

## Examination of Healthy Lifestyle Behaviors of Athletes

### Sporcuların Sağlıklı Yaşam Biçimi Davranışlarının İncelenmesi

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#### ABSTRACT

**Objective:** Athletes must lead healthy lifestyles to maintain their health and performance. This study aimed to reveal the levels of healthy lifestyle behaviors among athletes.

**Materials and Methods:** A total of 338 athletes were included in the study. The participants were administered a Demographic Form and the Healthy Lifestyle Behavior Scale-II. The demographic form provided information on participants' gender, age, nationality, and sports experience.

**Results:** The study found a significant difference in the nutrition sub-dimension of the Healthy Lifestyle Behavior Scale-II according to the participants' gender ( $p<0.05$ ). Furthermore, there was a significant difference in the sub-dimensions and total score of the scale according to nationality ( $p<0.05$ ). In addition, a significant difference was observed in all sub-dimensions and the scale's total score according to the participants' sports experience ( $p<0.05$ ).

**Conclusions:** Athletes often display healthy lifestyle habits and understand the significance of health in sports. Notably, national athletes exhibit higher healthy lifestyle habits than non-national athletes. Moreover, their healthy lifestyle behavior tends to increase as they progress towards higher levels in their sports career. To ensure that athletes maintain their performance, it is crucial to implement plans and policies that encourage the adoption of health-improving behaviors.

**Keywords:** Athlete health, health behaviors, healthy lifestyles, sports

#### ÖZ

**Amaç:** Sporcuların sağlıklarını ve performanslarını sürdürbilmeleri için sağlıklı yaşam stilleri benimsemeleri gerekmektedir. Bu çalışmada sporcuların sağlıklı yaşam biçimi davranışlarının düzeylerinin belirlenmesi amaçlanmıştır.

**Materyal ve Metot:** Çalışmaya 338 sporcu dahil edilmiştir. Katılımcılara Demografik Form ve Sağlıklı Yaşam Biçimi Davranışları Ölçeği-II (SYBDÖ-II) uygulanmıştır. Katılımcıların demografik form cinsiyet, yaş, millilik durumu, spor yılı bilgileri elde edilmiştir.

**Bulgular:** Katılımcıların cinsiyetlerine göre SYBDÖ-II beslenme alt boyutunda anlamlı bir farklılık bulunmuştur ( $p<0,05$ ). Bunun yanı sıra ölçeğin alt boyutları ve toplam puanında millilik durumuna göre anlamlı bir farklılık tespit edilmiştir ( $p<0,05$ ). Ayrıca katılımcıların spor deneyimlerine göre ölçeğin tüm alt boyutlarında ve toplam puanında anlamlı bir farklılık gözlenmiştir ( $p<0,05$ ).

**Sonuç:** Sporcular büyük çoğunlukla sağlıklı yaşam tarzı alışkanlıkları sergilemekte ve sporda sağlığın önemini anlamaktadır. Özellikle milli sporcular, milli olmayan sporculara kıyasla daha yüksek düzeyde sağlıklı yaşam tarzı alışkanlıkları sergilemektedir. Bunun yanı sıra, spor kariyerlerinde daha üst seviyelere doğru ilerledikçe sağlıklı yaşam tarzı davranışları da artma eğilimindedir. Sporcuların performanslarını sürdürbilmelerini sağlamak için sporcularda sağlığı geliştirici davranışların benimsenmesini teşvik eden plan ve politikaların uygulanması büyük önem taşımaktadır.

**Anahtar Kelimeler:** Sağlık davranışları, sağlıklı yaşam tarzı, spor, sporcu sağlığı

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#### Yayın Bilgisi / Article Info:

Gönderi Tarihi/ Received: 11/11/2023

Kabul Tarihi/ Accepted: 10/02/2024

Online Yayın Tarihi/ Published: 11/03/2024

**Atf / Cited:** Cengizöğlü IC and et al. Have Examination of Healthy Lifestyle Behaviors of Athletes. *Online Türk Sağlık Bilimleri Dergisi* 2024;9(1):41-47. doi: 10.26453/otjhs.1389348

## INTRODUCTION

The World Health Organisation has defined the concept of "health" as "not only the absence of disease and disability but also a state of complete physical, mental and social well-being".<sup>1</sup> One of the key points for health protection is individuals' lifestyle behaviours.<sup>2,3</sup>

Healthy lifestyle behaviours are a set of behaviours that enable individuals to maintain a healthy lifestyle and improve their health positively.<sup>4</sup> Today, it is known that lifestyle behaviours of individuals directly affect their health and unhealthy lifestyle behaviours lead to the development of many chronic diseases. With healthy lifestyle behaviours, these chronic diseases can be prevented and mortality rates can be reduced.<sup>5,6</sup> Besides, thanks to these behaviours, individuals protect and increase their health and quality of life.<sup>7,8</sup> For these reasons, teaching healthy lifestyle behaviours to individuals and practices for the development and maintenance of these behaviours gain importance.<sup>9,10</sup> Examples of healthy lifestyle behaviours include taking responsibility for one's health, increasing the level of physical activity, maintaining healthy eating habits, establishing healthy interpersonal, and providing stress and providing stress management.<sup>11-13</sup> There are many factors affecting healthy lifestyle behaviours such as disease, exercise addiction, etc.<sup>14,15</sup>

The athletes' health should be protected and improved, and their behaviors that may negatively affect their health must be regularly evaluated for the athletes to keep and maintain their sportive performance high.<sup>3,16</sup> To protect and improve health, the importance of healthy lifestyle behaviours emerges in sports. By providing athletes with healthy lifestyle behaviours, sports injuries and sudden deaths in sports can be prevented and sportive success can be increased.

This study aimed to reveal the healthy lifestyle behaviours of athletes. In this context, this study will enlighten the plans and policies to be implemented to gain and increase these behaviour levels on the way to sportive success by determining the healthy behaviour levels of athletes. Since current and periodic evaluation of the risks of lifestyle behaviours in terms of health is important, this study will reveal the current healthy lifestyle behaviours of athletes.

## MATERIALS AND METHODS

**Ethical Approval:** The study adhered to the Declaration of Helsinki. In this study, ethical approval was obtained from the ethics committee before starting the study. Approval was obtained from Yalova University Human Research Ethics Committee (Date: 29.11.2022, decision no: 2022/129). Participants were informed about the study and signed a consent

form for their participation.

**Study Design:** The study was conducted as a descriptive study to evaluate athletes' Healthy Lifestyle Behaviours according to their sociodemographic characteristics.

**Research Questions:** Is there a significant difference in the Healthy Lifestyle Behaviours of athletes according to sociodemographic characteristics (gender, national athlete status, sports experience years)

**Setting and Sample:** The research was a descriptive study and the sample of the study consisted of 338 athletes living in Bursa province. Participants were included in the study on a voluntary basis. The participants invited to the study were informed about the study with the Informed Consent Form. The form took approximately 15-20 minutes to fill out.

**Research Inclusion Criteria:** Athletes residing in Bursa who participated in the research voluntarily and filled out the informed consent form were included in the study.

**Research Exclusion Criteria:** In the study, athletes who did not reside in Bursa, who did not voluntarily participate in the research, and who did not fill out the informed consent form were excluded.

**Data Collection Tools:** Demographic Information Form and Healthy Lifestyle Behaviours Scale II were used to collect the data. Demographic Information Form was used to obtain information about the participants' age, gender, nationality status, and sports experience. The Healthy Lifestyle Behaviours Scale II (HLSBS-II) was developed by Walker et al.,<sup>17</sup> and a Turkish validity and reliability study was conducted by Bahar et al. The HLSBS-II consisted of a total of 52 questions and 6 sub-dimensions. The sub-dimensions of the scale consisted of health responsibility, physical activity, nutrition, mental development, interpersonal relationships, and stress management. The behaviours of the participants in the direction of improving their health were measured with the HLSBS-II. The questions in the scale measure the health-promoting behaviours of individuals about healthy lifestyles. The sub-dimensions of the HLSBS-II include mental development, nutrition, physical activity, health responsibility, and stress management. The scale had a 4-point Likert scale including "never", "sometimes", "frequently", and "regularly". Scale scoring varies between 52-208 points.

**Statistical Analysis:** The evaluation of the data was conducted through SPSS-26 package programme. Shapiro-Wilk test, Skewness and Kurtosis values, descriptive statistics, Independent sample T-test, one-way ANOVA, and multiple comparison tests were used to analyse the data. The statistical significance value was accepted as  $p < 0.05$ . In the study, Cronbach Alpha reliability analysis was performed to test

the reliability of the scale. As a result of the analysis, using the total score of the scale in this study,<sup>19</sup> the reliability of the HLSBS-II was found to be 0.925.

**RESULTS**

Table 1 shows the demographic information of 338 athletes included in the study.

The mean total score of the Healthy Lifestyle Behaviours Scale (HLSBS-II) administered to the partici-

pants was 137.10±22.73 (Table 2). The mean scores related to the sub-dimensions of the HLSBS-II are given in Table 2.

It was determined that the nutrition subscale score was statistically higher in male athletes than in female athletes (p=0.003). No statistical difference was found in the other sub-dimensions (p>0.05) (Table 3).

**Table 1.** Frequency distribution of participants' demographic data.

Variables		n (%)
Gender	Male	223 (66)
	Female	115 (34)
Age	18-25	298 (88.2)
	25 and older	40 (11.8)
National Athlete Status	Yes	50 (14.8)
	No	288 (85.2)
Sports Experience	1-5 Years	83 (24.6)
	6-10 Years	164 (48.5)
	10 years and more	91 (26.9)

**Table 2.** Participants' HLSBS-II subscale scores and total scores.

Participants	Sub-dimension/total	Questions Number	Mean±SD	Min-Max.
Athlete	Mental Development	6,12,18,24,30,36,42,48, and 52	23.37±4.29	9-36
	Nutrition	2,8,14,20,26,32,38,44, and 50	24.63±4.52	9-36
	Physical Activity	4,10,16,22,28,34,40, and 46	21.07±4.28	8-32
	Health Responsibility	3,9,15,21,27,33,39,45, and 51	23.99±5.01	9-36
	Interpersonal Relationship	1,7,13,19,25,31,37,43, and 49	22.49±5.07	9-36
	Stress Management	5,11,17,23,29,35,41, and 47	21.57±4.18	8-32
	HLSBS-II Total	1-52	137.10±22.73	52-208

HLSBS-II: Healthy Lifestyle Behaviours Scale; Min-Max.: Minimum-Maximum; Mean±SD: Mean±Standard Deviation.

**Table 3.** Differences in the HLSBS-II sub-dimension scores and total scores of the participants according to gender.

Scale	Sub-dimensions/ total	Gender	n	Mean±SD	t	df	p
	Mental Development	Male	223	23.69±4.38	1.939	336	0.053
		Female	115	22.74±4.07			
	Nutrition	Male	223	25.15±4.43	3.012	336	<b>0.003*</b>
		Female	115	23.61±4.53			
	Physical Activity	Male	223	21.20±4.42	0.791	336	0.430
		Female	115	20.81±4.00			
HLSBS-II	Health Responsibility	Male	223	24.02±5.19	0.122	336	0.903
		Female	115	23.95±4.66			
	Interpersonal Relationship	Male	223	22.72±5.09	1.197	336	0.232
		Female	115	22.03±5.01			
	Stress Management	Male	223	21.66±4.15	0.576	336	0.565
		Female	115	21.38±4.25			
HLSBS-II Total		Male	223	138.44±23.2	1.508	336	0.133
		Female	115	134.51±21.65			

HLSBS-II: Healthy Lifestyle Behaviours Scale; Mean±SD: Mean±Standard Deviation; \*: p<0.05.

It was determined that the national athletes scored statistically higher than the non-national athletes in the mental development, nutrition, interpersonal relations sub-dimensions and HLSBS-II total score ( $p < 0.05$ ) (Table 4). However, no statistical difference was found in other sub-dimensions ( $p > 0.05$ ).

When the sub-dimensions and total scores of the HLSBS-II were examined according to the sports experience of the participants, a significant difference was observed in all sub-dimensions and total scores of the scale according to the sports experience ( $p < 0.05$ ) (Table 5). Post-hoc tests were carried out to determine where this difference originates from. In post hoc tests, a statistically significant difference was found in the Mental Development, Nutrition,

Physical Activity, Health Responsibility, Stress Management subscale scores and HLSBS-II Total score between the athletes with 1-5 years of sports experience and the athletes with 6-10 years of sports experience ( $p < 0.05$ ). A statistically significant difference was detected in the Mental Development, Nutrition, Physical Activity, Health Responsibility, Interpersonal Relationship, Stress Management subscale scores and HLSBS-II Total score between the athletes with 1-5 years of sports experience and the athletes with more than 10 years of sports experience ( $p < 0.05$ ). However, no significant difference was found between the athletes with 6-10 years of sports experience and those with more than 10 years of sports experience ( $p > 0.05$ ).

**Table 4.** Differences in HLSBS-II sub-dimension scores and total scores according to the national athlete status of the participants.

Scale	Sub-dimensions/ total	National athlete status	n	Mean±SD	t	df	p
HLSBS-II	Mental Development	Yes	50	24.58±4.37	2.177	336	<b>0.030*</b>
		No	288	23.16±4.25			
	Nutrition	Yes	50	25.98±4.39	2.309	336	<b>0.022*</b>
		No	288	24.39±4.50			
	Physical Activity	Yes	50	21.34±4.49	0.492	336	0.623
		No	288	21.02±4.25			
	Health Responsibility	Yes	50	25.22±4.95	1.881	336	0.061
		No	288	23.78±5.00			
	Interpersonal Relationship	Yes	50	23.92±4.86	2.181	336	<b>0.030*</b>
		No	288	22.24±5.07			
	Stress Management	Yes	50	22.18±4.19	1.127	336	0.260
		No	288	21.46±4.18			
	HLSBS-II Total	Yes	50	143.22±22.25	2.072	336	<b>0.039*</b>
		No	288	136.04±22.68			

HLSBS-II: Healthy Lifestyle Behaviours Scale; Mean±SD: Mean±Standard Deviation; \*:  $p < 0.05$ .

**Table 5.** Differences in HLSBS-II sub-dimension scores and total scores according to participants' sports experience.

Scale	Sub-dimensions	Sports Experience	n	Mean±SD	F	p	Differences
HLSBS-II	Mental Development	1-5 years (1)	83	21.83±3.99	7.650	<b>0.001*</b>	1 and 2, <b>p=0.003*</b> ; 1 and 3, <b>p=0.001*</b>
		6-10 years (2)	164	23.71±4.11			
		10 and more (3)	91	24.15±4.58			
	Nutrition	1-5 years (1)	83	22.76±4.84	9.905	<b>0.000*</b>	1 and 2, <b>p=0.000*</b> ; 1 and 3, <b>p=0.001*</b>
		6-10 years (2)	164	25.24±4.22			
		10 and more (3)	91	25.23±4.31			
	Physical Activity	1-5 years (1)	83	19.82±4.06	5.309	<b>0.005*</b>	1 and 2, <b>p=0.034*</b> ; 1 and 3, <b>p=0.005*</b>
		6-10 years (2)	164	21.27±4.35			
		10 and more (3)	91	21.84±4.15			
	Health Responsibility	1-5 years (1)	83	22.30±5.33	6.737	<b>0.001*</b>	1 and 2, <b>p=0.006*</b> ; 1 and 3, <b>p=0.002*</b>
		6-10 years (2)	164	24.38±4.89			
		10 and more (3)	91	24.84±4.60			
	Interpersonal Relationship	1-5 years (1)	83	21.29±5.04	3.666	<b>0.027*</b>	1 and 3, <b>p=0.025*</b>
		6-10 years (2)	164	22.63±5.07			
		10 and more (3)	91	23.32±4.94			
	Stress Management	1-5 years (1)	83	20.42±4.20	4.199	<b>0.016*</b>	1 and 2, <b>p=0.023*</b> ; 1 and 3, <b>p=0.043*</b>
		6-10 years (2)	164	21.92±4.07			
		10 and more (3)	91	21.97±4.20			
HLSBS-II Total	1-5 years (1)	83	128.42±23.49	8.678	<b>0.000*</b>	1 and 2, <b>p=0.001*</b> ; 1 and 3, <b>p=0.000*</b>	
	6-10 years (2)	164	139.15±21.68				
	10 and more (3)	91	141.34±22.01				

HLSBS-II: Healthy Lifestyle Behaviours Scale; Mean±SD: Mean±Standard Deviation; \*:  $p < 0.05$ .

## DISCUSSION AND CONCLUSION

Healthy lifestyle behaviours are behaviour models that protect and improve the health of individuals. Health has a great share in building the basis of sportive success. Therefore, it is important to determine the level of healthy lifestyle behaviours of athletes. This study aimed to evaluate the healthy lifestyle behaviours of athletes residing in Bursa province. When the literature was examined, a limited number of studies examining the healthy lifestyle behaviours of athletes were observed. Most of the studies conducted in this direction were conducted on samples such as health personnel and university students. This situation constitutes a limitation in analysing the results of the study with the literature. When the total score of the healthy lifestyle behaviours scale of the participants was evaluated, it was seen that the participants frequently maintained healthy behaviours. This may be because that the participants were athletes and were aware that health was a prerequisite for sportive success. When the literature was examined, there were studies indicating that the health behaviours of physical education teachers, coaches, and athletes were moderate.<sup>20</sup> In another study conducted on athletes, it was observed that the total score of the HLSBS-II of team and individual athletes and national athletes was in a similar range.<sup>21</sup> Besides, in the study conducted by Ertop et al.,<sup>8</sup> it was determined that healthy lifestyle behaviours were higher in individuals who did sports compared to those who did not. It can be said that the result of the study was parallel to the literature.

In the study, no significant difference was found between the total scores of healthy lifestyle behaviours according to the gender of the athletes ( $p < 0.05$ ). Differences were determined only between the scores obtained in the nutrition sub-dimension according to gender. It can be said that male athletes showed healthier eating habits than female athletes. In the literature reviews, similar to the results of the study, there were studies that healthy lifestyle behaviours did not differ according to gender.<sup>15,19,22-24</sup> When analysed in terms of sub-dimension, contrary to the study, some studies found that women had higher scores than men in the nutrition sub-dimension.<sup>25</sup> This difference may be because the participants in the study were athletes.

In the study, it was found that the mental development, nutrition, and interpersonal relationships sub-dimension scores of national athletes were statistically significantly higher than those of non-national athletes ( $p < 0.05$ ). This indicated that national athletes exhibit healthy lifestyle behaviours more in terms of mental development, nutrition, and interpersonal relationships. Moreover, it was found that healthy lifestyle behaviours were more common in general. The status of national athletes, their focus

on success, their desire to win, and their sportive careers may enable them to maintain behaviours that improve their health. For this reason, it can be said that their healthy eating behaviours were more intense. Parallel to this result in the literature reviews, studies showed that national athletes had higher nutritional knowledge levels than non-national athletes.<sup>26,27</sup> National athletes are in contact with more athletes in international competitions in addition to national competitions, which may contribute to the development of healthier behaviours in terms of interpersonal relationships. Furthermore, it is known that national athletes have high levels of sportsmanship orientation.<sup>28</sup> These orientations may contribute to the high level of healthy lifestyle behaviours regarding mental development and interpersonal relationships in athletes.

In the study, based on the scores of mental development, nutrition, physical activity, health responsibility, stress management sub-dimensions, and the total score of the scale, it was found that athletes with 1-5 years of sports experience had higher levels of healthy lifestyle behaviours than athletes with more than 5 years of sports experience. In the dimension of interpersonal behaviours, it was determined that athletes with more than 10 years of sports experience showed significantly healthier behaviours than athletes with 10 years or less of sports experience. It was revealed that healthy lifestyle behaviours did not differ significantly between athletes who have been doing sports for 6-10 years and athletes who have been doing sports for more than 10 years. In general, athletes' healthy lifestyle behaviors, including mental development, nutrition, physical activity, health responsibility, and stress management, significantly improved after five years of their sporting life. However, healthy lifestyle behaviours of athletes, including interpersonal relationships, significantly differentiate and improve after the tenth year of their sports experience. Based on this result, it can be said that athletes can behave more experienced, stable, and goal-oriented after 5 years of experience in their sports life. Therefore, they increase their health-enhancing behaviours by fully realising that the concept of health is important for sports. In addition to this, the existence of rules in sports, compliance of athletes with these rules, respect for the opponent, and development of tolerance are among the characteristics gained by sports in athletes.<sup>29</sup> Based on this study, there are noticeable differences in healthy lifestyle behaviours in the dimension of interpersonal behaviour after 10 years of experience. This may be due to the fact that athletes tend to reach a certain level of maturity, which leads to an increase in their self-esteem. Moreover, their levels of ambition and anxiety are likely to decrease over time. To clearly demonstrate these results, we re-

commend that studies in which anxiety levels and self-esteem are also examined, in addition to healthy lifestyle behaviours in athletes according to their sports experience, should be conducted.

In conclusion, it has been observed that athletes tend to maintain healthy lifestyle habits, and the levels of these habits vary depending on their nationality and the number of years they have been involved in sports. It can be inferred that athletes understand the importance of health in sports. It is crucial to highlight the significance of "health" in the policies and plans for athletes' performance enhancement in the future. Athletes should be educated and supported in various aspects, including nutrition, psychosocial, and health responsibility. Health behaviors need to be developed in this context. The limitations of our study include not examining other parameters besides healthy lifestyle habits. Future studies should focus on exploring whether healthy lifestyle habits, which increase with being a national athlete, are related to interpersonal relations and moral behaviors. Additionally, it is recommended that future studies investigate whether healthy lifestyle behavior levels, which differ according to sports year, are related to athletes' conscious awareness, anxiety levels, and self-esteem.

**Ethics Committee Approval:** The study was carried out by the Helsinki Declaration and approved by the Yalova University Human Research Ethics Committee (Date: 29.11.2022, decision no: 2022/129), and written consent was obtained.

**Conflict of Interest:** No conflict of interest was declared by the authors.

**Author Contributions:** Concept –BK, SAK, İCC, Supervision – BK; Materials –BK, İCC; Data Collection and Processing – İCC, SAK; Analysis and/or Interpretation – SAK; Writing – SAK, BK, İCC.

**Peer-review:** Externally peer-reviewed.

**Other Information:** This article was produced from the thesis titled "Evaluation of healthy lifestyle behaviors of trainer and athletes in Bursa province", published in 2023 within the scope of Yalova University Graduate Education Institute."

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