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INVESTIGATION OF NUTRITIONAL KNOWLEDGE LEVELS AND SPORT ACTIVITY, IN DETERMINATION OF THE BODY MASS AND MOOD STATES OF STUDENT ATHLETES

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ABSTRACT

In this paper, the role of nutrition knowledge levels and physical activity for various conditions of moods in university athletes is studied. For evaluation of nutrition knowledge variable, various questionnaires are used; standard questionnaire of nutrition knowledge2,19 , standard questionnaire of3, for testing body mass and evaluation of physical activity while for studying the moods variance, the standard questionnaire2 is used. The verification of the questionnaires are carried out by Alfa Cronbach test in which comprises; nutrition knowledge section with 0.82, physical activity with 0.79, body mass 0.86 and mood conditions as 0.88. The questionnaires are distributed among 150 university students. And the results depict that nutrition knowledge levels and physical activity have tremendous effects on body mass and mood of athlete students at universities (P<0.05).

Key words: Nutrition knowledge level, physical activity, body mass, mood conditions, student athletes.

SPORCU ÖĞRENCİLERİN RUH HALİ VE VÜCUT KİTLESİNİN BELİRLENMESİNDE, SPORTİF AKVİTE VE BESLENME BİLGİ DÜZEYLERİNİN ARAŞTIRILMASI

ÖZ

Bu çalışmada, sporcu Üniversite öğrencilerinin ruh hali ve vücut kitlesinin belirlenmesinde çeşitli anketler kullanılarak sprocuların sportif aktivite ve beslenme bilgi düzeyleri araştırılmıştır. Beslenme bilgi düzeylerinin belirlenmesi için; standart beslenme bilgisi anketi19 ve standart anketi3, vücut kitlesini belirlemek için ise fiziksel aktivite değerlendirme anketi, moral durumlarının varyansını belirlemek için, standart anket2, anketlerin doğruluğunu belirlemek için Alpha Cronbach testi yöntemi kullanılmıştır; değerlendirme sonucunda beslenme bilgi düzeyi 0,82, fiziksel aktivite 0,79, vücut kitlesi 0.86 ve moral durumu değerleri 0.88' olarak belirlenmiştir. Anketler 150 Üniversite öğrencisi arasında uygulanmıştır. Sonuç olarak sporcu öğrencilerin beslenme bilgisi ile fiziksel aktivite düzeylerinin, vücut kitlesi ve ruhsal durumları üzerinde önemli derecede etkili olduğu belirlenmiştir (P<0.05).

Anahtar kelimeler: Beslenme bilgi seviyesi, Fiziksel aktivite, vücut kitlesi, moral durumu, sporcu öğrenciler

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INTRODUCTION

Nowadays in professional sport world, winners win with only a portion of a second, a kick, or a critical foul which makes the winners apart from the rest while they may have similar skills and abilities. Hence, the major factor affecting the athletes'performance is the psychology skills. There are several psychological parameters available, in which have considerable effects on the performance of the athletes. The most significant one is associated with the mood states. The mood states in psychology is interpreted as a dominant factor in sport activities and is an efficient tool to enhance the quality and accuracy of predictions in performance of athletes[20].

Lane et al. (2005) defined the mood as a transient emotion which is variable in terms of strength and duration and can be considered longer than excitement which leaves big influences in evaluation and description of a psychological state performance, in the past, present and future. The nature of mood can alter the behavior, success and failure of an athlete and is divided into two types; a negative mood which is included with tensions, depression, anger, tiredness and agitation while a positive mood brings happiness, liveliness and hope[14].

Obesity is a growing public health problem around the world[18]. According to the National Survey on Health and Nutrition in the Americas, about one third adults over the age of 20 were obese[9]. And the prevalence of overweight and obesity among all US population groups over two years has increased for the past three decades, and if this trend continues, by the year 2030 it will be about 86.3% of adults with overweight or obesity[23]. The body mass index, which is obtained by dividing the weight in squared kilograms per meter height in meters, is a common method for measuring body fat, but also a quick weight measurement tool in relation to height. Therefore, it is the best method for measuring overweight and obesity. Overweight in adults is based on body mass index of more than $25\frac{\mathbf{kg}}{\mathbf{m}^2}$ and obesity with body mass index greater than $30\ \frac{\mathbf{kg}}{\mathbf{m}^2}$ and less than $18.5\frac{\mathbf{kg}}{\mathbf{m}^2}$ is defined as slimming state[26].

Nowadays obesity and overweight are recognized as one of the major health threats in societies. As a matter of fact, theyare in connection with biochemical, individual, socio-economic, nutritional and other factors.

Physical activity is one of the essential factors in maintaining the quality and healthiness of life[24]. The required physical activity to maintain and improve health in adults is30 minutes with moderate intensity with 5 days per week. For every 1% increase in physical activity in the population, 100 number of deaths, due to coronary artery disease, is prevented. In addition, hypertension, high blood fat and obesity will be decreased[5].

The researchers presented that the psychological benefits of physical activity can be achieved by balancing food intake and energy consumption, which has a direct impact on weight control and obesity. In a situation where the amount of energy and food consumption is high, it is difficult to balance energy only through diet. Physical activity can be useful for storing, maintaining and controlling balanced

energy and can also lead to weight loss and avoid weight gain[6].

Today, in the world of sports, repeated exercises are not considered as the only key factor in achieving predetermined goals and the progress of champions in various sports is not dependent only on difficult and continuous exercises, but also on the knowledge and quality of the athletes' nutrition in which determines the winners. In other words, nutritionknowledge can be used as a contributing factor to athletic success. This fact is stressed by a group of scientistswho believe that with a good knowledge in nutrition and feeding, athletes will have better athletic performance[11].

Nutrition in parallel with sport exercises is considered to be the most important factor in gaining success, and the only factor that the effectiveness of other factors depend on it. Therefore, nutritional knowledge plays an important role in adopting proper nutritional practices and is essential to improve athletic performances.

The set of information and knowledge that a living creature is required in foods besides the method of preparing and usingthem and methods of disposing the wasted part of foods is defined as the knowledge of nutrition[10]. One of the most important factors in increasing the strength and body mass of athlete students is to follow the diet according to the type, intensity and duration of exercise. In addition, simple dietary changes for individuals can have a major impact on treating the depression, anxiety and mood disorders. In general, the importance of the role

Nutrition knowledge as well as physical activity roles are significant in health and body mass states. Regarding the importance of the mood states and body mass index in the case of athlete students, the present study investigates the role of nutritional knowledge and physical activity on the physical mass and mood of student athletes.

MATERIAL AND METHODS

The present research in terms of purpose is divided into applied research and in terms of the method is a descriptive and correlation one. Furthermore, in terms of data collection, the research method is a survey strategy.

Participants

The statistical population of this research is among the student athletes from football, chess, wrestling, track and field and Taekwondo, whose numbers are equal to 150 people and according to the Morgan Table a sample of 108 people was also selected. Statistical sample among the members of statistical society is taken using simple random sampling method. For evaluation of the nutrition knowledgeparameter, the standard questionnaire of[19] is used. In addition, for studying the parameter of physical activity, the standard questionnaire of[3] is selected while for body mass and mood states parameters the standard questionnaires of[2] and[14] are selected, respectively. It is worth mentioning that for measuring the stability, the Alfa Kronbach test is applied. Alpha coefficient according to the nutrition questionnaire is equal to 0.82, based on physical activity questionnaire is 0.79, regarding the body mass questionnaire is 0.86 and eventually for the mood state questionnaire is 0.88. Furthermore, in order to test the assumptions of the research a statistical regression test is used.

Data collection tools

SPSS V.22 and linear regression use this paper.

Nutrition Knowledge

In nutrition knowledge, food is referred as a solid or liquid substance, which after eating and digestion the body absorbs through the intestines (or, in some other way, injected into the body), which maintains tissues and helps the development and reproduction of cells, the regulation of animal reactions, and the development of epidemiological data.The absorbed molecules derived from foodare defined as nutritional food. The most important nutrition available in the food is the chemical components of the food in which possess three main roles of energy creation, body regulation or growth action and restoration of tissues of the body.

Some foods only contain one nutritious substance, such as sugar that consist of only carbohydrates. Others contain a large amount of nutrients, such as milk that contains proteins, fat, carbohydrates, and various salts and a group of vitamins. In general, a nutrient may perform one or more nutritional exercises in the body, such as proteins that burn in the body and generate heat and energy, as well as for the growth and development of new cells and tissues, and to make hormones, enzymes, co-enzymes and antibodies. In addition, the body to fully meet its nutritional requirements and to have a balanced diet, should use a variety of available foods to provide one or more types of nutrients for the body[7].

Physical Activity

The benefits of mobility and physical activity are not coveredto anyone, so that lifeless life is one of the major risk factors for chronic diseases and early mortality. The lack of physical activity has been warned by the World Health Organization (WHO). Light and moderate activities have been associated with a reduction in heart disease in women and moderate-intensity activities with reduced mortality in men[16].

Physical activity improves the quality of life of all ages, but for adolescence and youth which are a transition period from childhood to adulthood, lifestyle habits such as regular exercise begin naturally and continue in this period. Scientific reports reveal that lifestyles in adolescence constitute an independent factor that threatens chronic health problems and lowers the quality of life at an early age[12].

Physical activity is any type of activity caused by the muscles and skeletal body, resulting in increased physical activity. The energy required for our body activity is derived from consumed food. The sugars and fats in the food are consumed and energy is produced. If their amount exceeds the energy of the activity item they need to be stored in starch and fat in the body, and they are used whenever the need for energy is raised. In addition, physical activity is effective in controlling weight by increasing the body's energy requirement to consume starch and body fat[20].

Body Mass

Body mass index is a criterion to measure the proportion of weight to body height. This index is calculated by dividing the weight of a person by its height squared. Different methods are used to measure body mass index, except for the weight division, which can also have different scales, is another common method of measuring this index through calculation in the graph. If the horizontal axis is the

weight the individual in Kg and the vertical axis is also height of individual, so by calculating the desired point we can consider whether the person's height is in the appropriate range or suffering from deficits or overweight. This index was originally introduced in year 1972 in a scientific journal and is now used as one of the most prestigious scales for measuring the likelihood of an overweight or weight loss. This indicator has been quickly adopted by physicians and nutritionists due to an unprecedented increase in obesity in the industrialized nations, and its simplicity in calculation, even done by unprofessional people, made it an easy access and valuable method to calculate fitness. Throughout the research in different age groups, racial segregation and sexual groups, this indicator was standardized to the people of various societies, and the credibility and reliability of its results are roughly proved[8].

Mood states

Cohen et al (1988) describe the mood states periodically in which the individual tries to adapt to the needs of the environment. So, it can be said that mood changes depend on the conditions. In other words, the individual encountering with the most important conditions is the environmental eventswith in-depth assessment of the conditions[25].

The mood in the psychology of sport is considered as an effective factor in sport performance and is used to better predict performance of athletes with more accuracy. Laneet al(2005) consider the mood as a set of transient emotions that vary in terms of intensity and duration, which are usually longer than excitement, and they consider it as a factor that affects theevaluation and interpretation of a psychological situations and the performances in the past, the present, and the future.(Morgan, 1985) after researching athletes found that successful athletes have more positive mental health attributes and less negative mental health attributes than less successful athletes and ordinary people, and have a unique mood profile called Ice Creek Profile. In this case, athlete scores in negative components are at the bottom of the chart and positive components are placed on the top of the chart and create a shape similar to the iceberg. It means that the liveliness score is higher than other scores and the score for the negative people is lower than this level[21].

RESULTS

Assumption 1:

Nutrition knowledge levels has considerable effects on the body mass of student athletes. For verifying the assumption 1, a statistical regression test with one variable is adopted.

Viewed from table 1 the correlation coefficient for nutrition knowledge levels with body mass is equal to 0.87. In other words, the linear relation among two parameters is equal to 0.77. It means nutrition knowledge levels the variation of body mass considers to be 0.77 and 0.23 as a residual is determined according to the other variables.

According to the results of table 2, and given that the significance level of the test error is less than 0.05, then it can be said the first hypothesis is confirmed and nutritional knowledge has a significant

positive effect on body mass. Also, the beta coefficient indicates that nutrition knowledge predicts 0.87 of changes in body mass index.

Table 1. Summary of regression model with one variable

Adjusted Determination Coefficient	Determination Coefficient	Correlation Coefficient
0.768	0.770	0.877

Table 2. Results of regression with one variable for studying the effects of nutrition knowledge in body mass according to the assumption 2

Predicting Variable	Nonstandard Coefficients		Standard Coefficients	t	p
	B	SE	BETA		
Constants	1.638	0.110		14.895	0.000**
Nutrition Knowledge Levels	0.566	0.029	0.877	19.685	0.000**

*:p<0,05, **:p<0,01

Assumption 2:

Nutrition knowledge levels has tremendous effects on the mood states of student athletes.

For testing the assumption 2 as well as the first case a statistical regression test with one variable is implemented.

As shown in table 3, the correlation coefficient between nutrition knowledge and mood states is 0.53, in other words, the linear relationbetween the two variables is 0.53. Also the coefficient of determination is equal to 0.28. And the nutrition knowledge determines the 0.28 of changes in mood states and the remaining part which is 0.72 is determined by the other variables.

According to the results of table 4, and since the significance level of the test error is less than 0.05, it can be said that the second hypothesis is confirmed and nutritional knowledge has a significant positive effect on mood states. Also the beta coefficient of states that nutrition knowledge predicts 0.59 of changes in mood states.

Table. 3. Summary of regression model with one variable

Adjusted Determination Coefficient	Determination Coefficient	Correlation Coefficient
0.279	0.288	0.537

Table 4. Results of regression with one variable for studying the effects of nutrition knowledge in mood states according to the assumption 2

Predicting Variable	Nonstandard Coefficients		Standard Coefficients	t	p
	B	SE	BETA		
Constants	4.247	0.312		13.598	0.000**
Nutrition Knowledge Levels.	0.494	0.082	0.537	1.458	0.000**

*:p<0,05, **:p<0,01

Assumption 3:

Physical activity has considerable effects on the body mass of student athletes.

In order to qualify the assumption 3 a statistical regression model is presented with one variable.

Looking at table 5, the correlation coefficient between physical activity and body mass is equal to 0.6, that is, the linear relationship between the two variables is 0.6. Also, the coefficient of determination is 0.36, that is, physical activity determines 0.36 of body mass changes and the remaining 0.64 are determined by other variables.

According to the results of table 6, and given that the significance level of the test error is less than 0.05, then it can be said the third hypothesis is confirmed and physical activity has a significant positive effect on body mass. Also, the beta coefficient shows that physical activity predicts 60% of changes in body mass variations.

Table 5. Summary of regression model with one variable

Adjusted Determination Coefficient	Determination Coefficient	Correlation Coefficient
0.359	0.368	0.607

Table 6. Results of regression with one variable for studying the effects of nutrition knowledge in mood states according to the assumption 3

Predicting Variable	Nonstandard Coefficients		Standard Coefficients	t	p
	B	SE	BETA		
Constants	1.385	0.405		3.417	0.000**
Nutrition Knowledge	0.689	0.096	0.607	5.076	0.000**

*:p<0,05, **:p<0,01

Assumption 4:

Physical activity has considerable effects on the mood states of student athletes.

For verification of above assumption a statistical regression test with one variable is presented.

As shown in table 7, the correlation coefficient between physical activity and mood states is equal to 0.66, that is, the linear variation between the two variables is 0.66. Also, the coefficient of determination is 0.44, in other words, the physical activity determines0.44 of variations in mood states and the remaining which is equal to 0.56 are determined by other variables.

As seen in table 8, and given that the significance level of the test error is less than 0.05, then it can be said the fourth hypothesis is confirmed and physical activity has a significant positive effect on mood conditions. Also the beta coefficient of the badgedepicts that physical activity predictsthe 0.66 of changes in mood state.

Table 7. Summary of regression model with one variable

Adjusted Determination Coefficient	Determination Coefficient	Correlation Coefficient
0.437	0.440	0.664

Table 8. Results of regression with one variable for studying the effects of nutrition knowledge in mood states according to the assumption 4

Predicting Variable	Nonstandard Coefficients		Standard Coefficients	t	p
	B	SE	BETA		
Constants	0.991	0.433		2.292	0.023*
Nutrition Knowledge	0.698	0.103	0.664	5.818	0.000**

*:p<0,05, **:p<0,01

CONCLUSION

In this research, the role of nutritional knowledge and physical activity in the body mass and athletic students' mood were studied and four assumptions were presented, in which according to the first one knowledge of nutrition has positive effects on body mass as well as mood states according to the analysis carried out for assumption 2. The current results according to the previous assumptions depict that nutrition knowledge is an undeniable factor for the success of student athletes. It means that nonstandard nutrition can prevent even a skilled athlete from success and further flourishing.

According to the third assumption which covers the role of physical activity on body mass, it is inferred that physical activity is a prominent factor in predicting the 0.60 body mass changes. And it helps to increase the mass of body. Besides, according to the assumption 4, physical activity can even influence mood states which is proved by the Beta coefficient.

At present, the importance of physical activity as a part of research in the field of mood states, is only a small portion of mental issues investigations. And we know that sedentary activity may have effects onpsychological aspectsbesides on the body and body mass of individuals. Hence the study of the effect of physical activity on body mass and mood in a student society and especially in athletic students is an issues that needs to be addressed.

Given the fact that the body and mind interact with each other and the health of these two categories embraces a general human health and well-being, addressing this issue and recognizing the permanent effects of these two on each other is a necessity. In general, the results of the third and fourth hypotheses showed that athletic students withsufficient physical activity, experienced psychological improved effects such as improving mood conditions, in addition to the boosted physical effects.

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