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Original article

# Analysis of healthy life styles and nutritional attitudes of football referees during the pandemic

*Elif Karagün[1], Sabit Selvi[2], Müge Sarper Kahveci[1]*

[1]Kocaeli University Faculty of Sports Sciences, Kocaeli, Turkey; [2]Kocaeli University, Institute of Health Sciences, Kocaeli, Turkey

**Summary.** *Study Objectives:* This study aims to identify healthy lifestyles and nutritional attitudes of football referees. It intends to analyze these traits based on age, gender, marital status, economic standing, growing plants or keeping a pet at home, having a hobby, doing sports during COVID-19, the term and level of refereeing. *Methods:* All of the 261 football referees in the province of Kocaeli were attempted to be reached for the study. 202 people from this population volunteered to participate in the study. Since the data were normally distributed, t-test and variance analysis were used. *Results:* As a result, the healthy lifestyle behaviors scale for the referees doing sports during the COVID-19 pandemic, was found to be statistically significant in the health responsibility, physical activity, psychological development, and interpersonal relationships sub-dimensions and total. *Conclusion:* As for the females; their scores for the sub-dimensions of attitude towards healthy nutrition, positive nutrition, information on nutrition, emotion for nutrition and malnutrition, and total scores were found to be significantly high. Malnutrition scores were found to be higher for the referees who lived alone compared to those living with their families.

**Key words:** Football Referee, Healthy Lifestyle Behavior, Nutritional Attitudes, COVID-19, Pandemic

## Introduction

Many amateur and professional football leagues have been postponed or cancelled during the pandemic (1). During this period, the lives of individuals in society have changed due to the measures taken against the pandemic. Among the measures taken, social isolation and restrictions have led to a sedentary lifestyle. It is stated that this inactivity resulted in negative emotions (2). The pandemic did not only bring about changes in terms of mental health but also altered the healthy lifestyle that is important for a quality life. It is reported that a healthy lifestyle involves control of all behaviors that affect one's health, taking on the responsibility for health behaviors, doing sports adequately and regularly, a well-balanced diet, not smoking, health responsibility, taking hygiene measures, building positive interpersonal relationships, and stress management (3). It is also emphasized that healthy eating and even the attitude towards healthy nutrition are important for protecting from and treatment of the COVID-19 pandemic (4). The importance of doing exercise for protecting health, in general, has taken its place in the literature (5-6-7). However, even if recommended for health, the opportunity of doing sports is limited due to the measures taken during the pandemic. Apart from doing sports for health purposes, doing sports regularly is a must for performing in some professions. One of the occupations that require regular exercise is refereeing. It is wondered about the healthy lifestyle of the referees during the pandemic who had been working out 4-5 times in a week before the pandemic, based in one hand on the awareness that they have to do regular exercises as part of their occupations, and immobile life, uncertainties, emotional status on the other. Moreover, healthy lifestyle and healthy nutritional

attitudes of the referees are wondered considering the information that emotional changes change nutritional habits and are important especially for various dietary problems like obesity (8-9-10-11), and also the restrictions, uncertainties during the pandemic and health measures taken for prevention of COVID-19 infection, and the statements highlighting the importance of nutrition. Notwithstanding the availability of different studies about the pandemic, the lack of studies about the referees has formed the basis for this research. It is intended to investigate the changes in the lifestyles and nutritional attitudes of the football referees, who work out consistently during usual times, caused by the fact that they are not able to do sports and exercises during the pandemic as the matches are postponed. In this regard, it is aimed to analyze nutritional attitudes and healthy lifestyle behaviors of football referees who stay inactive at home.

## Materials and Methods

### *Population and Sample*

Before the study, approval with decision number 15 was obtained from the Kocaeli Provincial Committee of Referees and the Kocaeli University Social Sciences Ethics Committee. The scales were shared with the population of 261 football referees in the province of Kocaeli through the official website of the Provincial Committee of Referees for 2 months. The study was followed through with the voluntary participation of 202 referees from the population of 261 referees.

### *Measures*

Information Survey: An information questionnaire comprising 16 questions prepared by the researchers was used.

*Healthy Lifestyle Behaviors Satisfaction Scale II:* The scale developed and revised by Walker et al. (12-13), and adapted to Turkish by Bahar et al. consists of 52 items (14). It comprises six sub-scales namely health responsibility, physical activity, nutrition, psychological development, interpersonal relationships, and stress management. It is a type of 4-point Likert scale. An increase in scores indicates that health behaviors are followed at a high level. The reliability coefficient of the scale is 0.92. Cronbach's alpha for this research was found to be 0.81.

*Attitude Scale for Healthy Nutrition:* It is a 5-point Likert type scale consisting of 21 items developed by Tekkursun Demir and Cicioglu. It has 4 sub-dimensions which are information on nutrition, emotion for nutrition, positive nutrition, and malnutrition (15). A score of 21 indicates a very low healthy nutritional attitude while a score between 23-42, 43-63, and 64-84 indicate a low, medium, and high attitude respectively, and a score between 85-110 indicates an ideal high level of attitude. The reliability of the sub-dimensions of the scale was found to be 0.75-0.90. For this study, it was found to be between 0.76 - 0.79.

### *Statistical Analysis*

Since the data are normally distributed when analyzed using SPPS 25.0 package program, out of the parametric tests; independent samples t-test was used for independent group comparisons, and one way analysis of variance (One Way ANOVA) was used for comparisons of three or more groups. To find the source of the difference; Benforroni and Tukey test was used in cases of equality of variances while Tamhane's T2 test was employed in cases of inequality. The significance level was taken as 0.05.

## Results

Information on the research results is given below.

According to Table 1, 15.3% of the referees involved in the study were females and 84.7% were males. Percentage distributions for the marital status, educational status, state of doing sports during the pandemic, keeping a pet at home, refereeing level, contracting COVID-19, and a relative's contracting COVID-19 are shown in Table 1.

Table 2 presents the analysis of the scores obtained for the referees using the healthy lifestyle behaviors scale. As can be seen in the Table; no significant results were found in sub-scales of healthy lifestyle according to gender. Significant results were found in sub-scales

**Table 1.** Percentage distributions for the referees by socio-demographic variables

| Variables | Frequency | Percentage | Variables | Frequency | Percentage |
|---|---|---|---|---|---|
| **Gender** | | | **Person(s) lived together with during pandemic?** | | |
| Female | 31 | 15.3 | Family | 191 | 94.6 |
| Male | 171 | 84.7 | Alone | 11 | 5.4 |
| **Marital status** | | | **Any relatives contracting COVID-19** | | |
| Single | 163 | 80.7 | Yes | 185 | 91.6 |
| Married | 39 | 19.3 | No | 17 | 8.4 |
| **Doing sports during pandemic?** | | | **Keeping pet** | | |
| Yes | 183 | 90.6 | Yes | 48 | 23.8 |
| No | 19 | 9.4 | No | 154 | 76.2 |
| **Age groups** | | | **Family income?** | | |
| 17-23 years | 116 | 57.4 | 0-2000 TL | 3 | 1.5 |
| 24-30 years | 56 | 27.7 | 2000-4000 TL | 55 | 27.2 |
| 31-37 years | 23 | 11.4 | 4000-6000 TL | 73 | 36.1 |
| Over 37 years | 7 | 3.5 | Over 6000 TL | 71 | 35.1 |
| **Educational status?** | | | **Refereeing level** | | |
| High School | 32 | 15.8 | Candidate referee | 66 | 32.7 |
| Bachelor's degree | 155 | 76.7 | Provincial referee | 87 | 43.1 |
| Master's degree | 15 | 7.4 | Regional referee | 26 | 12.9 |
| | | | Class Referee | 23 | 11.4 |

of health responsibility and physical activity in terms of having an occupation apart from refereeing. Higher scores were attained for those who have done sports during the pandemic compared to those who have not, in the sub-dimensions of health responsibility, physical activity, psychological development, and interpersonal relationships. As for the nutrition sub-dimension, higher scores were found for those who contracted COVID-19 compared to those who did not. In the sub-dimensions of health responsibility, physical activity, psychological development, interpersonal relationships, and stress management, the scores of those living alone were found to be higher compared to those living with their families. For the sub-dimensions of physical activity, psychological development, nutrition, and interpersonal relationships, those who grew plants at home scored higher than those who did not.

In Table 3, according to the attitude scale for healthy nutrition, females' scores were found to be high in total and in all sub-dimensions. Scores of those living alone during the COVID-19 pandemic were found high in the malnutrition sub-dimension and total. It was found that the scores of the referees, who kept a pet, for positive nutrition, information on nutrition, and total scores were high.

In Table 4, a significant difference was found; in the sub-dimensions of physical activity and stress management according to economic income; in the physical activity sub-dimension in terms of the level of refereeing, and total scale score and sub-dimensions of health responsibility, physical activity, psychological development and interpersonal relationships according to family income status.

An examination of Table 5 reveals that considering the scores of attitude scale for healthy nutrition based on the level of refereeing; in terms of total scale score, regional referees had significantly higher attitude scores for healthy nutrition compared to provincial and

**Table 2.** Analyses of sub-scales of healthy lifestyle behaviors for the referees based on professional and socio-demographic characteristics (t-test)

| Variables | | Health responsibility Mean±Sd | Physical Activity Mean±Sd | Nutrition Mean±Sd | Psychological development Mean±Sd | Interpersonal relationships Mean±Sd | Stress management Mean±Sd |
|---|---|---|---|---|---|---|---|
| **Gender** | Female | 23.03±4.10 | 23.38±5.45 | 23.00±4.03 | 29.87±4.31 | 27.16±4.42 | 22.32±4.76 |
| | Male | 22.12±5.62 | 22.45±5.38 | 22.38±4.30 | 28.66±4.83 | 27.33±4.72 | 21.32±4.54 |
| | **p value**<br>**t** | 0.294<br>1.059 | 0.375<br>0.890 | 0.457<br>0.745 | 0.194<br>1.303 | 0.851<br>-0.188 | 0.264<br>1.121 |
| **Occupation other than refereeing** | Yes | 22.87±5.25 | 23.41±5.26 | 22.52±4.36 | 29.05±4.84 | 27.40±4.73 | 21.76±4.52 |
| | No | 20.95±5.57 | 20.82±5.27 | 22.37±4.05 | 28.39±4.60 | 27.09±4.55 | 20.85±4.65 |
| | **p value**<br>**t** | **0.019***<br>2.373 | **0.001***<br>3.245 | 0.820<br>0.227 | 0.356<br>0.925 | 0.660<br>0.441 | 0.194<br>1.304 |
| **Doing sports during pandemic** | Yes | 22.51±5.44 | 23.13±5.18 | 22.65±4.23 | 29.06±4.73 | 27.55±4.64 | 21.63±4.63 |
| | No | 19.84±4.68 | 17.36±4.52 | 20.78±4.23 | 26.78±4.69 | 24.94±4.40 | 19.89±3.74 |
| | **p value**<br>**t** | **0.040***<br>2.065 | **0.000***<br>4.663 | 0.070<br>1.824 | **0.048***<br>1.991 | **0.020***<br>2.338 | 0.114<br>1.587 |
| **Contracted COVID-19?** | Yes | 22.76±3.40 | 24.11±4.15 | 24.17±3.85 | 29.14±3.92 | 27.91±4.35 | 22.67±3.69 |
| | No | 22.16±5.74 | 22.28±5.56 | 22.13±4.26 | 28.78±4.92 | 27.18±4.73 | 21.23±4.70 |
| | **p value**<br>**t** | 0.417<br>0.816 | 0.071<br>1.817 | **0.010***<br>2.591 | 0.688<br>0.402 | 0.409<br>0.827 | 0.053<br>1.976 |
| **Person(s) lived together with during pandemic** | Family | 22.02±5.33 | 22.38±5.37 | 22.37±4.25 | 28.68±4.80 | 27.14±4.68 | 21.31±4.56 |
| | Alone | 26.54±5.26 | 26.27±4.38 | 24.18±4.19 | 31.63±3.07 | 30.18±3.57 | 24.27±4.00 |
| | **p value**<br>**t** | **0.007***<br>-2.735 | **0.020***<br>-2.354 | 0.172<br>-1.370 | **0.046***<br>-2.011 | **0.036***<br>-2.117 | **0.037***<br>-2.101 |
| **Growing plants at home** | Yes | 22.64±5.33 | 23.10±5.19 | 22.90±4.13 | 29.26±4.77 | 27.87±4.49 | 21.78±4.45 |
| | No | 20.83±5.55 | 20.64±5.75 | 20.85±4.37 | 27.23±4.43 | 25.14±4.76 | 20.28±4.90 |
| | **p value**<br>**t** | 0.054<br>1.939 | **0.008***<br>2.676 | **0.005***<br>2.814 | **0.014***<br>2.489 | **0.001***<br>3.463 | 0.058<br>1.904 |

*$p<0.05$

class referees; in the malnutrition sub-dimension, candidate referees had significantly higher attitude scores compared to class referees while regional referees had significantly higher scores than class referees.

Table 6 shows that there is a significant and very strong positive correlation between the total score of the Attitude Scale for Healthy Nutrition and that of the Healthy Lifestyle Behaviors Scale-II ($r=.530$, $p<0.001$).

## Discussion

Healthy lifestyle behaviors of the football referees included in this study were found to be of the intermediate level while their attitudes towards healthy nutrition were high. Since people stay at home and there is a risk of health problems during the pandemic, participants' life at home and health status was also questioned.

According to the tables; healthy lifestyle behaviors of the referees were found to be insignificant in terms of gender, age, educational status. Attitudes towards healthy nutrition, on the other hand, were found to be insignificant in all sub-dimensions according to variables such as age, education, family income, doing sports.

As for the state of doing sports during the pandemic, in the healthy lifestyle behaviors scale; while

**Table 3.** Comparison of mean values of the attitude scale for healthy nutrition and its sub-scales based on health, social and professional characteristics of the referees

| Variables | | Positive nutrition Mean±Sd | Information on nutrition Mean±Sd | Emotion for nutrition Mean±Sd | Malnutrition Mean±Sd | Total score Mean±Sd |
|---|---|---|---|---|---|---|
| **Gender** | Female | 21.93±2.83 | 22.74±1.98 | 20.87±5.16 | 23.25±1.93 | 88.80±8.76 |
| | Male | 19.47±4.57 | 20.65±4.42 | 17.72±4.80 | 20.45±4.10 | 78.30±10.76 |
| | **p value**<br>**t** | **0.000***<br>3.980 | **0.011***<br>2.578 | **0.001***<br>3.316 | **0.000***<br>5.990 | **0.000***<br>5.127 |
| **Doing sports during pandemic** | Yes | 20.03±4.41 | 21.11±4.19 | 18.27±4.87 | 20.87±3.91 | 80.30±11.29 |
| | No | 18.05±4.41 | 19.63±4.19 | 17.57±5.99 | 21.00±4.67 | 76.26±8.77 |
| | **p value**<br>**t** | 0.063<br>1.867 | 0.144<br>1.467 | 0.564<br>0.578 | 0.896<br>-0.131 | 0.133<br>1.510 |
| **Person(s) lived together with during pandemic** | Family | 19.74±4.50 | 20.87±4.27 | 18.06±4.97 | 20.73±4.02 | 79.41±11.13 |
| | Alone | 21.72±2.61 | 22.72±2.14 | 20.72±4.60 | 23.54±1.50 | 88.72±6.67 |
| | **p value**<br>**t** | 0.150<br>-1.445 | 0.156<br>-1.425 | 0.084<br>-1.734 | **0.000***<br>-5.210 | **0.007***<br>-2.743 |
| **Keeping pet** | Yes | 21.35±3.26 | 22.25±1.88 | 18.70±5.47 | 21.39±2.98 | 83.70±10.49 |
| | No | 19.38±4.65 | 20.57±4.63 | 18.05±4.82 | 20.72±4.23 | 78.74±11.08 |
| | **p value**<br>**t** | **0.001***<br>3.272 | **0.000***<br>3.619 | 0.427<br>0.797 | 0.227<br>1.216 | **0.007***<br>2.744 |

*$p<0.05$

nutrition sub-dimension was found to be insignificant, the scores for the sub-dimensions of health responsibility, physical activity, psychological development, and interpersonal relationships were found to be significantly high for those doing sports. It is stated in the literature that exercising capacity has been adversely affected during COVID-19 due to interruptions in workout programs (16-17). There are also studies, even if not conducted with referees, which found higher average scores for healthy lifestyle behaviors for those doing sports regularly compared to those not doing so (18-19-20-21-22-23). High health responsibility and physical activity scores of those doing sports are considered to be underpinned by the fact that those people have already adopted a healthy lifestyle, maintained the habit of doing sports and that sub-scale scores for this trait are high.

It was seen that those engaged in an occupation other than refereeing got high scores in health responsibility and physical activity sub-dimensions, however, the scores for nutrition, psychological development, interpersonal relationships, stress management were found to be insignificant. It was not possible to make a comparison since no studies were found in the literature that investigated healthy lifestyle and nutritional attitudes of referees. However, it is inferred from these results that working in various fields raised awareness of protecting and improving health.

According to the healthy lifestyle scale, referees who declared that they contracted COVID-19 had higher scores than those who did not contract only in the nutrition sub-dimension. It is reported in the literature that individuals who received treatment and recovered could feel loneliness because of the pandemic (24-25). In the light of the foregoing, it is thought that those who go through the disease care about their diet because they experienced the disease and they are anxious due to the attitudes of other people towards them because of having experienced the disease.

Those living alone were found to get significantly higher scores compared to those living with their families, for the sub-dimensions of health responsibility, physical activity, psychological development, interpersonal relationships, and stress management. Based on

**Table 4.** Variance analysis for healthy lifestyle behaviors sub-scales according to the health related, social, and professional characteristics of the referees

| Variables | | Health responsibility Mean±Sd | Physical Activity Mean±Sd | Nutrition Mean±Sd | Psychological development Mean±Sd | Interpersonal relationships Mean±Sd | Stress management Mean±Sd |
|---|---|---|---|---|---|---|---|
| **Age** | 17-23 | 21.84±5.58 | 22.02±5.55 | 22.62±4.25 | 28.85±5.15 | 27.41±5.16 | 21.06±4.62 |
| | 24-30 | 22.23±5.23 | 23.30±5.22 | 22.01±4.01 | 28.60±4.44 | 26.89±3.76 | 21.73±4.11 |
| | 31-37 | 23.82±5.17 | 23.56±5.04 | 22.56±5.20 | 28.95±3.80 | 27.86±4.51 | 22.56±5.62 |
| | Over 37 | 24.42±4.46 | 23.14±4.74 | 23.28±3.25 | 30.28±3.77 | 27.00±3.51 | 22.57±3.50 |
| | **p value**<br>**F** | 0.295<br>1.245 | 0.382<br>1.026 | 0.789<br>0.351 | 0.853<br>0.261 | 0.836<br>0.285 | 0.427<br>0.930 |
| **Educational status** | High School | 22.68±4.15 | 22.65±5.25 | 23.06±4.45 | 29.25±5.05 | 27.00±4.21 | 22.06±3.59 |
| | Bachelor's degree | 21.99±5.77 | 22.36±5.58 | 22.43±4.26 | 28.65±4.83 | 27.39±4.88 | 21.20±4.84 |
| | Master's degree | 24.20±3.46 | 24.86±2.55 | 21.60±3.79 | 29.93±3.15 | 27.06±3.30 | 23.00±3.25 |
| | **p value**<br>**F** | 0.289<br>1.250 | 0.229<br>1.487 | 0.537<br>0.625 | 0.537<br>0.623 | 0.892<br>0.114 | 0.257<br>1.367 |
| **Family income** | 0-2000[a] | 26.00±3.00 | 22.00±5.19 | 24.00±2.64 | 31.00±2.64 | 27.00±5.56 | 22.66±2.51 |
| | 2000-4000[b] | 20.21±5.05 | 20.34±5.59 | 21.87±4.54 | 27.47±5.13 | 25.92±5.41 | 20.12±4.79 |
| | 4000-6000[c] | 22.79±5.17 | 22.80±5.03 | 22.72±4.65 | 28.64±5.05 | 27.21±4.25 | 21.69±4.18 |
| | Over 6000 [d] | 23.15±5.64 | 24.14±5.09 | 22.61±3.62 | 30.02±3.91 | 28.47±4.20 | 22.23±4.70 |
| | **p value**<br>**F**<br>**Source of difference** | **0.007***<br>4.143<br>b<c, b<d | **0.001***<br>5.541<br>b<d | 0.614<br>0.603 | **0.020***<br>3.338<br>b<d | **0.024***<br>3.202<br>b<d | 0.067<br>2.424 |
| **Refereeing level** | Candidate[a] | 22.24±4.93 | 21.71±5.93 | 22.66±4.78 | 28.89±5.58 | 26.96±5.28 | 21.00±5.23 |
| | Provincial[b] | 21.91±6.05 | 22.01±5.40 | 22.74±3.97 | 28.73±4.54 | 27.55±4.75 | 21.45±4.28 |
| | Regional[c] | 23.23±5.50 | 24.34±4.57 | 22.57±4.11 | 29.23±4.29 | 27.84±4.01 | 22.88±4.16 |
| | Class[d] | 22.56±4.15 | 25.34±2.82 | 20.78±3.67 | 28.69±3.63 | 26.73±3.01 | 21.30±4.00 |
| | **p value**<br>**F**<br>**Source of difference** | 0.744<br>0.413 | **0.008***<br>4.017<br>a<d, b<d | 0.248<br>1.387 | 0.970<br>0.081 | 0.739<br>0.419 | 0.363<br>1.070 |

*p<0.05

these results, it can be considered that individuals who live alone have adopted to take on the responsibility for their health. Furthermore, taken together, the fact that a healthy lifestyle is defined in the literature as the behaviors that are believed in and displayed to stay healthy and protect from diseases and that psychological hardiness affects the emotional state as an intermediary in terms of social support (22-26), has given rise to the thought that living alone balanced the need for social support and may have positively affected the attitude towards health by increasing psychological hardiness, however, to reach conclusive results, different studies that assess the relationship between healthy lifestyle and psychological hardiness are needed. A significant difference was not found only in the nutrition sub-dimension of the healthy lifestyle scale for those living with their families and alone during the pandemic. Nonetheless, in the malnutrition sub-dimension of the attitude scale for healthy nutrition, those who lived alone were found to have significantly higher scores compared to those living with their families. This has shown that those living alone paid more attention to acquiring healthy lifestyles in order to avoid contracting the disease but they had problems in terms of malnutrition as compared to those living with their families. This has led to consider the necessity of investigation of the relationship between social support and nutrition.

**Table 5.** Comparison of mean values of the attitude scale for healthy nutrition and its sub-scales based on health related, social, and professional characteristics of the referees

| Variables | | Positive nutrition Mean±Sd | Information on nutrition Mean±Sd | Emotion for nutrition Mean±Sd | Malnutrition Mean±Sd | Total score Mean±Sd |
|---|---|---|---|---|---|---|
| **Age** | 17-23 | 19.50±4.94 | 20.55±4.96 | 18.16±5.14 | 20.64±4.17 | 78.87±11.59 |
| | 24-30 | 20.39±3.49 | 21.71±2.55 | 17.50±4.01 | 21.73±3.28 | 81.33±9.40 |
| | 31-37 | 20.08±4.17 | 21.00±3.55 | 19.39±5.78 | 19.91±4.61 | 80.39±12.96 |
| | Over 37 | 20.42±3.30 | 22.00±1.82 | 20.71±5.99 | 21.28±2.75 | 84.42±8.99 |
| | **p value**<br>**F** | 0.639<br>0.565 | 0.346<br>1.109 | 0.240<br>1.413 | 0.222<br>1.477 | 0.374<br>1.045 |
| **Educational status** | High School | 19.68±4.27 | 20.25±4.99 | 18.18±5.31 | 20.00±5.58 | 78.12±13.28 |
| | Bachelor's degree | 19.70±4.50 | 21.07±4.14 | 18.25±5.08 | 21.12±3.65 | 80.16±10.82 |
| | Master's degree | 21.66±3.94 | 21.53±2.74 | 17.73±3.01 | 20.33±2.89 | 81.26±9.34 |
| | **p value**<br>**F** | 0.259<br>1.359 | 0.525<br>0.646 | 0.927<br>0.076 | 0.299<br>1.215 | 0.572<br>0.560 |
| **Family income** | 0-2000 | 20.33±3.05 | 21.33±1.52 | 16.33±3.51 | 22.00±1.73 | 80.00±4.58 |
| | 2000-4000 | 19.69±4.32 | 20.69±3.90 | 19.00±5.28 | 21.45±3.64 | 80.83±9.84 |
| | 4000-6000 | 19.83±4.57 | 20.98±4.65 | 17.97±4.94 | 20.47±3.84 | 79.27±11.34 |
| | Over 6000 | 19.97±4.51 | 21.16±4.07 | 17.91±4.83 | 20.81±4.40 | 79.87±12.11 |
| | **p value**<br>**F** | 0.984<br>0.053 | 0.936<br>0.140 | 0.530<br>0.739 | 0.546<br>0.711 | 0.893<br>0.204 |
| **Refereeing level** | Candidate[a] | 20.03±4.55 | 21.19±4.63 | 19.09±5.47 | 21.48±3.87 | 81.80±11.01 |
| | Provincial[b] | 19.51±4.54 | 20.49±4.17 | 17.45±4.56 | 20.50±4.18 | 77.97±10.93 |
| | Regional[c] | 20.73±4.55 | 21.50±4.49 | 19.61±5.59 | 22.07±3.49 | 83.92±12.71 |
| | Class[d] | 19.60±3.61 | 21.56±2.31 | 16.91±3.51 | 19.26±3.42 | 77.34±8.39 |
| | **p value**<br>**F**<br>**Source of difference** | 0.643<br>0.559 | 0.539<br>0.723 | 0.052<br>2.619 | **0.036***<br>2.900<br>a>d, c>d | **0.026***<br>3.143<br>c>d |

*p<0.05

**Table 6.** Correlation between Scales

| Variables | | Attitude Scale for Healthy Nutrition (ASHN) | Healthy Lifestyle Behaviors Scale II (HLBS) |
|---|---|---|---|
| Attitude Scale for Healthy Nutrition (ASHN) | r | 1 | .530** |
| | p | | .000 |
| | N | 202 | 202 |
| Healthy Lifestyle Behaviors Scale II (HLBS) | r | .530** | 1 |
| | p | .000 | |
| | N | 202 | 202 |

**p<0.001

For the healthy lifestyle scale for those growing plants at home; significantly high scores were obtained in the sub-dimensions of physical activity, psychological development, and interpersonal relationships whereas the difference between the scores was found to be insignificant according to health responsibility and

stress management. As for those keeping a pet at home; in the attitude scale for healthy nutrition; high scores were obtained in the sub-dimensions of positive nutrition, information on nutrition, and total. No studies on growing plants or keeping pets were found in the literature. However, this result shows that growing plants at home contribute to q healthy lifestyle, and keeping a pet contributes in terms of the attitude towards healthy nutrition.

When examined according to family income, in the healthy lifestyle scale, total scores and the scores for health responsibility sub-dimension were found to be high for those with low income. However, the scores for physical activity and interpersonal relationships sub-dimensions were found high for the referees having a high level of income whereas psychological development scores were found to be high for the referees with both low and high income. It is also mentioned in the literature that individuals with high monthly income and better professional status adopt healthy lifestyle behaviors more than others (27-28-29). In some other studies, likewise, it is found that an evaluation made over total score also indicated lower healthy lifestyle scores for those with low income (18).

In examining healthy lifestyle behaviors of the referees according to their level of refereeing; it was found that physical activity sun-dimension scores for those of high levels were significantly higher compared to the scores of provincial and regional referees. In terms of attitudes towards nutrition; malnutrition attitudes reached the highest scores with the provincial and candidate referees while class referees had the lowest scores. These results have led to the thought that the fact that candidate, provincial and regional referees had to keep apart from sports as they could not officiate in amateur league matches because of postponement of the leagues and therefore they did not do training, also affected their attitudes towards nutrition.

As for the gender variable; the scores of females were significantly higher than those of males in all sub-dimensions of the attitude scale for healthy nutrition and total scores. According to the literature; in parallel to the findings of the research, women have higher healthy nutrition attitudes (30) and attached more importance to nutrition compared to men (23). Furthermore, taking together with the information that women have more anxiety about putting on weight as they want to be thinner compared to men, and tend to go on a diet more than men (31), this may be attributed to the body perceptions and attitudes and emotions for eating of women.

A positive moderate correlation was found between the healthy lifestyle behaviors scale and the attitude scale for healthy nutrition. There are results in the literature that demonstrate that caring about healthy nutrition enhances healthy lifestyle behaviors (23).

## Conclusion

In the study, having an occupation other than refereeing revealed positive results in the health responsibility and physical activity sub-dimensions in terms of healthy lifestyle behaviors scale. Those doing sports during the pandemic did not cause a difference in only the nutrition and stress management sub-dimensions of healthy lifestyle scale and living alone did not make a difference a difference in only nutrition sub-dimension of the same scale while they caused a significant difference in other sub-dimensions. In the attitude scale for healthy nutrition, on the other hand, they were found to have high scores in the malnutrition sub-dimension. Growing plants at home; in the healthy nutrition lifestyle scale, caused no difference only according to the sub-dimensions of health responsibility and stress management while it made significant differences in others. Women scored high in all sub-dimensions of the attitude scale for healthy nutrition. Those keeping a pet at home, in the attitude scale for healthy nutrition, did not reveal a significant difference only in the sub-dimensions of malnutrition and the emotions for nutrition. Low family income caused an increase in the scores of health responsibility, psychological development, and total scores in the healthy lifestyle scale. High family income, on the other hand, also increased the scores of physical activity and stress management sub-scales. The high own income of the football referees increased the scores of physical activity and stress management sub-dimensions in the healthy lifestyle behaviors scale. As the level of refereeing increased, the scores for healthy lifestyle also increased according to physical activity. Healthy lifestyle scores decreased

in malnutrition and total scores. Because individuals are at risk of anxiety for health during the pandemic (32), it would be favorable to conduct detailed studies that assess the relationship between healthy lifestyle behaviors and psychological hardiness, emotional state, and social support.

**Conflicts of interest:** The authors declare that there is no conflict of interest about this manuscript.

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**Correspondence:**
Asoss. Prof. Elif Karagün
Faculty of Sports Sciences, Kocaeli University, Kocaeli, Turkey
E-mail: elif.karagun@gmail.com
Phone: +90 532 556 34 40