Investigation of the nutritional habits of students receiving coaching education: a cross-sectional study

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Abstract

Background and Study Aim	The aim of this study is to examine the nutritional knowledge levels and habits of the students who will work in the field of sport sciences in Turkey and who are studying in the Faculties of Sport Sciences.
Material and Methods	The sample of the study consisted of 186 volunteer university students studying in the coaching departments of the Faculties of Sport Sciences, selected by simple random sampling method. General scanning model was used in the research. The data in the study were collected using the 32-item "Nutrition Knowledge Scale for Adults".
Results	Within the scope of the scores in both sub-dimensions of the scale, it was determined that the perception scores of the participants in terms of independent variables were statistically close to each other and they had knowledge about nutrition in general. It was determined that there was a statistically significant difference between the nutritional knowledge levels according to the age variable, and the effect level was close to the middle. It was determined that there was no significant difference between other variables and nutrition.
Conclusions	In addition to a healthy life, healthy nutrition is important for coaches in the continuity of their professional life. It would be beneficial to have more information about nutrition in school curriculum. This will contribute to the fight against obesity, which is today's disease.
Keywords:	sport sciences, coaching, nutrition, knowledge, habit.

Introductıon

The quality of life of human beings depends on complex interactions of genetics, environment and lifestyle [1]. One of the most important indicators that increase this quality of life is undoubtedly health. Among the health indicators of societies, balanced, sufficient and healthy foods take the first place [2]. It is stated that the basic elements necessary for aging in a healthy way and minimizing the health problems that may occur with age are nutrition and physical activities as well as a healthy diet [3]. The concept of being healthy does not merely mean the absence of disease and/or disability in the individual's body. Inadequate and unbalanced nutrition of individuals throughout their lives can cause significant deficiencies in growth and development, as well as affecting a person's physical, mental, and social health [4].

Nutrition refers to the process of taking the nutrients necessary for a person to grow, develop and live a long time in a healthy and productive way and using them in the body [5]. Nutrition is an absolute necessity for individuals. In this context, nutrition means more than just a need for people. It is important in terms of keeping individuals alive

and fit, helping growth and providing the energy needed to ensure reproduction [6]. If people cannot be fed properly in the processes that start with birth, there may be negative developments in line with their physical development processes. They may experience significant problems. In this respect, the unhealthy state of nutrition is a condition that needs attention as much as an infectious disease. In the face of the negative consequences that may occur in the case of poor nutrition, clinical consequences for treatment may occur [7]. Unbalanced eating habits, which can be experienced due to the hustle and bustle of daily life, can often occur due to the insufficient level of nutrition knowledge of the people. Although individuals have sufficient food and economic opportunities in their daily lives, in case their nutritional knowledge is insufficient, they may misuse of existing opportunities [8].

Today, preferring a sedentary life, having insufficient knowledge about healthy nutrition and exercise/sports activities, inactivity due to social media addiction have caused individuals to develop unhealthy eating habits. These habits can cause great damage and/or diseases, especially in young people who are in the process of developing physically [9]. The rate of catching many diseases such as obesity and diabetes is increasing due to time problems caused by the intense pace of life and not having a

balanced diet [10]. In these processes, it is necessary to increase the knowledge level of consumers about nutrition and to know what changes can be made about nutrition.

Nutrition science is a science that is constantly developing and continues to develop. Nutritional knowledge affects the behavior and attitudes of human beings and gives information about what food they should or should not eat [11]. With the correct nutrition information received in the family and at school, acquisition of positive eating habits and the maintenance of these habits can be ensured. With the scientific, technological, economic, social and political developments experienced today, people's lifestyles, needs and expectations are also changing. It can be said that these changes are due to the fact that individuals do not consume the healthy foods that are necessary for the above-mentioned growth and for maintaining a healthy and balanced life [12].

It can be said that the highest risk group in terms of the prevalence of nutritional problems includes university students [13]. Nutrition-related health problems of students may increase due to their difficulty in adapting to the school, environment and dormitory environment and economic inadequacy, as well as their tendency to consume unconscious, unnecessary food and beverages and fast-food [14].

The healthy nutrition, nutrition attitudes and behaviours of the students studying in the coaching departments within the sports sciences departments can be affected by the education they receive in the education and training processes at school. This may also include university students receiving nutrition educationv [15]. In this context, nutrition education can be called an important necessity [16]. in the education of sports and health personnel who are in one-to-one interaction with human health in their professional lives after their school years are over. Because there may not be sufficient number of dieticians and nutritionists to serve the health sector [17]. This situation is also valid for the sports sector.

In the light of the above information, it is important that the knowledge and habits of the students of the department of coaching education, especially those studying in the faculties of sports sciences, about nutrition are formed during the school period. In this way, it is foreseen that positive knowledge and habits about nutrition will help them to perform their profession in the best way.

Materials and Methods

Participants

The population of the study consists of the students of the Faculty of Sport Sciences studying in different universities of Turkey (Rize and Trabzon) in 2021-2022 academic year. The sample of the study consisted of 186 voluntary students (Male=65, Female=121) who were selected from the population by simple random sampling method. The study was approved by the respective institutional review boards and conducted according to the principles of the Declaration of Helsinki.

Data collection was carried out with the decision of the ethics committee of Recep Tayyip Erdogan University Faculty of Medicine, dated 2023, for non-interventional clinical studies.

Research Design

The data required for the study were collected using the "Nutrition Knowledge Level Scale for Adults" consisting of 32 items [18]. The scale used in the research consists of two sub-dimensions, Basic Nutrition (BN) and Food Preference (FP). Basic Nutrition scale consisting of 20 items and Food Preference scale consisting of 12 items are in five-point Likert type. The internal reliability coefficient of the basic nutrition sub-dimension was determined as .72, and the nutrition preference was determined as .74.

Statistical Analysis

In the evaluation of the data in the study, using the Kolmogorov Smirnov test, it was determined that the data showed a normal distribution. Therefore, t-test and ANOVA test were performed for pairwise comparisons as well as descriptive analyses. The eta square ($\eta2$) test was applied for the effect size of the significant difference in the ANOVA test. The effect sizes were found to be .01, .06 and .014 which were accepted as small, medium, and large effects, respectively [19]. In the study, the significance level was accepted as Alpha (α) and the error level was accepted as $p<.05$.

Results

Table 1 presents the demographic characteristic of the participants. In this section, statistical findings on the data obtained from in the survey are. The participants were mostly female (n=121), graduated from sports high school (n=97), had no health problems (n=171), were non-smokers (n=108), and did not drink alcohol (n=130). In addition, most of the participants were between the ages of 20-22 (n=115), were interested in team sports (n=99), and had a budget allocated from 40% financial income to nutrition (n=51). It was also determined that most of the participants consumed 4-5 glasses of water (n=78), consumed 3 meals (n=90), and t attached more importance to dinner (n=81).

Table 2 contains statistical findings regarding the answers given by the participants according to the sub-dimensions of the scale. It was determined that there was no significant difference between the variables of gender and the high school they graduated from, according to both dimensions of the scale, and their perception scores were statistically close to each other ($p>.05$).

Table 1. Analysis of the demographic variables of the participants

Participants' independent variables, (n=186)		(n)	(%)
Gender	Male	65	34.9
	Female	121	65.1
Which high school did you graduate from?	Sports High School	97	52.2
	Other High School	89	47.8
Health situation	Having a Health Problem	15	8.1
	Having No Health Problems	171	91.9
Smoking Status	Smoking	78	41.9
	Not smoking	108	58.1
Alcohol Use Status	Using Alcohol	56	30.1
	Not Using Alcohol	130	69.9
Age Status	20-22 age	115	61.8
	23-25 age	50	26.8
	26 age and over	21	11.4
Status of Doing Sports and Sports Activity	Team Sports	99	53.2
	Individual Sports	65	34.9
	Sporting Activity	22	11.9
Percentage of Income Dedicated to Nutrition	%10	17	9.1
	%20	26	12.8
	%30	43	23.7
	%40	51	25,5
	%50	49	28.9
Amount of Water Consumed Daily	2-3 glass	34	20.5
	4-5 glass	78	41.4
	6 glass and over	74	38.1
Daily Consumed Meal	2 meal	71	30.9
	3 meal	90	46.8
	4 meal	25	22.3
Preferred time to eat	Morning	74	28.7
	Noon	19	18.7
	Evening	81	44
	Night	12	8.6

Table 2. Basic nutrition and food preference analyses of the participants by gender and the high school they graduated from

Parameters	Basic Nutrition (n=186)	Food Preference (n=186)	df	(BN)	(FP)	(BN)	(FP)
	Mean ± SD	Mean ± SD		t		p>.05	
Male	50.33±6.40	34.05±7.01	184	.102	1.531	.919	.125
Female	50.43±6.40	35.66±6.69					
Sports High School	50.75±6.70	34.67±6.99	184	.863	.108	.390	.914
Other High Schools	49.94±6.02	34.56±6.69					

Table 3 contains statistical findings regarding the answers given by the participants according to the sub-dimensions of the scale. It was determined that there was no significant difference between the variables of health problems, smoking and alcohol use according to both dimensions of the scale, and the perception scores were statistically close to each other (p>.05).

Table 4 contains statistical findings regarding the answers given by the participants according to the sub-dimensions of the scale. It was determined that there was a significant difference according to the age variable according to both dimensions of the scale, and the effect level was close to the middle (p<.05. η2=.02/.03). As a result of the Tukey test, it can be said that those aged 26 and over have more information about basic nutrition and nutritional food preference compared to the other ages. It was concluded that there was no significant difference according to the status of doing sports and the budget allocated for nutrition (p>.05).

Table 5 contains statistical findings regarding the answers given by the participants according to the sub-dimensions of the scale. According to the basic nutrition and food preferences of the participants, there was no significant difference between the amount of water consumed daily, the amount of daily consumed meal, and the meals given importance, and the perception scores werefound to be statistically close to each other (p>.05).

Discussion

The determination of the nutritional knowledge levels and preferences of the students receiving coaching education, which constitute the sample of the study, was examined within the scope of basic nutrition and food preference sub-dimensions.

Looking at the scale in general, within the scope of the scores in both sub-dimensions, it was determined that there was no significant difference between the variables of gender and the high school they graduated from, and the

Table 3. Analysis of basic nutrition and food preference status according to the participants' health problems, smoking, and alcohol status

Parameters	Basic Nutrition (n=186) Mean ± SD	Food Preference (n=186) Mean ± SD	df	(BN) t	(FP) t	(BN) p>.05	(FP) p>.05
Having a Health Problem	52.13±7.37	34.45±6.35	184	1.119	1.167	.264	.276
Having No Health Problems	50.21±6.29	36.46±6.86					
Smoking	49.87±6.83	34.37±7.26	184	-.646	-.051	.519	.960
Not smoking	50.55±6.37	34.43±6.81					
Using Alcohol	50.26±6.34	34.47±7.81	184	-.084	-.105	.933	.926
Not Using Alcohol	50.38±6.40	34.63±6.71					

Table 4. Basic nutrition and food preference analyses according to the age, sports status and budget allocated to nutrition of the participants

Parameters	Basic Nutrition (n=186) Mean ± SD	Food Preference (n=186) Mean ± SD	df	(BN) F	(FP) F	(BN) p	(FP) p
a) 20-22 age	50.19±6.80	34.10±6.80	2	2.518	3.418	.048	.035
b) 23-25 age	49.58±4.96	34.61±6.49	183		η²=.02	η²=.03	
c) 26 age and over	53.19±6.49	53.19±6.83	185			Tukey: c-a / p<.05	
Team Sports	50.02±6.54	34.36±7.23	2	.387	.156	.680	.856
Individual Sports	51.22±6.41	34.96±6.60	183				
Sporting Activity	50.60±5.68	34.72±5.76	185			p>.05	
Percent of Material Income Allocated to Nutrition %10	49.00±6.62	33.47±7.28	4			.851	
%20	51.03±5.90	34.57±7.23	181	.340	.583		.675
%30	50.32±7.15	35.08±7.18	185				
%40	50.83±6.62	35.58±6.71					
%50	50.11±5.66	33.76±6.32				p>.05	

Table 5. Basic nutrition and food preference analyses according to the daily water consumed, meal consumed, and important meals of the participants

Parameters		Basic Nutrition (n=186) Mean ± SD	Food Preference (n=186) Mean ± SD	df	(BN) F	(FP)	(BN) p	(FP)
Amount of Water Consumed Daily	2-3 glass	50.14±6.66	34.61±6.71	2	1.367	.500	.258	.607
	4-5 glass	49.58±5.90	34.07±7.01	183				
	6 glass over	51.28±6.70	35.18±6.74	185				
Daily Consumed Meal	2 meals	49.25±6.48	34.38±6.84	2	1.795	.105	.169	.901
	3 meals	51.36±6.15	34.85±6.53	183				
	4 meals	50.96±6.73	34.44±8.04	185				
Preferred time to eat	Morning	50.48±6.84	34.95±7.16	2	1.198	1.663	.312	.177
	Noon	49.31±5.54	34.41±7.63	183				
	Evening	50.92±6.15	36.42±6.41	185				
	Night	47.50±5.97	31.00±5.46					

perception scores were statistically close to each other. In this context, it can be said that women and students who graduated from the health vocational high school have statistically higher nutritional knowledge levels and food preferences. When the groups are examined, it can be said that the nutritional knowledge and food preferences of women and health vocational high school graduates are statistically higher. Nowadays, people may have concerns about having a physically tight body as well as concerns about being healthy. Especially women can give more importance to physical appearance. In this case, female students may put their health at risk due to intensive weight loss diets due to concerns such as having a healthy and firm physical appearance [20]. In addition to factors such as change in interpersonal relationships, lack of self-esteem and anxiety due to the effort to be accepted in social environments, the desire to lose weight due to aesthetic concerns of women can also cause nutritional problems [14]. In this context, in order to create the most appropriate diet for women, both female students should be educated about nutrition during their education and psychological factors that cause distorted image perception should be eliminated [21]. In another finding of the study, which is the high school they graduated from; the fact that the coach candidate students who graduated from sports high school with a higher rate have more knowledge in the field of food preference may be due to the fact that they know this subject in their course curriculum, especially during their high school years. It is stated that the nutritional knowledge level of students who receive nutrition education is higher than those who do not [22]. In addition, it can be said that students received help from books on nutrition and/or from their friends within the scope of the nutrition course they took during university years [23].

It was determined that there was no significant difference between the health problems, smoking and alcohol use variables of the participants according to both dimensions of the scale, and their perception scores were statistically close to each other. Considering the statistical scores, it can be said that the participants who do not have health problems, do not smoke and do not use alcohol have more information on the basic nutrition and food preferences sub-dimensions than those who use them. Students' daily dietary choices may adversely affect students, especially students with health problems [24]. It is stated that these people do not consume healthy food due to the hustle and bustle of their daily professional lives and they have habits that are not suitable for a healthy diet [25]. It can be said that this situation may have negative effects especially on the health of the participants as well as their tiring professional life. In this context, anxiety and stress that cause behaviours such as overeating or refusal to eat can be reduced by teaching methods of coping with all kinds of negative situations that may occur in the professional lives of prospective coach students [15].

It was determined that there was a significant difference according to the age variable according to both dimensions of the scale, and the effect level was close to medium. As a result of the Tukey test, it can be said that those aged twenty six and over have more information about basic nutrition and nutritional food preference compared to the other age groups . It was concluded that there was no significant difference according to the status of doing sports and the budget allocated for nutrition. Although the knowledge levels of basic nutrition and food preferences are close to each other, it can be said that the students who are interested in individual sports and allocate 40% of their monthly income to nutrition have a higher level of knowledge about

nutrition compared to other groups. There may be differences between the nutritional knowledge levels of the students according to age. Especially young individuals' food preferences, consuming fewer portions of vegetables and fruits, and consuming more than three portions of sugary food or beverage a day can have negative effects on individuals [26]. In this context, it can be said that individuals become more knowledgeable and careful within the framework of healthy living as they get older. Proper nutrition is important for physical performance. In particular, some occupational groups should pay attention to the physical development of employees due to their long standing in working environments. Apart from the knowledgeable eating habits of individuals, the sportive activities they perform and their participation in team and individual sports can leave healthier and lasting effects on the individual. In this context, it is beneficial for them to support their individual sports activities with healthy nutrition. Positive contributions can be made to the physical development processes by providing this support from a trainer in terms of sports and a dietitian in terms of nutrition. In this context, it is seen in some research results in the literature that conscious coaches can guide their participants in terms of nutrition and eating habits [27, 28]. On the other hand, there is research stating that nutrition does not have an important place in sports and sportive activities that people do [29]. In the nutrition process, which is necessary for coaches with long training periods to ensure continuity in their professional lives, some foods should be carefully selected and purchased. In this case, in order for the individual to be able to buy healthy foods, it is necessary to have a certain and regular economic income. In this respect, it is important that 40% of the income of the coaching department students participating in the research is allocated to conscious nutrition. Even if the economic situation is bad in Turkey, there are research results indicating high nutritional knowledge levels [30]. This situation can be interpreted as the fact that individuals want to use their economic opportunities in the maximum possible way.

It was determined that there was no significant difference between the knowledge levels of the participants in the basic nutrition and food preferences according to the daily consumed water and meal and the meal status, and the perception scores were statistically close to each other. It is seen that coaching students who drink six or more glasses of water, consume three meals and give more importance to the evening meal have basic nutrition and food preference information. The fact that students have a three-meal diet is considered important in terms of reducing health problems that may occur in the future. Many studies indicate that water and regular meals are important. Deficiencies

in the meal order may cause negative developments towards the development and life of individuals [31]. It can be said that the fact that dinner is more prominent in the research is due to the fact that young individuals generally do not attach much importance to the morning meal. One of the reasons why the morning meal is not given importance although it is an important meal may be because men wake up late and women do not feel hungry in the early hours. It is stated in some studies that university students generally eat irregularly, do not follow the principles of healthy nutrition, and are generally fed with a single meal [32, 33]. This situation can be adversely affected by insufficient and unbalanced nutrition, especially in the rapid growth and development process of youth. It can be said that poor eating habits facilitate the emergence of many diseases such as cardiovascular diseases, diabetes, and obesity in the future [34].

In the light of the above information, nutrition can be seen as both a physiological and psychosocial phenomenon. Nutrition in Turkey can be seen as a well-known phenomenon, which is generally considered by individuals to diet and lose weight. The fact that the diet situation in question is carried out in a controlled manner by experts can usually be realized at very low rates [22]. Dietary recommendations and the quality of nutrition are of great importance in order not to adversely affect the growth and development of individuals and to increase their physical performance [20]. The importance of nutrition in health is well known; poor nutritional behavior can cause millions of deaths annually and leave them vulnerable to epidemic diseases [35]. By understanding the different responses of people, who are the focus of nutrition research, to dietary factors, incomplete information about nutritional knowledge and habits can be prevented. However, the lack of reliable dietary assessment methods can pose a significant challenge to nutritional research [1].

Conclusions

As a result, it is important for the students of the coaching department to have a healthy diet in the continuity of their future professional life as well as a healthy life. It would be beneficial to include more information about nutrition in school curriculum. It is important for a healthy body mass to take part in activities that include team, individual and/or sportive activities, as well as nutrition. It is necessary to create the necessary time and opportunity for participation in these activities in school environments. This will make significant contributions to the fight against obesity and stress, which are today's diseases. In Turkey, more research should be conducted on nutrition in the field of sports sciences, especially at the university level.

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