

Life satisfaction and healthy nutrition attitude in physically active and inactive university students

Ahmet Tarık Ergüven¹, Mehmet Sait Teke², Ümit Doğan Üstün³, Nurullah Emir Ekinci¹

¹Yalova University Faculty of Sports Sciences, Yalova, Turkey; ²Ministry of Youth and Sports, Kütahya, Turkey; ³Hatay Mustafa Kemal University School of Physical Education and Sports, Hatay, Turkey

Abstract. *Study Objectives:* The present study aimed to analyze the differences in the perception of life satisfaction (LS) and healthy nutrition attitudes (HNA) of university students according to general practice physical activity results. Analyzing the effect of HNA on LS was another aim. *Materials and Method:* A cross-sectional questionnaire survey was administered to Hatay Mustafa Kemal University students, and randomly chosen 498 university students participated in the study. The data were analyzed with SPSS 23.0. In the analysis of the data, One Way ANOVA and Simple Linear Regression were used. *Results:* According to the analyzed results, 32.9% of the participants were found to be physically active and reported significantly higher life satisfaction than physically inactive and moderately inactive students. Physically inactive students reported lower healthy nutrition attitudes than moderately active and active students. Healthy nutrition attitudes significantly predict life satisfaction for all participants regardless of their physical activity index. *Conclusion:* To achieve substantive life satisfaction, healthy nutritional attitudes should be developed.

Key words: Life Satisfaction, Healthy Life Behaviors, Nutrition, General Practice Physical Activity, University Students

Introduction

Life satisfaction has been established as a separate concept of subjective well-being that represents a cognitive and global assessment of the whole quality of one's life (1, 2, 3). Currently, the word "quality of life" has two meanings: 1) the presence of conditions thought required for a good life, and 2) the practice of good living in general (4). When we remark that a country's citizens have a poor quality of life, we imply that essential necessities such as food, shelter, and health care are inadequate. In other words, the country's residents do not find it 'livable.' However, when we remark that someone does not have a happy life, we may indicate that he or she lacks necessities and/or does not prosper. These disorders may coexist; however, this is not always the case. A person might be

wealthy, powerful, and well-liked while still being unhappy. Someone impoverished, weak, and isolated, on the other hand, maybe prosper both psychologically and physically. These variations are known as 'presumed' and 'apparent' quality of life, respectively (4). So, in general, life satisfaction has been described as a psychological state that is generally related to an individual's psychological well-being (5, 6). As cited in Manning-Walsh (2005), life satisfaction was defined as closely connected to the quality of life and has been commonly used by scholars as a phrase to partially define the quality of life and as a notion related to but distinct from the quality of life (7).

A body of timely research demonstrated that life satisfaction is associated with healthy life behaviors. University students with higher mindfulness and healthy life behaviors such as healthy nutrition attitudes

had higher life satisfaction than those with lower levels of healthy life skills (8). Life satisfaction was predicted by healthy nutrition attitudes and access to health-related resources in university students and varsity-licensed athletes (9). Life skills, adaptation to college, and life satisfaction were partially correlated to each other for Korean college student-athletes (10). Significant standardized partial regression coefficients were obtained with life satisfaction and mental health and life skills among Japanese athletes (11). Life satisfaction of Iranian university-level athletes was significantly higher and at a very desirable level than normal people (12).

Despite a growing interest in examining university students' life satisfaction and its relationship with healthy lifestyle behaviors, only a few studies have considered participants' physical activity index. Being physically active or inactive may affect satisfaction with life as previous studies highlighted the importance of physical activity and regular exercise on life satisfaction (13, 14). So, the first aim of this study was to analyze the differences between life satisfaction and healthy nutrition attitude of university students according to their physical activity index which was obtained with "General Practice Physical Activity Questionnaire (GPPAQ). We hypothesized that life satisfaction and healthy nutrition attitude would have positively differed in favor of physically active university students. Our second aim was to confirm the effect of healthy nutrition attitudes on the life satisfaction of four physical activity index groups. We hypothesized that healthy nutrition attitudes positively affects life satisfaction for all groups regardless of physical activity index.

Material and methods

Study design, participants, and procedure

Before all applications, University Ethics approval was obtained. The study was designed as a quantitative study. A cross-sectional questionnaire survey was administered to Hatay Mustafa Kemal University students. The participants were chosen according to the simple random sampling method. The data in the study was obtained from February to June 2021. The 42% (N = 209) of the participants were male and 58%

(N = 289) female (total N = 498). 11% (N = 59) were varsity licensed athletes, 88.2% (N = 439) were not. The mean age of the participants was calculated as 21.97 ± 2.83 , the mean weight as 65.34 ± 13.83 (kg), and the mean height as 169.53 ± 8.87 (cm).

Life satisfaction scale

The original scale was developed by Diener et al. in (1985). Satisfaction with life scale is a self-report, unidimensional scale consisting of five items (e.g., In most ways my life is close to my ideal) anchored with a 5-point Likert type scale (1 = completely disagree, 5 = completely agree). Higher points indicate higher life satisfaction. The scale was adapted to Turkish by Dağlı and Baysal in 2016 using both explanatory and confirmatory factor analysis methods. Dağlı and Baysal (2016) found the internal consistency coefficient for the scale as .80. In this study, the internal consistency coefficient of the scale was determined as .876 (15).

Healthy nutrition assessment

To analyze the healthy nutrition attitudes of the participants' the healthy nutrition dimension of the Healthy Life Skills for University Students Scale was used. The scale was originally developed by Genç and Karaman (2019) to measure university students' healthy life skills according to Health Belief Model. The healthy nutrition attitude dimension of the scale consisted of 5 items (e.g., I eat a balanced diet for my health) anchored with a 4-point Likert type scale (1 = strongly disagree, 4 = strongly agree). Within the scope of this study, the internal consistency coefficient of the scale was calculated as .866 (16).

General practice physical activity questionnaire

The general practice physical activity questionnaire (GPPAQ) is a validated screening tool, used in primary care to assess the physical activity levels of adults (16 to 74 years). It provides a simple, 4-level physical activity index (PAI): Active, Moderately Active, Moderately Inactive, and Inactive. GPPAQ was commissioned by the DH and developed by the London School of Hygiene & Tropical Medicine as a

validated short measure of physical activity. The questionnaire was adapted in Turkish by Kaya Noğan and Özen in 2019 (17).

Statistical analysis

The data were analyzed with SPSS 23.0 for Windows. In the evaluation of the data, Cronbach's alpha for the scales was calculated and skewness and kurtosis values were examined. One-way ANOVA and Simple Linear Regression were used as the hypothesis tests at a 95% confidence level ($\alpha = 0.05$). Tukey's HSD test was used as a post hoc test.

Results

General Practice Physical Activity Questionnaire was used to assess the physical activity index of the

Table 1. Distribution of the physical activity index of the participants

Physical activity index	N	%
Inactive	119	23.9
Moderately inactive	83	16.7
Moderately active	132	26.5
Active	164	32.9
Total	498	100.0

participants. According to the analyzed results, 23.9% of the participants were found to be inactive, 16.7% were moderately inactive, 26.5% were moderately active, and 32.9% were active (Table 1).

One-way ANOVA results regarding the comparisons of life satisfaction and healthy nutrition attitude according to the physical activity index of the participants are given in Table 2. Regarding group comparisons, we found that physically active students reported significantly higher life satisfaction than physically inactive and moderately inactive students. Besides, physically inactive students reported lower healthy nutrition attitudes than moderately active and active students.

Table 3 presents the simple linear regression results. According to analyzed results healthy nutrition attitude significantly predicts life satisfaction for physically inactive students ($F_{1-118} = 22.114$; $p < 0.05$), moderately inactive students ($F_{1-82} = 9.587$; $p < 0.05$), moderately active students ($F_{1-131} = 67.646$; $p < 0.05$), and physically active students ($F_{1-163} = 27.375$; $p < 0.05$).

Discussion

The present study firstly aimed to analyze the differences between life satisfaction and healthy nutrition attitude of university students according to their physical activity index. According to the analyzed

Table 2. Comparisons of life satisfaction and healthy nutrition attitude according to physical activity index

Dependent variable	Physical activity index	N	Mean	Std. Dev	F	P	Tukey
Life satisfaction	Inactive	119	16.01	5.49	4.36	.005*	Active > Inactive & Mod. Inactive
	Mod. inactive	83	15.77	4.55			
	Mod. active	132	17.33	4.62			
	Active	164	17.65	4.85			
	Total	498	16.86	4.95			
Healthy nutrition attitude	Inactive	119	18.66	4.72	3.35	.019*	Inactive < Mod. active & Active
	Mod. inactive	83	19.28	3.98			
	Mod. active	132	20.12	4.08			
	Active	164	20.10	4.45			
	Total	498	19.63	4.38			

Mod = Moderately * $p < 0.05$

Table 3. Linear Regression Coefficients of Healthy Nutrition Attitude to Predict Life Satisfaction

Life Satisfaction												
Inactive Students				Moderately inactive students			Moderately active students			Active students		
	β	t	p	β	t	p	β	t	p	β	t	p
HNA	.464	4.703	.000*	.372	3.096	.003*	.663	8.225	.000*	.414	5.232	.000*
R ²	.15			.10			.34			.14		
F	22.114			9.587			67.646			27.375		
p	.000*			.003*			.000*			.000*		

HNA = Healthy nutrition attitude p<0.05

results physically active university students significantly had higher life satisfaction (\bar{X} =17.65) than the physically inactive (\bar{X} =16.01) and moderately inactive participants (\bar{X} =15.77). The differences between the other groups were found to be statistically insignificant. When we examine the relevant literature recent studies showed that leisure-time vigorous-intensity physical activity was significantly associated with life satisfaction for university students (18). Another study conducted with 12,492 university students from 24 different countries demonstrated that higher sedentary behavior was associated with poorer life satisfaction, on the other hand, moderate and/or high physical activity increased the odds for higher life satisfaction (19). Life satisfaction was found to be correlated with physical activity attitude and physical activity explained approximately 6% of life satisfaction for Turkish university students (20). A study conducted on university students using the General Physical Activity Questionnaire to represent the physical activity index showed that students with active lifestyles had a higher level of overall life satisfaction when compared to students with a non-active lifestyle (21).

Analyzed results also showed that healthy nutrition attitudes of the physically inactive (\bar{X} =18.66) students were lower than the physically active (\bar{X} =20.10) and moderately active students (\bar{X} =20.12). The differences between the other groups were found to be statistically insignificant. A previous study showed no significant difference in the variable healthy nutrition between varsity athletes and university students (8). Another study demonstrated engagement in physical exercise contributed to positive body image and

positive health perceptions more than engagement in healthy nutrition for Israeli undergraduate students (22). According to another study result, most university students were not physically active. Only 7% of students reported having a very active lifestyle, and 4% had quite good nutritional knowledge (23). On the other hand, a previous study showed that determinants of food quality in Islands University students were, physical activity behavior along with gender, age, and meals consumed per day (24). Consistently another study showed that 68.4% of men and 48.4% of women of 2051 Spanish university students, reported practicing physical activity. Besides, those who practiced physical activity consumed more fruits as a sign of healthy nutrition (25).

When we examine the effects of healthy nutrition on life satisfaction, analyzed results showed that healthy nutrition attitudes positively affected life satisfaction for all participants. Healthy nutrition attitudes predicted 15% of life satisfaction for physically inactive students ($F = 22.114$; $p < 0.05$), and one-unit increase in healthy nutrition attitude caused an increase of 0.464 in life satisfaction ($t = 4.703$; $p < 0.05$). For the moderately inactive students, healthy nutrition attitudes predicted 10% life satisfaction ($F = 9.587$; $p < 0.05$), and one-unit increase in healthy nutrition attitude caused an increase of 0.372 in life satisfaction ($t = 3.096$; $p < 0.05$). Healthy nutrition attitudes predicted life satisfaction the most for the moderately active students (34%) with one-unit increase in healthy nutrition causing an increase of .663 in life satisfaction ($t = 8.225$; $p < 0.05$). The situation was similar for physically active students. Healthy nutrition attitude

predicted 14% of life satisfaction ($F = 27.375$; $p < 0.05$), and one-unit increase in healthy nutrition caused an increase of .414 in life satisfaction ($t = 5.232$; $p < 0.05$). Consistent with our findings a previous study showed that fruit intake, vigorous exercise, and physical activity positively influence life satisfaction for university students (26). Another study result also showed that life satisfaction was positively associated with physical exercise, eating fruit, and limiting fat intake as signs of healthy nutrition attitudes (27). Healthy nutrition attitudes was found to be a predictor of life satisfaction in university students ($\beta = .39$) and varsity athletes ($\beta = .31$) (9).

Conclusion

The present study showed that 32.9% of the participants were physically active and reported significantly higher life satisfaction than physically inactive and moderately inactive students. Physically inactive students reported lower healthy nutrition attitudes than moderately active and active students. Healthy nutrition attitudes significantly predicted life satisfaction for all participants regardless of their physical activity index (the most for the moderately active students, and the less for moderately inactive students). So, to achieve substantive life satisfaction, healthy nutritional attitudes should be developed.

Conflicts of interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article.

References

- Diener E. Subjective well-being: the science of happiness and a proposal for a national index. *American Psychologist* 2000; 55(1): 34-3.
- Pavot W, Diener E. The satisfaction with life scale and the emerging construct of life satisfaction. *The Journal of Positive Psychology* 2008; 3(2): 137-52; doi: 10.1080/17439760701756946
- Eid M, Larsen RJ. *The science of subjective well-being*. New York: Guilford, 2007.
- Veenhoven R. The study of life satisfaction. In Saris WE, Veenhoven R, Scherpenzeel AC, et al. (Eds.), *A comparative study of satisfaction with life in Europe*. Eötvös University Press, 1996. pp.11-48.
- Malinauskas R. The associations among social support, stress, and life satisfaction as perceived by injured college athletes. *Social Behavior and Personality* 2010; 38: 741-52.
- Zafeiroudi A, Kouthouris C. Somatic education and mind-body disciplines: exploring the effects of the pilates method on life satisfaction, mindfulness and self-compassion. *Journal of Educational and Social Research* 2022; 12(4): 1-13; doi: 10.36941/jesr-2022-0092
- Manning-Walsh J. Effect on quality of life and life satisfaction in women with breast cancer. *Journal of Holistic Nursing* 2005; 23(2): 120-40; doi: 10.1177/0898010104272019
- Ari Ç, Ulun C, Yarayan YE, et al. Mindfulness, healthy life skills and life satisfaction in varsity athletes and university students. *Progress in Nutrition* 2020; 22(2): 1-8; doi: 10.23751/pn.v22i2-S.10561
- Zorba E, Üstün ÜD, Bisgin H. Investigation of the relationship between healthy life skills and life satisfaction in university students and varsity licensed athletes. *Sportif Bakış: Spor ve Eğitim Bilimleri Dergisi* 2022; 9(2): 191-9; doi: 10.33468/sbsebd.286
- DaSeul S, Eunji K, Jung Hoon H, et al. The effects of life skills of Korean college student athletes on adaptation and satisfaction in college life. *Journal of American College Health*; 2022; doi: 10.1080/07448481.2022.2054276
- Yuan X, Aoki K, Kato C, et al. Relationship between mental health, life skills and life satisfaction among Japanese athletes. In Chen YW, Tanaka S, Howlett RJ, et al. (Eds.), *Innovation in medicine and healthcare. smart innovation, systems and technologies*. Singapore: Springer; <https://doi.org/10.1007/978-981-19-3440-78>
- Ahmadi M, Hasanzadeh M, Ghara Aghaji SY, et al. Comparison of situational coping strategies, psychological well-being and life satisfaction in athletic and normal students. *Research in Sport Management and Marketing* 2021; 2(4): 28-41.
- Urchaga JD, Guevara RM, Cabaco AS, et al. Life satisfaction, physical activity and quality of life associated with the health of school-age adolescents. *Sustainability* 2020; 12(22): 9486; doi: 10.3390/su12229486
- Grao-Cruces A, Nuviala A, Fernández-Martínez A, et al. Association of physical self-concept with physical activity, life satisfaction and Mediterranean diet in adolescents. *Kinesiology* 2014; 46(1): 3-11.
- Dağlı A, Baysal N. Yaşam doyumu ölçeğinin Türkçe'ye uyarlanması: geçerlik ve güvenilirlik çalışması. *Elektronik Sosyal Bilimler Dergisi* 2016; 15(59), 1250-62.
- Genç A, Karaman F. Üniversite öğrencilerinde sağlıklı yaşam becerileri ölçeğinin geliştirilmesi. *İstanbul Gelişim Üniversitesi Sağlık Bilimleri Dergisi* 2019; 7: 656-69; doi: 10.38079/igusabder.496557
- Kaya Noğay AE, Özen M. Birinci basamak için fiziksel aktivite anketinin Türkçe uyarlanmasının geçerlilik ve

- güvenilirliği. *Konuralp Tıp Dergisi* 2019; 11(1): 1-8. doi: 10.18521/ktd.349033
18. Pedišić Ž, Greblo Z, Phongsavan P, et al. Are total, intensity- and domain-specific physical activity levels associated with life satisfaction among university students? *PLoS ONE* 2015; 10(2): e0118137; doi: 10.1371/journal.pone.0118137
19. Pengpid S, Peltzer K. Sedentary behaviour, physical activity and life satisfaction, happiness and perceived health status in university students from 24 countries. *International Journal of Environmental Research and Public Health* 2019; 16(12): 2084; doi: 10.3390/ijerph16122084
20. Ayhan C, Işık Ö, Kaçay Z. The relationship between physical activity attitude and life satisfaction: a sample of university students in Turkey. *Work-A Journal of Prevention Assessment & Rehabilitation* 2021; 69(3): 807-13; doi: 10.3233/WOR-213513
21. Kvintova J, Kudlacek M, Sigmundova D. Active lifestyle as a determinant of life satisfaction among university students. *The Anthropologist*, 2016; 24(1): 179-85; doi: <https://doi.org/10.1080/09720073.2016.11892004>
22. Korn L, Gonen E, Shaked Y, et al. Health perceptions, self and body image, physical activity and nutrition among undergraduate students in Israel. *PLoS ONE* 2013; 8(3): e58543; doi: 10.1371/journal.pone.0058543
23. Yahia N, Wang D, Rapley M, et al. Assessment of weight status, dietary habits and beliefs, physical activity, and nutritional knowledge among university students. *Perspectives in Public Health* 2016; 136(4): 231-44; doi: 10.1177/1757913915609945
24. Moreno-Gomez C, Romaguera-Bosch D, Tauler-Riera P, et al. Clustering of lifestyle factors in Spanish university students: the relationship between smoking, alcohol consumption, physical activity and diet quality. *Public Health Nutr* 2012; 15(11): 2131-9. doi: 10.1017/S1368980012000080
25. Romaguera D, Tauler P, Bennasar M, et al. Determinants and patterns of physical activity practice among Spanish university students. *Journal of Sports Sciences* 2011; 29(9), 989-7; doi: 10.1080/02640414.2011.578149
26. Marsh ML. The impact of dietary and exercise habits on college students' life satisfaction. Master Thesis. Department of Health, Exercise Science, and Recreation Management, The University of Mississippi, 2013.
27. Grant N, Wardle J, Steptoe A. The relationship between life satisfaction and health behavior: a cross-cultural analysis of young adults. *International Journal of Behavioral Medicine* 2009; 16: 259-8.

Correspondence:

Ümit Doğan Üstün

Hatay Mustafa Kemal University School of Physical Education and Sports, Hatay, Turkey

E-mail: umit.dogan.ustun@gmail.com