Gözde Nihan ÜNSAL ${ }^{1}$ Günay ÖZDEMiR ${ }^{2}$ Gülgün ERSOY ${ }^{3}$
${ }^{1}$ Uludağ Üniversitesi, Tıp Fakültesi Hastanesi, Beslenme ve Diyetetik Bölümü, Bursa, TÜRKIYE
${ }^{2}$ Gazi Üniversitesi, Sağlık Bilimleri Enstitüsü, Beden Eğitimi ve Spor Yüksekokulu Ankara, TÜRKIYE
${ }^{3}$ Hacettepe Üniversitesi, Beslenme ve Diyetetik Bölümü, Ankara, TÜRKIYE

Geliş Tarihi : 27.09.2009
Kabul Tarihi : 29.01.2010

## Yazışma Adresi <br> Correspondence

## Günay ÖzDEMiR <br> Gazi Üniversitesi,

Sağlık Bilimleri Enstitüsü,
Beden Eğitimi ve Spor
Yüksekokulu,
Ankara-TÜRKIYE
dytgunay@hotmail.com

## The Assessment of the Consumer Awareness in Nutritional Support Products Usage


#### Abstract

In this study, the profile of the consumers who use nutritional support products, their consuming and awareness levels and the usage of the nutritional support products were aimed to be analyzed. 137 adult individuals ( 49 male, 88 female), who had been shopping at different agency of a private company that particularly market nutritional support products were included into the study. The average age of male participants was $36.9 \pm 11.4$ years and the average age of female participants was $43.0 \pm 13.8$ years. The questionnaires were filled by the participants with face-to-face interviews in the time period that is from January to March 2008. Body mass index (i.e. BMI) (kg/m²) for each participant was calculated in accordance with their body weight and the height measures. The data were analysed by categorizing as average and standard deviation. Chi-square, Cramer's v factor and Kruskal-wallis tests were used for the main statistical analysis in this survey. The individuals, as this study indicates, empirically use more than one product for nutritional support. On the one hand, no difference of statistical significance ( $p>0.05$ ) is come across between the genders in terms of using multi-vitamin tablets, antioxidants, herbal products, dietary products and the minerals. On the other hand, male and female displayed a considerable statistical difference from one another in terms of consuming sport products and vitamin ( $p<0.05$ ). Male tend to place a greater robustness, higher performance and better immunity as the two forthcoming goals for themselves to intake nutritional support products. When female are asked about their reasons for consuming the same sort of products, increasing the immunity comes as second to achieving a higher robustness, as slowing down the traces of aging comes as the third reason after them within the order of importance.


Key Words: Nutritional support products, nutrition, consumer.

## Tüketicilerin Beslenme Destek Ürünü Kullanim Bilincinin Değerlendirilmesi

Bu çalışmada, beslenme destek ürünü kullanan tüketici profilinin özellikleri, beslenme destek ürünü kullanım durumları ve bilinç düzeyleri saptanmaya çalışılmıştır. Çalışmaya, beslenme destek ürünü satışı yapan özel bir firmanın Ankara'da bulunan şubelerinden alışveriş yapan yetişkin 137 birey (49 erkek, 88 kadın) katılmıştır. Katılımcıların yaş ortalaması erkekler için, $36.9 \pm 11.4$ yıl, kadınlar için $43.0 \pm 13.8$ yıldır. Katılımcılara Ocak-Mart 2008 tarihleri arasında yüz yüze görüşme tekniği ile anket doldurulmuş boy uzunluğu ve vücut ağırlıkları ölçülerek, beden kütle indeksi (BMI) ( $\mathrm{kg} / \mathrm{m}^{2}$ ) hesaplanmıştır. Elde edilen verilerin ortalama ve standart sapma değerleri alınarak, bazı verilerde kikare testi, kruskal- wallis varyans analiz yöntemleri ve Cramer's V katsayısı kullanılmıştır. Yapılan çalışma sonucunda; bireylerin birden fazla destek ürünü kullandıkları saptanmıştır. Multi-vitamin tableti, antioksidan, bitkisel ürün, diyet ürünü ve mineral kullanımı açısından cinsiyetler arasında farklılık görülmezken ( $p>0.05$ ), spor ürünleri ve vitamin kullanımı açısından anlamlı bir farklılık $(p<0.05)$ olduğu saptanmıştır. Vitamin kullanımının kadın bireylerde, spor ürünleri kullanımının ise erkek bireylerde daha fazla oranda kullanıldığı belirlenmiştir. Beslenme destek ürünü kullanım amaçları sorulduğunda, erkeklerde ilk üç sırayı zindelik, performansı artırmak ve bağışıklığı artırmak kadınlarda ise, bağışıklığı artırmak, zindelik ve yaşlanmayı geciktirmek almıştır.

Anahtar Kelimeler: Beslenme destek ürünü, beslenme, tüketici.

## Introduction

Nutritional supplements are defined as ones that enable the consumption of one or more nutrient in addition to daily diet. They can be found in forms of pill, tablet, capsule, liquid and powder (1).

Encompassed within this definition of nutritional support products is herbal supplements, vitamins, minerals, aminoacids, fish oil, and sort of supplements such as glucosamine and chondroitin, which are not nutritions and are not in connection with nutrition but they are still categorized as nutritional supplements (2). Nutritional support
products are as follows: Carbohydrates, protein, fat, mineral, vitamin, medicinal herbs and nectars. As many researches also evidence that these sorts of foodstuff are generally preferred by elder peoples, female, ones with a high salary or high education level, ones who strictly believe in their value of remedying certain diseases, and athletes from both genders (3,4); Yet, few of these products had supported with scientifical study. In fact, many of them might be even harmful. Under certain conditions, the athletes may indeed benefit from energyboosting gels, liquids and tablets, proteins, and aminoacid supplements. Nutritional support products can help supply whatever is insufficient inside the human body in case of a nutritional deficiency. However, seldom the ones who use these products are actually equipped with relevant information about them (3).

Since these products have been often taken in place of medicine and with the view of healing certain health conditions, rather than for their probable pharmacological effects, they can indeed help ease certain complaints of those who use them $(1,5)$. They have a popular field of application among those who practices physical activities. In that, they are employed as to achieve a larger mass of muscle and longer durability (6).

At this study, the profile of consumers who use nutritional support products, their consuming and the awareness levels regarding the nutritional support products was aimed to be thoroughly analyzed.

## Materials and Methods

This study took place in between January and March 2008 in Ankara (Turkey), when 137 individuals (49 male and 88 female) as customers went to five different agency of a private company to make shopping. The questionnaire were given by researcher dietician and asked to fill during the face-to-face interviews to participants. The questionnaire has thirty questions. The questions have anthropometric measures (body weight and height measures), ilness state, education state, nutritional support products use and awereness, activity levels. All participants are informed about the content of the study and joined the experiment with their own free will.

The height and weight values for the consumers were measured by a dietician who also conducted the survey, and then the BMI for each participant was calculated. The measurement of height is completed with a meter made up of non-elastic plastic that has a 150 cm of length and 1.5 cm of width. Before the measurement started, each individual is put into a particular position facing back, barefoot, arms stuck to body, and head is on the Frankfurt Plane. Philips hf 351 digital bascule capable of detecting as light as 100 g was put to use for measuring body weight. BMI was calculated by dividing the body weight in kind of kilogram to the square of the stature in kind of meter $\left(B M I=\mathrm{kg} / \mathrm{m}^{2}\right)$.


According to the giving answers to questions about the usage of the nutritional support products, seven different categories (multivitamin tablets, antioxidants, herbal products, dietary products, sporting products, vitamins and minerals) were established according to the ingredients of different nutritional support products.

The statistical assessment of the data used SPSS 11.5 statistics package programme. For the categorical and defining variables such as quantitative variables, age, stature, bodyweight, BMI, standard deviation and average values were applied. In order to determine the inter-relationship among the different age-dependent awareness levels, kruskal-wallis variance analysis was chosen. For the levels of awareness that rest on gender and education Cramer's $V$ coefficient was found to be convenient to use. Chi-squared test are used to asses certain data so much. Tables percentages are assessed on the basis of line (The percentage values given here will be valid also for the Tables 1-5).

## Results

Almost a half of the participants (48.9\%) were at the age of somewhere between 20 and 39 years. $43.1 \%$ of the participants' age was between 40 and 59 years, and above 60 years was $8 \%$. The participants' average of age is $36.9 \pm 11.4$ years for men and $43.0 \pm 13.8$ years for female. The participants' average of were $176.8 \pm 6.7 \mathrm{~cm}$ for male and $163.6 \pm 6.2 \mathrm{~cm}$ for female. The average bodyweight were $81.6 \pm 12.6 \mathrm{~kg}$ for male and $64.2 \pm 9.9 \mathrm{~kg}$ for female. And, finally, BMI averages were $26.1 \pm 4.1$ $\mathrm{kg} / \mathrm{m}^{2}$ for male and $24.0 \pm 3.9 \mathrm{~kg} / \mathrm{m}^{2}$ for female. And, the BMI for all of these participants was within the normal borders.

The conditions of the used nutritional support products by the participants are shown within the Table 1. Accordingly, the difference between two genders is insignificant in terms of using multi-vitamin tablets, antioxidant, herbal and dietary products, and finally that of mineral ( $p>0.05$ ). On the other side, the difference between the gender in consuming sporting products and vitamins is significant ( $p<0.05$ ). While the use of nutritional support for sporting purposes is more common among the men than that of female ( $44 \%$ for male, $56 \%$ for female of multivitamins using fifty participants), the use of vitamin is in contrast more common among female ( $89.4 \%$ for male, $10.6 \%$ for female of sports products using 19 participants), ( $\mathrm{p}<0.05$ ) (Table 1).

Table 1. The conditions of nutritional support products usage according to genders.

| Conditions of nutritional support products usage | $\begin{gathered} \text { Male } \\ (n=49) \end{gathered}$ |  | Female$(n=88)$ |  | $\begin{gathered} \hline \text { Total } \\ (n=137) \end{gathered}$ |  | $p$ value |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | n | \% | n | \% | n | \% |  |
| Multi-vitamin tablets | 22 | 44.0 | 28 | 56.0 | 50 | 100.0 | 0.12 |
| Antioxidants | 18 | 31.6 | 39 | 68.4 | 57 | 100.0 | 0.38 |
| Herbal Products | 24 | 36.9 | 41 | 63.1 | 65 | 100.0 | 0.78 |
| Dietary products | 4 | 20.0 | 16 | 80.0 | 20 | 100.0 | 0.11 |
| Sporting products | 17 | 89.4 | 2 | 10.6 | 19 | 100.0 | 0.00* |
| Vitamins | 8 | 40.0 | 32 | 60.0 | 40 | 100.0 | 0.01* |
| Minerals | 4 | 30.7 | 9 | 69.3 | 13 | 100.0 | 0.69 |

* $p<0.05$

The levels of age groups differing among the participants, as a factor within the use of nutritional support products, not significant difference $(p>0.05)$
(Table 2). On the other hand, statistical difference from others in terms of consuming sport products among age groups ( $\mathrm{p}<0.05$ ).

Table 2. The conditions of nutritional support products usage according to age groups.

|  | $20-39$ years |  | $40-59$ years |  | $\geq 60$ |  | Total |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Nutritional Support Products | n | $\%$ | n | $\%$ | n | $\%$ | n | $\%$ | p value |
| Multi-vitamin tablets | 26 | 52.0 | 20 | 40.0 | 4 | 8.0 | 50 | 100 | 0.78 |
| Antioxidants | 23 | 40.4 | 28 | 49.1 | 6 | 10.5 | 57 | 100 | 0.26 |
| Herbal products | 29 | 44.6 | 30 | 46.2 | 6 | 9.2 | 65 | 100 | 0.74 |
| Dietary products | 14 | 70.0 | 6 | 30.0 | 0 | 0.0 | 20 | 100 | 0.07 |
| Sporting products | 14 | 73.7 | 5 | 26.3 | 0 | 0.0 | 19 | 100 | $0.04^{*}$ |
| Vitamins | 16 | 40.0 | 20 | 50.0 | 4 | 10.0 | 40 | 100 | 0.43 |
| Minerals | 5 | 38.5 | 7 | 53.8 | 1 | 7.7 | 13 | 100 | 0.73 |

* $p<0.05$

The average amount of consumed nutritional support products is $34.0 \pm 52.2$ monthly. In terms of average expenditures made for buying these products, participants said to have spent $90.1 \pm$ 84.1 TL (range 10500 TL ) for per month.

The levels of professional status differing among the participants, as a factor within the use of nutritional support products, not significant difference ( $p>0.05$ ) (Table 3).

Table 3. The conditions of nutritional support products usage according to professional status.

| Nutritional Support Products | Employer |  | Officer |  | Professional service |  | Pensioner |  | Housewife |  | Student |  | Health staff |  | Athlete |  | Total |  | $p$ value |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | n | \% | n | \% | n | \% | n | \% | n | \% | n | \% | n | \% | n | \% | n | \% |  |
| Multi-vitamin tablets | 1 | 2.0 | 7 | 14.0 | 26 | 52.0 | 6 | 12.0 | 3 | 6.0 | 3 | 6.0 | 2 | 4.0 | 2 | 4.0 | 50 | 100 | 0.57 |
| Antioxidants | 2 | 1.8 | 10 | 17.5 | 22 | 38.6 | 13 | 22.8 | 4 | 7.0 | 2 | 3.5 | 4 | 7.0 | 1 | 1.8 | 57 | 100 | 0.35 |
| Herbal Products | 0 | 0.0 | 9 | 13.8 | 32 | 49.2 | 12 | 18.5 | 4 | 6.2 | 3 | 4.6 | 3 | 4.6 | 2 | 3.1 | 65 | 100 | 0.55 |
| Dietary products | 1 | 5.0 | 3 | 15.0 | 10 | 50.0 | 2 | 10.0 | 0 | 0.0 | 3 | 15.0 | 1 | 5.0 | 0 | 0.0 | 20 | 100 | 0.82 |
| Sporting products | 0 | 0.0 | 3 | 15.8 | 10 | 52.6 | 0 | 0.0 | 1 | 5.3 | 1 | 5.3 | 1 | 5.3 | 3 | $\begin{gathered} 15 . \\ 8 \end{gathered}$ | 19 | 100 | 0.86 |
| Vitamins | 1 | 2.5 | 8 | 20.0 | 17 | 42.5 | 10 | 25.0 | 2 | 5.0 | 1 | 2.5 | 1 | 2.5 | 0 | 0.0 | 40 | 100. | 0.62 |
| Minerals | 1 | 7.7 | 1 | 7.7 | 7 | 53.8 | 3 | 23.1 | 0 | 0.0 | 0 | 0.0 | 1 | 7.7 | 0 | 0.0 | 13 | 100 | 0.31 |

There was no significant difference among the participants' conditions of nutritional support products usage according to education ( $p>0.05$ ) (Table 4).

The first three reasons for men to use this sort of products are robustness, performance and immunity. As for female, three most critical reasons to consume the products of nutritional support are to strengthen
immunity, boost robustness and decelerate the effects of aging. This study detected a well-defined motivational difference ( $p<0.05$ ) among female participants who said to have used these products in order to "merely embolden immunity, reduce the speed of aging, and lose weight" (Table 5).

Table 4. The conditions of nutritional support products usage according to education.

|  | Primary School |  | High School |  | University |  | Total |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Nutritional Support Products | n | $\%$ | n | $\%$ | n | $\%$ | n | $\%$ | p value |
| Multi-vitamin tablets | 0 | 0 | 8 | 16.0 | 42 | 84.0 | 50 | 100 | 0.57 |
| Antioxidants | 1 | 1.8 | 9 | 15.8 | 47 | 82.5 | 57 | 100 | 0.35 |
| Herbal products | 1 | 1.5 | 9 | 13.8 | 55 | 84.6 | 65 | 100 | 0.55 |
| Dietary products | 0 | 0 | 2 | 10.0 | 18 | 90.0 | 20 | 100 | 0.82 |
| Sporting products | 0 | 0 | 3 | 15.8 | 16 | 84.2 | 19 | 100 | 0.86 |
| Vitamins | 0 | 0 | 4 | 10.0 | 36 | 90.0 | 40 | 100 | 0.62 |
| Minerals | 0 | 0 | 0 | 0 | 13 | 100 | 13 | 100 | 0.31 |

Table 5. The reasons of nutritional support products usage according to gender.

| The reasons of nutritional support products usage | $\begin{gathered} \text { Male } \\ (n=49) \end{gathered}$ |  | Female ( $\mathrm{n}=88$ ) |  | $\begin{gathered} \text { Total } \\ (n=137) \end{gathered}$ |  | $P$ value |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | n | \% | n | \% | n | \% |  |
| Robustness | 26 | 33.3 | 52 | 66.7 | 78 | 100.0 | 0.49 |
| To increase immunity | 17 | 23.3 | 56 | 76.7 | 73 | 100.0 | 0.00 * |
| To decrease the speed of aging | 5 | 14.3 | 30 | 85.7 | 35 | 100.0 | 0.00 * |
| To uplift performance | 20 | 46.5 | 23 | 53.5 | 43 | 100.0 | 0.07 |
| To relax | 6 | 20.7 | 23 | 79.3 | 29 | 100.0 | 0.05 |
| To prevent cancer | 6 | 26.1 | 17 | 73.9 | 23 | 100.0 | 0.29 |
| To build-up body | 10 | 90.9 | 1 | 9.1 | 11 | 100.0 | 0.00 |
| To lose weight | 4 | 15.4 | 22 | 84.6 | 26 | 100.0 | 0.01 * |
| To improve memory | 0 | 0.0 | 3 | 100.0 | 3 | 100.0 | 0.19 |
| To achieve a healthy life | 5 | 41.7 | 7 | 58.3 | 12 | 100.0 | 0.65 |
| To ease arthralgias | 2 | 25.0 | 6 | 75.0 | 8 | 100.0 | 0.51 |
| To gain weight | 1 | 100.0 | 0 | 0.0 | 1 | 100.0 | 0.18 |
| To protect against menopause | 0 | 0.0 | 3 | 100.0 | 3 | 100.0 | 0.19 |

This research included 13 participants (11 children and two female) who reported to have actively exercised. The most popular products among this select of people, in order of priority, are sporting products, herbal products and multi-vitamin tablets.

The gender, education and age in relevance to the kinds of the level of awareness toward the products of
nutritional support were evaluated through the agency of eight questions directed to the participants. The number of respondents who answered these eight questions as either "correct," or "I don't know," or "wrong" in relation to gender is posited within the Table 6.

Table 6. The influence of gender and education over the individuals' level of awareness about the nutritional support products.

| QUESTIONS |  | Male <br> (n) | Female <br> (n) | GENDER |  | EDUCATIONAL QUALITY |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Cramer's V | $p$ value | Cramer's V | $p$ value |
| 1. The use of additional | Correct | 30 | 55 |  |  |  |  |
| vitamin mineral is | I don't know | 6 | 19 | 0.156 | 0.190 | 0.155 | 0.16 |
| necessary | Wrong | 13 | 14 |  |  |  |  |
| 2. Vitamins are energy source | Correct | 30 | 64 |  |  |  |  |
|  | I don't know | 4 | 7 | 0.130 | 0.312 | 0.099 | 0.61 |
|  | Wrong | 15 | 17 |  |  |  |  |
| 3. Antioxidants have no effect over the system of immunity | Correct | 4 | 10 |  |  |  |  |
|  | I don't know | 12 | 19 | 0.056 | 0.805 | 0.112 | 0.48 |
|  | Wrong | 33 | 59 |  |  |  |  |
| 4. Herbal products are harmless | Correct | 12 | 8 |  |  |  |  |
|  | I don't know | 4 | 13 | 0.219 | 0.038* | 0.150 | 0.18 |
|  | Wrong | 33 | 67 |  |  |  |  |
| 5. Everybody can use multi-vitamins | Correct | 16 | 29 |  |  |  |  |
|  | I don't know | 10 | 12 | 0.092 | 0.561 | 0.113 | 0.48 |
|  | Wrong | 23 | 47 |  |  |  |  |
| 6. It is not urgent to turn to a doctor for advice before starting any nutritional support product | Correct | 8 | 13 |  |  |  |  |
|  | I don't know | 6 | 8 | 0.057 | 0.799 | 0.100 | 0.60 |
|  | Wrong | 35 | 67 |  |  |  |  |
| 7. The dosage of nutritional support products have no importance for use | Correct | 0 | 2 |  |  |  |  |
|  | I don't know | 1 | 4 | 0.112 | 0.421 | 0.066 | 0.88 |
|  | Wrong | 48 | 82 |  |  |  |  |
| 8. The excessive use of these products damage don't our health. | Correct | 1 | 2 |  |  |  |  |
|  | I don't know | 3 | 3 | 0.064 | 0.757 | 0.099 | 0.60 |
|  | Wrong | 45 | 83 |  |  |  |  |

* $\mathrm{p}<0.05$

In terms of gender, only the answers given for the question of "whole types of herbal products are harmless?" depicted a correspondent relationship between the gender and the level of awareness, that is, was statistically significant, yet still ignorable ( $p<0.05$ ) (Table 6). In terms of age, as this this study depicted, it had no impact over the individuals' level of awareness toward using the nutritional support products ( $p>0.05$ ).

A predominant share from all participants (67.9\%) said to have felt much better after using nutritional support product as a response to the question of "what kind of effect the nutritional support products create over the general health conditions?" $9.5 \%$ reported to feel ambiguous or indefinite when they used these products (Table 7). Only 9 respondents had a negative opinion about the probable effects of the products of nutritional support over their own health conditions; for them, they came with various side-effects. Three of the nine complaints were about the allergic reactions, which these three participant believed was triggered by this kind of products. Three of them reported to have a greater appetite, as another two suffered gastrological diseases, as a side-effect of using support products. Finally, the
one person was obviously enduring hypertension, which he believed was a side-effect of nutritional support products

Table 7. The opinions of the participants according to the resultant effects of nutritional support products usage

| The effect of nutritional support products | n | $\%$ |
| :--- | :---: | :---: |
| I benefited from it, I therefore feel better | 93 | 67.9 |
| It makes me feel well in times | 28 | 20.4 |
| It has no effect to mention | 3 | 2.2 |
| I have no idea | 4 | 2.9 |
| It has harmful effect | 9 | 6.6 |
| Total | 137 | 100.0 |

The percentage of those participants who said to have started this type of products solely with their own decision is $44.5 \%$. The ones who began to use support products is $28.5 \%$ and $16.8 \%$ of the respondents decided to use them after the encouragement of a company official. Finally, for only $10.2 \%$, the weight of a friend's
advice was the most critical factor to start using the products of nutritional support.

The answer given to the question of "where would you prefer to purchase support products?" was all same among all participants. The primary source to obtain them, for all respondents, was a sort of store offering these products to the marketplace. The pharmacies come right after these specific stores for the participants where they can buy support products, if the first option is not available. In the eyes of all respondents, herbalists were not seen as an eligible place to attain nutritional support products.

## Discussion

Almost a half of the participants (48.9\%) were at the age of somewhere between 20 and 39 years. $43.1 \%$ of the participants' age was between 40 and 59 years. The ones whose age was above 60 years is $8 \%$. And, the BMI for all of these peoples was within the normal borders. According to the data provided by NHANES 1999-2000 Report, multivitamin-mineral supplement is mostly consumed by those who are either between the ages of 40 and 59 years, or above 60 years (9). The findings of this study draw a parallel line with that of the NHANES 1999-2000 Report.

As this study puts forward, each person uses more than one type of nutritional support product. There can be found no difference between two genders in terms of consuming the following products of nutritional support: multi-vitamin tablets, antioxidants, herbal and dietary products, and mineral ( $p>0.05$ ). When it comes to using sporting products and vitamin, this study found out a telling difference between genders related to the consumption level these said products ( $p<0.05$ ). As this survey indicates, female participants favored the former product (vitamin) more that male participants did. On the other side, the level of sporting products' consumption among male was much higher than it was among female. As a research that aimed at analyzing the female behavior (between 12 and 49 years) in regard of using nutritional support products brings it to the day light, female tend to consume Vitamin $A, B_{6}, B_{12}$ and Vitamin $C$, folic acid, iron, zinc less than what is necessary, and thus need supplement (10). According to the scientific results of yet another study, which conducted a survey with 680 students continuing their higher education within four different universities, $47 \%$ of female students and $50.7 \%$ of male students have been using nutritional supplements. The ones, the same study suggests, who uses the iron supplements form the $28.9 \%$ of male populace, and $32.4 \%$ of female populace (11). Within another research over the students that make regular exercises, $28 \%$ of 328 students were found to have used creatine (12). A research made in the US by incorporating 1539 individuals in the surveys found out: from the year of 1990 to 1997, the ratio of $33.8 \%$ for those who used herbal products and some other products of nutritional support climbed up to a $42.1 \%$ (13).

Within a different study that analyzed 319 participants over the age of 60 years, as the $72.7 \%$ of them were female, $86 \%$ of these 319 participants were found to have taken ' $a$ ' supplement. Among the types of support products that were used most extensively by the participants, come first the multivitamin, mineral tablets, calcium, the Vitamins of C, D, E, fish oil, and glucosamine (1). As a result of the wide-spread use of nutritional support products among the consumers. And this study results similar with another study.

As one of the findings this study put in place, the average amount of time in which the participants said to have used supplementary products was $34.0 \pm 52.2$ for per month, and $2.1 \pm 1.4$ for per day. The other study, $47 \%$ of adult supplement users took just one supplement; $55 \%$ of female and $63 \%$ of adults aged $\geq 60$ years took more than one (14). According to the results of a different study, which included 18.346 female, the rate of femalewho used 2-3 nutritional support products was $26 \%$ in 1986, but reached to a rate of $38 \%$ by the year of 2004. Each year in the United States, over \$20 billion is spent on dietary supplements, a significant proportion of which are marketed as weight-loss and athletic-performance-enhancement products (15). The rate of those who did not use any supplement decreased from $35.5 \%$ to 14.6 within the same period of time (16).

Forty-four and half percent of the participants reported to have used nutritional support products as results of their own free will. Twenty-five and half percent of these participants was obviously following the recommendation of a doctor in starting to use supplements. Only $16.8 \%$ of all participants was convinced by a company official to start supplements. Finally, the rate for those who begin to take supplementary products under the influence of their friends was $10.2 \%$. When 130 individuals ( 75 male and 55 female) doing exercises on regular base, were asked about their major sources of information in regard of the use of nutritional support products; $58 \%$ of them left the question unanswered, $17 \%$ of them pointed out their couch as the main source of information, $13 \%$ of the respondents said to have been informed by a dietician, $21 \%$ of them apparently turned to their friend form the team for relevant information, and the remaining 10\% acquired information from various journals and periodicals (17). Within a separate study, the participants directed the question of the main incentives that drove respondents to commence on using supplements. The respondents were apparently motivated by the causes of recovering their poor health conditions or preventing possible diseases. In certain cases, they even failed to point out a descent impulse by which they began to use supplements. If there was anyone who recommended them to use supplements, they were generally doctors. But also, there some other participants who said to have taken advice for friends or some other type of medical expert (1).

Within another research that was purposed to investigate the major causes for supplements usage among the female athletes, the ones who pursued a friendly advice were as big as \%48. A portion them ( $31 \%$ ) used these supplements with the view of remedying their diseases. The couches were the critical factor in persuading $29 \%$ of athletes. Twenty five percent of of them were influenced by a nurse or dietician. Another $25 \%$ was holding the advice of doctor in using the products of nutritional support. Twenty-four percent of them began to use supplements in a bid to complete their insufficient diet. To boost the performance among the female athletes was the major drive for a $19 \%$. Seventeen percent of them saw a merit in using nutritional support products as means of keeping diseases away. Finally, a small percentage of them (7\%) turned to supplements so as to build a muscular body. As for the male athletes, $43 \%$ employed supplements to better their level of performance. Tirty-six percent of them were trying to achieve adding more muscles in using supplements. Family and friends were the major source of inspiration for a $36 \%$ to use support products. Twenty-nine percent of them used supplements to gain more power. The couch was prominent source for male athletes to commence on using supplements ( $25 \%$ ). The recommendation of a nurse or dietician convinced $22 \%$ of athletes to use nutritional support products. However, a recommendation coming from a doctor was needed only $5 \%$ of male athletes to start using supplements. Finally, $18 \%$ of them to beat their diseases, and $14 \%$ of them to escape from any diseases, began to use the products of nutritional support (18). For those who merely exercise, apart from those athletes who professionally practice sport, the main cause of taking supplement was to build up additional muscles or increase durability (5).

Within a different research involving 51 female between the ages of 25 and 45 years, the main incentives to take supplements were as follows: 60.8 for protection against diseases, $54.9 \%$ for acquiring more energy, $31.4 \%$ for following a friend's advice, $2.5 \%$ for healing diseases (18). Extracting the finding in common among all these researches, male tend to use nutritional support products to obtain more mass of muscle and a better performance; while female rather use these products for the purpose of removing diseases and increasing the immunity system of their metabolism. And, consequently, this study joins them in many aspects of using supplementary products.

When one examines the link between the educational and informational background of individuals and the way they use the products of nutritional support, this link appears to be quite weak and a statistically insignificant ( $p>0.05$ ). When it comes to a possible tie between genders a use of supplement, a correlation of low significance could found only for the question of "all herbal products are harmless" ( $\mathrm{p}<0.05$ ).

The participants' nutritional support products expense is difference (10-500 TL/month). According to a different
research, $28 \%$ of 51 female has been expending monthly 10 dollars for support products, while $20 \%$ of them spent more than four times of this amount (more than 40 dollars) within each month (18).

At this study, the levels of education differing among the participants, as a factor within the use of nutritional support products not significant difference ( $p>0.05$ ). A other study, significant age group, and educational status related to supplement use for older male were smoking status, and vegetarian status were significant factors for female (19).

Within a research that females using supplementary product more than four times in a single month, $60.8 \%$ of them was found to have been buying support products from pharmacy, $59.8 \%$ from particular places known for selling nutritional support products, $35.3 \%$ of them chose to buy them from stores (18). Results have many joint findings that this study also tries to prove. On a separate note, most of the consumers purchase the supplements they use from reliable places, which should be deemed as a pleasing finding.

When the question of "what kind effect you think the supplementary products have over the health conditions," $67.9 \%$ of respondents said to have felt much, while $9.5 \%$ was uncertain about the impact of the products. 9 respondents had a negative view of these products' effects. They created side-effects in their regard. Three of them were maintained to have produced allergic reactions. Three of them were reported to have increased appetite. Another two gave rise to the intestine problem. Finally one of them was about a worsened hypertension. In regard of a separate research, which lasted for five years of monitoring and included 161808 female who were just within their post menopause period, for a $41.5 \%$ of these female who regularly used multivitamin tablets, the risk of coronary-heart diseases were observed to have diminished within the rest of their life span (20). For 41 female, whose BMI was higher that what was considered to be an indication of health, was recommended to start taking $40 \mathrm{mg} /$ day ephedra, 100 $\mathrm{mg} /$ day caffeine along with minerals, vitamin and any supplement that comprises of $n-3$. Within the group that regularly used supplements, the loss of weight and the decrease within the values of blood, glucose and cholesterol were greater in comparison with the control group (21). In most of the researches, it was determined; antioxidants are beneficial in preventing the emergence and the spread of cancer and tumor; creatine may really help boost the performance during the exercises; ginseng can effectively recover human memory $(22,23)$.

## Conclusions

The nutritional support products should be used according to the directions of specialists such as doctors and dieticians. It should not be forgotten that the usage of preparations that are sold without prescription and control might be dangerous when they are taken with high dose.

## References

1. Weeden AM. Associations Among Dietary Supplement Use, Dietary Intake, and Chronic Health Conditions of Older Adults, Department of Human Nutrition College of Human Ecology, Kansas State University, Kansas: 2008.
2. ADA Reports. Practice Paper of the American Dietetic Association: Dietary Supplements J Am Diet Assoc 2005; 105: 460-468.
3. Ersoy G. Spor performansı için ergojenik yardım ve besin destekleri. VI. Uluslar arası Beslenme ve Diyetetik Kongresi, Antalya: 2008.
4. Erden BF, Tanyeri P. Ülkemizde Vitamin ve Mineral Eklentilerin Akılcı Kullanımı. Sted 2004; 13: 411-414.
5. Petróczi A, Naughton DP. Supplement use in sport: is there a potentially dangerous incongruence between rationale and practice? J Occup Med Toxicol 2007; 2: 1-6.
6. Babu KM, McCormick MA, Dabaty P, et al. Pediatric Dietary Supplement Use-An Update. Clin Ped Emerg Med 2005; 6:85-92.
7. Insel P, Turner RE, Ross D. Nutrition, Secon edition, American Dietetic Association, Jones and Bartlett Publishers, Canada: 2004.
8. Fink HH, Burgoon LA, Mikesky AE. Practional Applications in Sports Nutrition, Jones and Bartlett Publishers, Canada: 2006.
9. Rock CL. Multivitamin-multi-mineral supplements: who uses them? Am J Clin Nutr. 2007; 85: 277-279.
10. Mejía-Rodríguez F, Sotres-Alvarez D, Neufeld LM, et al. Use of nutritional supplements among Mexican women and the estimated impact on dietary intakes below the EAR and above the UL. J Am Coll Nutr 2007; 26: 16-23.
11. Montgomery KM; Factors that influence the knowledge and use of dietary supplements and ergogenic aids by college student- athletes, University of South Carolina, Columbia: 1993.
12. Grandjean AC, Ruud JS. Dietary supplements and athletes. Current Opinion in Orthopedics 2002; 13: 122127.
13. Fraunfelder FW. Ocular Side Effects from Herbal Medicines and Nutritional Supplements. Am J Ophthalmol 2004; 138: 639-647.
14. Radimer K, Bindewald B, Hughes J, et al. Dietary Supplement Use by US Adults: Data from the National Health and Nutrition Examination Survey, 1999-2000. Am J of Epidemiol 2004; 160: 339-349.
15. Thomas JE, Munir JA, McIntyre PZ, Ferguson MA. STEMI in a 24 -year-old man after use of a synephrine-containing dietary supplement: a case report and review of the literature. Tex Heart Inst J 2009; 36: 586-590.
16. Park K, Harnack L, Jacobs DR. Trends in Dietary Supplement Use in a Cohort of Postmenopausal Women from lowa. Am J Epidemiol 2009; 169: 887-892.
17. Munoz ER. Dietary supplement use among junior college athletes. A thesis presented to The faculty of the department of kinesiology, San Jose State University, California USA: 2008.
18. Miller CK, Russell T. Knowledge of dietary supplement label information among female supplement users. Patient Educ Couns 2004; 52: 291-296
19. Sebastian RS, Cleveland LE, Goldman JD, Moshfegh AJ. Older adults who use vitamin/mineral supplements differ from nonusers in nutrient intake adequacy and dietary attitudes. J Am Diet Assoc 2007; 107: 1322-1332.
20. Neuhouser ML, Wassertheil-Smoller S, Thomson C, et al. Multivitamin use and risk of cancer and cardiovascular disease in the Women's Health Initiative cohorts. Arch Intern Med. 2009; 169: 294-304.
21. Hackman RM, Havel PJ, Schwartz HJ, et al. Multi-nutrient supplement containing ephedra and caffeine causes weight loss and improves metabolic risk factors in obese women: a randomized controlled trial. Int J Obes 2006; 30: 1545-1556.
22. Başer HC. Industrial Plants as Sources of Dietary Supplements. Dietary Supplements of Plant Origin, Taylor and Francis, London, 2003.
23. Ersoy G. Besinsel Ergojenik Yardım, 2. baskı, Ata ofset, Ankara: 2006.
