

THE EVALUATION OF THE NUTRITION STATUS OF INDIVIDUALS WHO ASSIGNED TO DIFFERENT AREAS OF SPORT.

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ABSTRACT

Purpose, In this study, the status of the nutrition and physical activity of the individuals (such as coaches, masseurs, sport administrators, physical education teachers, referees, provincial sport branch representatives), who assigned to different areas of sport were identified.

Methods, This study was performed in five cities of Central Anatolia Region which had been visited for the purpose of nutrition education. Between the years 2008-2009, with total 311 participants (48 female, 263 male) who assigned to different areas of sport. A questionnaire with 35 questions about their personal knowledge, awareness of healthy nutrition /applications and their sport branches before education were conducted to participants. For statistical evaluation of data, that frequency distributions, t test, correlation and one-way anova tests were made by using SPSS 15.0 statistical package programme.

Results, 84.6% of the participants were male, 15.4% were female. The first three lines of profession groups were physical education teachers/university lecturers, coaches and club managers. According to body mass index (BMI) classification; 45.4% of participants were normal body weight (BMI 18.5-24.9), 35.0% were overweight (BMI 25-29.9), 11.6% were obese (BMI \geq 30), 8% were underweight (BMI $<$ 18.5). In the past, according to their sport branches (n=230), the first five lines of the most involved branches were football (20.9%), volleyball (9.3%), basketball (9.0%), running (6.8%) and fighting sports (5.1%), as to now the sports branches which were still active (n=265) the first five lines were football (32.5%), swimming (8.0%), basketball (7.1%), volleyball (6.8%) and jogging (6.1%). There is no significant relationship was observed between the involved sports branches in the past as well as now and the BMI values (p>0.05). It was found that the participant's (n=226) average sport ages were 15.4 \pm 9.3 years. There were a strong and significant relationship between sport ages and BMI values of participants (p;0.01<0.05, r;0.2). Those who said that they were doing sport regularly were 82.3%, weekly average were 3.6 \pm 1.6 days, daily average was 2.4 \pm 1.2 hours. There is a significant relationship observed between education level and the BMI values of participants (p;0.00<0.05). According to BMI classification, the individuals who had normal BMI values were predominantly university and high school graduates. There was a significant relationship between their assigned profession and the BMI values (p;0.01<0.05). The highest averages of BMI were respectively masseurs (28.2 \pm 6.6 kg/m²), provincial representative of the sports branch (26.5 \pm 4.1 kg/m²) and the administrators of sport clubs (26.4 \pm 3.4 kg/m²). It was determined there was no significant difference between the BMI values and chronic disease with statistically, but BMI values of those who had no chronic disease were lower than average. For those who use nutritional supplements (12.5%), the first three lines were respectively; multivitamin (7.1%), omega-3 (3.5%) and iron tablets (1.6%). When the distribution between the education level and distribution of the nutrition knowledge sources was examined the sources of knowledge were mainly gained at school for the university graduates, however for primary and high school graduates, they were mainly gained at the seminars, courses, books and newspapers.

Conclusion, According to the profession distribution, the BMI values were determined higher in some professional groups who had more passive work (such as province sport branch representatives and club managers). Most of the participants were involving in at least one sports branches and also they were spending time for the sports.

Key words: Nutritional status, sports, nutrition education

Introduction

At the present day that is an age of communication and information, apart from being an occupation which people do to have good time and a healthy life, sport is also a job that people do all their life to get money. Recently, it is observed that the number of the people who do sports as a job is on the increase (Ö. Şenel et al., 2004). Most athletes who want to get high successful on the competitions and the

effective people at this branch are in search of increasing their successful to the highest level. The sources of knowledge are usually health specialists and sometimes friends, members of family, magazines, the media. Both athletes and the people who are interested in sports need to have more knowledge about weight control, supplement usage, the nutrition that is competition before, during and after, hydration, eating behavior disorders (LM. Marinaro et

al., 2008; HM. Binkley et al., 2002). It is important to increase the people's knowledge level and also to provide behavior change with the nutrition education (I. Yildiran et al., 2000). Adequate and balanced nutrition helps the individuals' cardiovascular compliance, muscle power, flexibility, endurance increase. It also decrease the risks of the diseases that are tied to obesity and inactivity (A. Baysal, 2007; G. Ersoy, 2007). In this study, the status of the nutrition and physical activity of the individuals (such as coaches, masseurs, sports administrators, physical education teachers, referees, provincial sports branch representatives), who assigned to different areas of sport was tried to be identified.

Method

This study was performed in five cities of Central Anatolia Region that had been visited for the purpose of nutrition education. It was performed between the years 2008-2009, with total 311 participants (48 female, 263 male) who assigned to different areas of sport. A questionnaire which had 35 questions were conducted to participants about their personal knowledge, awareness of healthy nutrition applications and their sport branches before education.

In personal knowledge section, the individuals' disease cases, medicine/cigarette/alcohol consumptions were asked. Nutritional practices were determined according to the individuals' answers about total number of meals consumed in a day, skipping meals status, the source of the nutrition knowledge that the individuals have and the usage status of nutritional

Table 1: The personal characteristics of the participants

Characteristics	Gender	n (number)	Average (X) ± Standard deviation (SD)
Age (year)	Female	48	35.1 ± 7.7
	Male	263	40.0 ± 9.4
Height (cm)	Female	48	164.6 ± 8.3
	Male	263	175.9 ± 6.4
Body weight (kg)	Female	48	58.5 ± 8.9
	Male	263	79.9 ± 11.8
Body mass index (BMI) (kg/m ²)	Female	48	21.3 ± 2.7
	Male	263	25.8 ± 3.5

Table 1: The personal characteristics of the participants

Most of the participants (36%) who joined the education were physical education teachers, university lecturers. In another study that was done on nutritional approaches of the trainers, athletes and the managers (n=430) who manage the sport activities in different cities, it was determined that most of the participants were physical education teachers (24.4%, n=105). The results of this study were similar. And this result showed us that teachers attached importance to nutrition education. (M. Yıldırım et al., 2008).

support products. Anthropometry measurements (body weight and height) were determined according to the individuals' answers. It was asked to the individuals whether they do sports or not in the past and now. The branches that they were active in, the frequency of sport activity and the period of sport activity were also asked to determine their physical activity status. For statistical evaluation of data, that frequency distributions, t test, correlation and one-way anova tests were made by using SPSS 15.0 statistical package programme.

Results and discussion

84.6% of the participants were male, 15.4% were female. 67% of the participants were graduated from university, 24.4% of them were graduated from high school and 7.7% of them were graduated from elementary school. According to sex, the averages of age, body weight, height and body mass index (BMI) were shown on Table 1. According to BMI classification; 45.4% of participants were normal body weight, 35.0% were overweight, 11.6% were obese, 8% were underweight. There was a significant relationship between the education level and BMI values of participants ($p:0.00<0.05$). According to BMI classification, the participants who had normal BMI values were predominantly university graduates and high school graduates. In another study that was done on trainers, athletes and managers, it was determined when the education level increased, BMI values decreased ($r=-0.099$, $p<0.05$). The results of studies were similar (M. Yıldırım et al., 2008).

There was a significant relationship between the profession of participants and BMI values of them ($p:0.00<0.05$). (Table 2). It was determined that the highest averages of BMI were respectively masseurs (28.2 ± 6.6 kg/m²), provincial representative of the sports branch (26.5 ± 4.1 kg/m²) and the administrators of sport clubs (26.4 ± 3.4 kg/m²). The reason of this situation was the insufficient activity of people who worked in the jobs with limited activity and to waste insufficient energy.

Table 2: The relationship between BMI values and the professions of participants

Professions	n	BMI	F	p
		X ± SD		
Administrators of sport clubs	50	26.4 ± 3.4	4.39	0.000*
Physical education teacher, university lecturer	112	23.9 ± 3.3		
Trainer	73	25.6 ± 3.9		
Federation president	39	25.3 ± 3.8		
Provincial sports branch representative	27	26.5 ± 4.1		
Student athletes	2	22.3± 1.2		
Masseur	2	28.2 ± 6.6		
Football referee	4	22.5 ± 3.4		
Total	311	25.1 ± 3.8		

69% of the participants said that they do not smoke and 31% of them said they do. The average consumption rates of the ones who smoked were 13.7±7.8 unit/day. The rates of the ones who said they rarely consumed alcohol were 83%.78.5% of the participants (n=280) said that they do not have any chronic diseases. The first three diseases that were determined were diabetes, hypertension, heart disease (2.6%, 2.6%, 2.3%). It was determined there was no significant difference between the BMI values and chronic disease with statistically (F:2.31, p;0.07>0.05), but BMI values of those who had no chronic disease were lower than average (24.9±3.8 kg/m²). In another study, it was determined that hypertension and hyperlipidemia rates were higher for the individuals who had high BMI values (AA. Bayram, 2006).In the past, according to their sport branches (n=230), the first five lines of the most involved branches were football (20.9%), volleyball (9.3%), basketball (9.0%), running (6.8%) and fighting sports (5.1%), as to now the sports branches which were still active (n=265) the first five lines were football (32.5%), swimming (8.0%), basketball (7.1%), volleyball (6.8%) and jogging (6.1%). There is no significant relationship observed between the involved sport branches in the past as well as now and the BMI values (p>0.05).It was found that the participant's (n=226) average sport ages were 15.4 ± 9.3 years. There were a strong and significant relationship between sport ages and BMI values of participants (p;0.01<0.05, r;0.2). BMI values were found lower at the ones whose sport age was high.It was determined that those who said that they were doing sport regularly were 82.3%, weekly average were 3.6±1.6 days, daily average was 2.4±1.2 hours. According to sex, there was no significant difference in weekly frequency of doing sports (t; 0.13, p;0.89>0.05).It was determined that the rates of the participants(56.9%) who had three meals in a day were more than the others, and the meal that was skipped mostly was lunch. It was also determined that the first reason of skipping the meal was “not to find an opportunity and to forget”. The first three food that were consumed between meals were cake/biscuit varieties, fruit and juice (11.3%, 7.7%, 5.8%). The average water consumption was determined as 1.7±0.7 L/day.When the distribution between the education

level and distribution of the nutrition knowledge sources was examined, it was determined that sources of knowledge were mainly gained at school for the university graduates, however for primary and high school graduates, they were mainly gained at the seminars, courses, books and newspapers. In the study that was done to determine nutrition knowledge and habits of overall elite basketball players, it was determined that 15.9% of them gained their nutrition knowledge from trainers, 28.9% gained from books, 34.8% gained from their athletes friends and 20.4% gained from dieticians (E. Süel et al., 2006). In another study that was done to research the attitudes of the olympic branch trainers, the rates of the ones who said they studied with books and school courses were respectively found as 45.7% and 39.9%. In study by Corley et al., it was determined that 70% of the trainers who were from different branches gave the right answers to the questions about nutrition (G. Corley et al., 1990). In another study that was done to determine the nutrition knowledge level of trainers, the rates of giving right answers to the questions were found as 67% (M. Smith-Rockwell et al., 2001). In the study that was done on physical education teachers, although 96.0% of the teachers thought they had enough knowledge about nutrition, it was determined that they needed more education and there was a significant difference between the sex (O. Çongar et al., 2004).

It was determined that there was no significant relationship between the sport ages of participants and the sources of nutrition knowledge (F;0.75, p;0.60>0.05). It also determined that there was no significant relationship between the sport age and chronic disease (F;1.18, p;0.31>0.05).82% of the participants (n=294) who answered the question “Do you use nutritional supplements?” said “no”. The first three supplements of the ones (12.5%) who said “yes” were multivitamin (7.1%), omega-3 (3.5%) ve iron tablets (1.6%). It was determined that the duration of supplement use and the average amount were respectively 5.1±5.3 month, 1.6 ± 0.8 unit/day. 9.6% of the participants said that they started using supplements with doctor's advice and 2.9% said they started using with coach/fitness instructor's advice. It was determined that there was no significant relationship between the education level of participants and

nutritional supplement use cases ($p;0.53>0.05$). In another study that was done on 120 athletes from different branches, it was determined that 55% of the athletes used ergogenic product and the first three supplements were respectively vitamin, amino acids and creatine (I. Bayraktar et al., 2002). In another study in which the vitamin and mineral usage of 742 university athletes from different sport branches were researched, it was determined that families (36%), doctors (26%), trainers (14%), friends (10%), magazines/newspapers (9%), television/radio (7%) and teachers (4%) were effective on the supplement usage of athletes (J. Sobal et al., 1994). Yildiran et al. in study that was done on 50 trainers from different sport branches and different cities, it was determined that 28% of the study group used protein powder and 64 used vitamin tablets. It was also determined that the vitamins that were preferred most were respectively multi-vitamin complex, B and C vitamins. (I. Yildiran et al., 2000). In different study that was done on 236 university athletes, it was found that 88% of the athletes used one or more dietary supplements, the first nutrition knowledge source was trainers and the second knowledge source was dieticians (RD Burns et al.,

2004).The questions that were asked to the participants to determine their eating habits and the answers of these questions are on Table 3. It was determined that there was a significant difference between the BMI values of participants who said “yes” and “no” to the question “Do you use olive oil at your home?” and the education level of them ($p<0.05$). It was also determined that there was a significant difference among the education level of participants who answered the question “do you consume rice and pasta more than five times a week?” ($p<0.05$).

To attach importance to consuming vegetables/fruits and fish whose protective effect on coronary heart diseases are known (A. Norday, 2001; K. Sidhu, 2003). In the end of the study, it was determined that the participants focused on consuming olive oil, legumes, dairy products. It was a positive finding. Most of participants wasn't eaten fish at least 2-3 times a week. In different study that was done on the trainers' nutrition knowledge, although the trainers gave the right answers at a rate 70% of questions that were asked to them, it was observed that they usually used protein weight and excess fat diets (CR. Juzwiak et al.,2004).

Table 3: The answers of participants to the questions about nutrition habits

Questions	Yes		No		BMI P	Education level P
	n	%	n	%		
Do you regularly eat vegetables-fruits 5 times a day?	90	28.9	213	68.5	0.12	0.66
Do you eat fish at least 2-3 times a week?	82	26.4	219	70.4	0.52	0.77
Do you eat more than 2-3 portions of red meat a week?	156	50.2	148	47.6	0.78	0.77
Do you go to fast food restaurants more than one time a week?	32	10.3	271	87.1	0.15	0.56
Do you eat legumes (haricot bean, pea) more than one time a week?	240	77.7	62	19.9	0.66	0.80
Do you eat rice and pasta more than five times a week?	106	34.1	192	61.7	0.28	0.04*
Do you eat nuts at least 2-3 times a week?	204	65.6	95	30.5	0.53	0.94
Do you use olive oil at your home?	264	84.9	37	11.9	0.04*	0.03*
Do you consume two cups of yogurt/milk and/or two matchbox cheese (60 g) two times a day?	252	81.0	53	17.0	0.55	0.41
Do you eat sweet or candy several times every day?	148	47.6	152	48.9	0.06	0.25

* $p<0.05$

Conclusions

When education level increased, both their BMI values and the risk of diseases was decreased and also their nutrition applications were done more accurately. Most of the participants nutrition habits weren't adequate. Distribution of the nutrition knowledge sources was examined, it was determined that sources of knowledge were mainly gained at school for the university graduates, however for primary and high school graduates, they were mainly

gained at the seminars, courses, books and newspapers. According to the profession distribution, the BMI values were determined higher in some professional groups such as province sport branch representatives and club managers who had more passive work. BMI values were found lower at the ones whose sport age was high. When asked about their still active sport branches that most of the participants were involving in at least one sports branches and also they were spending time for the sports.

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