical model that health anxiety influences the life satisfaction of university students in sports sciences. Thus, the purpose of this study is to examine the relationship between health anxiety and life satisfaction, as well as the effect of health anxiety on life satisfaction among university students. For this purpose, the following hypotheses were tested.

H1. Health anxiety is significantly related to life satisfaction.

H2. Health anxiety significantly affects life satisfaction.

## 2. Materials and methods

### 2.1 Research model

This study was conducted using a quantitative research method within the framework of the relational survey model to determine the relationship between health anxiety and life satisfaction among male university students studying sports sciences. The survey model is a research method used to describe an existing or ongoing phenomenon. This method aims to determine

the presence and extent of relationships between two or more variables [33].

### 2.2 Participants

The population of the study consisted of male university students who are studying in sports sciences faculties at state universities across Türkiye. The sample was drawn from male university students studying sports sciences during the fall semester of academic period 2024–2025.

The inclusion criteria were as follows: (i) male university students; (ii) be over 18 years old; (iii) studying in the departments of sports science faculties within state universities; and (iv) voluntary informed consent via the internet. Female students studying at sport sciences were excluded. The study was limited to the participants meeting these criteria, and responses were collected exclusively from male university students in sports sciences faculties. To ensure a representative sample, the minimum required sample size was calculated as 384 students, based on a 95% confidence level and a 5% margin of error. However, the study aimed to reach as many participants as possible, ultimately collecting data from 449 male students.

Upon reviewing the data, 16 responses were excluded due to incomplete or incorrect entries. In addition, as a result of the extreme values analysis, the data of 12 participants were also removed from the data set. Therefore, the final research sample group consisted of 421 male university students, selected using a simple random sampling method. Simple random method ensures that each unit in the population has an equal probability of selection, providing an unbiased representation of the study population [33]. Data were collected via online survey forms. The frequencies and percentages of male university students studying sports sciences are presented in Table 1.

**TABLE 1. Demographic characteristics of participants.**

Variables	n	%
Age (yr)		
18–21	179	42.5
22–25	142	33.7
26+	100	23.8
Sports year		
1–5	107	25.4
6–10	130	30.9
11+	184	43.7
Sports type		
Individual	181	43.0
Team	240	57.0
Department of education		
Physical education and sports	107	25.4
Coaching education	115	27.3
Sports management	120	28.5
Recreation expertise	79	18.8
Total	421	100.0

When Table 1 was examined, it was determined that 42.5% of the participants were 18–21, 33.7% of them were 22–25 and 23.8% of them were 26 years and more according to the age variable; 25.4% of them have 1–5 years, 30.9% of them have 6–10 years and 43.7% of them have 11 years and more according to the sports year variable; 43.0% of them do individual sports, 57.0% of them do team sports; 25.4% of them are at physical education and sports teaching, 27.3% coaching education, 28.5% sports management and 18.8% recreation expertise according to the variable of the department of education.

## 2.3 Data collection tools

In the study, the personal information form created by the researchers and the health anxiety and life satisfaction scales in the literature were used as data collection tools.

### 2.3.1 Personal information form

The personal information form prepared by the researchers will consist of four questions to determine the “age, years of sport, type of sport and the departments they study” of male university students studying in sports sciences.

### 2.3.2 The health anxiety scale

The Health Anxiety scale was developed by Salkovskis *et al.* [34] to measure a broad range of health anxiety symptoms. The scale is composed of 18 self-report questions. The first 14 items associated with excessive sensitivity to somatic symptoms and distress dimension contains four sequential statements questioning the mental state. The remaining 4 items measure individuals’ perceptions of the severity of developing a serious disease. These 4 items are in the negative consequences section. Each item on the scale is scored on a 0–3 basis, and scores of each item are added together for a total score ranging from 0 to 54. The higher score indicates a higher health anxiety level. The health anxiety scale was adapted to Turkish by Karaer *et al.* [35], reliability and validity analyses of the Turkish version of the scale were done in 2012 and Aydemir *et al.* [36] developed the scale in 2013. The Cronbach alpha internal consistency coefficients of the adaptation and improvement of the health anxiety scale to Turkish were pointed out as 0.91 [35] and 0.918 [36].

### 2.3.3 The life satisfaction scale

The life satisfaction scale was developed by Diener *et al.* [37] to measure how an individual is satisfied with his/her life as a whole. The scale is composed of 5 self-report questions. Each item of the scale is scored on a 1–7 basis, and each item’s scores are added together to form a total score ranging from 5 to 35. The higher score indicates the higher life satisfaction level. The life satisfaction scale was adapted to Turkish by Yetim [38]. The Cronbach alpha internal consistency coefficients of the adaptation of the scale to Turkish were pointed out as 0.86 [39]. The Cronbach’s alpha internal consistency coefficient ( $\alpha$ ) of the health anxiety and life satisfaction scales were measured. The Cronbach’s alpha internal consistency coefficient ( $\alpha$ ) of the scales are presented in Table 2.

When Table 2 is examined, Cronbach’s Alpha values ob-

**TABLE 2. Reliability analysis results of the scales.**

Scales	n	Number of Items	Cronbach’s Alpha
Health anxiety	421	18	0.908
Life satisfaction	421	5	0.907

tained from the scales show that the overall scales are sufficiently reliable. The data provided by the participants to the relevant scale shows an acceptable level of consistency within itself.

## 2.4 Data analysis

This study aims to reveal the current situation in an unbiased manner. For this purpose, the researchers performed the data analysis process upon completion of data collection by using statistical methods at three steps.

At the first step of statistical analysis, the health anxiety and the life satisfaction scales filled out by the participants were reviewed. Incomplete and incorrectly filled data were excluded from the evaluation. Then, the items in the health anxiety and the life satisfaction scales were coded and their total scores were calculated. The extreme value analysis performed by examining *Z* scores, and data points identified as extreme values were removed from the dataset. At the second step of statistical analysis, the validity and reliability of the data collection tools were tested in order to determine whether the data were normally distributed, skewness and kurtosis values were checked whether the values were between  $\pm 2$  [40]. The results of normality tests confirmed that the data were normally distributed, allowing for the use of parametric tests in further analyses.

At the third and the final step of statistical analysis, both descriptive and inferential statistics were applied to analyze the data. Within the framework of descriptive analysis, frequency, percentage, arithmetic mean and standard deviation values of the data were calculated. For inferential analyses, Pearson correlation analysis was applied to determine the relationships between variables while simple regression analysis was applied to determine the effect of health anxiety on life satisfaction of participants.

Statistical analysis of the data to be used in the study was carried out using the SPSS 22.0 (IBM SPSS Statistics, Chicago, IL, USA) package program. The significance level for all analyses was set as  $p < 0.05$ .

## 3. Results

The skewness, kurtosis, mean and standard deviation values of the health anxiety and life satisfaction scales are presented in Table 3.

According to Table 3, the mean score of the health anxiety scale is 10.299 and the standard deviation is 7.613, while the mean score of the life satisfaction scale is 22.836 ( $SD = 7.447$ ). The skewness and kurtosis values in Table 3 are examined, both scales fall within the acceptable range of  $\pm 2$ , indicating that the data are normally distributed [41].

The results of the Pearson correlation analysis performed to determine the possible relationship between the health anxiety

**TABLE 3. Descriptive statistics and normality test scores of the participants from the scales.**

Scales	n	Min	Max	$\bar{x} \pm SD$	Skewness	Kurtosis
Health anxiety	421	0.00	42.00	10.299 $\pm$ 7.613	1.171	1.836
Life satisfaction	421	5.00	35.00	22.836 $\pm$ 7.447	0.053	-0.691

Min: Minimum; Max: Maximum; SD: Standard Deviation.

and life satisfaction scales are presented in Table 4.

**TABLE 4. The relationship between health anxiety and life satisfaction levels of the participants.**

Scales	Life Satisfaction
Health Anxiety	
<i>r</i>	-0.282**
<i>p</i>	<0.001
<i>n</i>	421

\*\* $p < 0.001$ .

Table 4 shows a weak level of negative relationship between the mean scores of the health anxiety and life satisfaction scales. As the correlation coefficient is -0.282, this is a weak but significant relationship. This indicates that as the mean scores of health anxiety, life satisfaction and health anxiety decreases, the mean scores of life satisfaction increase.

The results of the simple regression analysis performed to find out the effect of participants' health anxiety on life satisfaction are presented in Table 5.

When Table 5 is examined, the regression model indicates a significant relationship between the participants' health anxiety and life satisfaction ( $f_{(2, 418)} = 36.220, p < 0.001$ ). According to the *t*-test results regarding the significance of the regression coefficient, it was determined that health anxiety significantly predicts life satisfaction ( $t = -6.018, p < 0.001$ ). This model explains 8% of the variance in the participants' life satisfaction ( $R^2 = 0.080, p < 0.001$ ). Histogram of the results of the simple regression analysis performed is presented in Fig. 1.

## 4. Discussion

In recent years, extraordinary circumstances such as the COVID-19 pandemic and earthquake disasters in Turkey have significantly impacted public well-being. These events may have influenced participants' health anxiety and life satisfaction levels, potentially differing from typical conditions. This study is limited to male students studying at sports sciences programs at state universities in Turkey. The effect of cultural factors on health anxiety and life

satisfaction was not evaluated in this research. The primary objective of this study was to examine the relationship between health anxiety and life satisfaction among this specific group of students. In this context, the first hypothesis of the study is that health anxiety levels of male university students studying at sports sciences are significantly related to their life satisfaction. The findings reveal a weak but significant negative correlation between health anxiety and life satisfaction. This indicates that as health anxiety increases, life satisfaction decreases and conversely, as health anxiety decreases, life satisfaction improves.

University students often face intensive academic demands, career-related pressures, adaptation challenges, declining social support, financial difficulties and increasingly sedentary lifestyles. These factors create an environment conducive to anxiety, stress, depression and even burnout syndrome [5, 6, 42]. Additionally, such psychological stressors can manifest in physical symptoms such as fever, cough and muscle pain, which may contribute to heightened health anxiety [28, 29]. Health anxiety is characterized by the excessive misinterpretation of normal bodily sensations as indicators of serious illness, even in the absence of a medical condition [43]. This persistent concern can lead to increased stress, fear and emotional distress, potentially impairing students' mental and physical well-being, either temporarily or permanently. Existing literature suggests that negative emotions such as fear, anxiety and stress are associated with lower life satisfaction, whereas positive life experiences, strong social support, meaningful friendships and psychological resilience contribute to higher life satisfaction [44]. A study conducted by Karaçadır and Çelik [45] on Turkish university students reported that 53.8% of students had low health anxiety levels, while 47.2% of them had high health anxiety levels. In line with this information, it is reasonable to infer that a considerable number of university students in Turkey have high health anxiety and low life satisfaction levels. This phenomenon is likely influenced by challenging academic and living conditions, as well as external stressors such as the COVID-19 pandemic and recent earthquake disasters, which have further impacted students' well-being during their education.

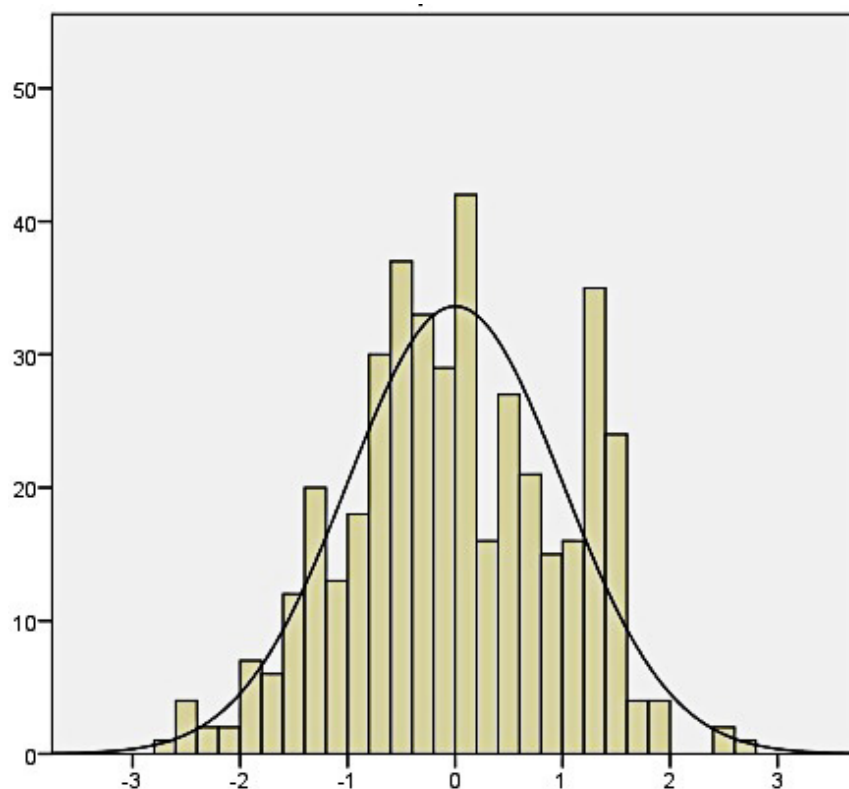
The second hypothesis of the study proposed that health anxiety level of male university students studying sports sciences affects their life satisfaction. The findings support this

**TABLE 5. The effect of participants' health anxiety on life satisfaction.**

Variables										
Independent	Depend	$\beta_1$	SE	$\beta_2$	<i>t</i>	<i>p</i> <sub>1</sub>	<i>R</i>	<i>R</i> <sup>2</sup>	<i>F</i>	<i>p</i> <sub>2</sub>
Health anxiety	Life satisfaction	-0.234	0.039	-0.282	-6.018	<0.001	0.282	0.080	36.220	<0.001

$p < 0.001$ . SE: Standart Error.





**FIGURE 1. Dependent variable life satisfaction histogram.**

hypothesis, indicating that health anxiety has a direct impact on the life satisfaction of these students. Existing literature suggests that the increase in the individual's health anxiety level is related to the deterioration of the life satisfaction and the decrease in the physical capacity of the person [26, 27, 46]. A study by Katon *et al.* [47] reported that people's constant feeling of health anxiety can affect their daily lives and reduce their life satisfaction and quality. Regular physical activity plays a crucial role in preventing diseases, enhancing psychological well-being and reducing negative emotions such as stress, anxiety and depression. Additionally, it has been found to improve life satisfaction and mental health [48–50]. At this point, the importance of physical activity in individuals' lives becomes evident. The ability to control health-related behaviors, structure daily routines and adopt lifestyle choices aligned with one's well-being is strongly linked to higher life satisfaction [30–32]. Moreover, findings from this study suggest that physical activity serves as a preventive measure against heightened health anxiety among university students. It plays a crucial role in promoting an active and balanced lifestyle while enhancing overall life satisfaction. Specifically, it is believed that male university students studying sports sciences can increase their life satisfaction and minimize their health concerns through structured physical activities within their academic curriculum and/or continued participation in active sports.

## 5. Conclusions

This study found a weak negative correlation between health anxiety and life satisfaction of male university students study-

ing in sports sciences. Additionally, the findings indicate that health anxiety significantly impacts life satisfaction within this population. These results highlight the need for targeted interventions aimed at promoting physical activity among university students. Physical activities in university years may contribute to healthier and quality lifestyles and less health anxiety in future life of individuals. The following recommendations were made based on the results of this study:

1. Educational programs at universities should aim to cultivate students' healthy living skills alongside their professional development.
2. Universities should consider individual and faculty differences when designing physical environments and support systems to enhance students' physical and psychological well-being, ultimately improving their life satisfaction.
3. University administration must establish active communication channels with students to support their emotional well-being and enhance motivation.
4. Excessive academic pressure and stressful behaviors that negatively impact students' mental health and life satisfaction should be mitigated to reduce health-related concerns. To promote the healthy lifestyle behaviors, universities should incorporate recreational physical activities into curricula across all departments, ensuring that students from all academic backgrounds benefit from structured health-promoting initiatives.

## AVAILABILITY OF DATA AND MATERIALS

The data presented in this study are available upon request from the corresponding author.

## AUTHOR CONTRIBUTIONS

OP—designed the research study. ÖA—performed the research. MDD and BK—provided help and advice on literature review. İD—analyzed the data. OP, İD, ÖA, MDD and BK—wrote the manuscript. All authors contributed to editorial changes in the manuscript. All authors read and approved the final manuscript.

## ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The study was conducted in accordance with the Declaration of Helsinki and approved by the Süleyman Demirel University Health Sciences Ethics Committee (decision dated 03 July 2024 and numbered 77/6). Consent forms were obtained from the participants.

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## CONFLICT OF INTEREST

The authors declare no conflict of interest.

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