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IDENTIFYING THE LEVEL OF PROBIOTIC PRODUCTS CONSUMPTION OF NAMIK KEMAL UNIVERSITY STUDENTS

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Abstract

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This research was done in order to identify the level of probiotic products consumption of university students with the help of randomly chosen 315 female and 275 male students – totally 590 students – who are studying at Namık Kemal University in 2011-2012 spring terms. 61.7% of the participants know the probiotic products, 71.4% of the female students and 50.5% of the male students know the probiotic products. It was found that there was an important relationship between gender and probiotic product knowledge (($\chi 2$) = 27.094; P < 0.05). 42.2% of the participants consume probiotic products, 47.3% of the female students and 36.1% of the male students consume probiotic products. There is an important relationship between gender and probiotic product consumption (($\chi 2$) =7.522; P<0.05). 38.5% of the participants do not consume probiotic products because they don't believe that they are healthy, 32.1% of the participants find them tasteless, 11.2% of the participants believe that they are harmful, and 18.2% of the participants find them healthy but expensive.

In this aim, it was aimed to call attention to probiotic products, give information about their benefits to students and increase their consumption.

Key words: Probiotic products, consumption, survey, undergraduated

Indroduction

Consumers are more aware and concerned about their lifestyle than ever before. This has increased demand for foods that promote health and wellness, such as functional products containing probiotic microorganisms, which have a beneficial effect on the balance of intestinal microbiota (Martins et al., 2013). Probiotics have positive effects on the composition of intestinal microbiota and overall health. As a result, their consumption has increased (Granato et al., 2010). The most common probiotic microorganisms used and marketed in food worldwide belong to the genera *Lactobacillus* and *Bifidobacterium* (Champagne et al., 2011; Saulnier et al., 2009). Most probiotic products are marketed in the form of yogurt and fermented milk. However, there is a growing interest in developing non-dairy probiotic products (Ranadheera et al., 2010). Although the large investigation for the health benefits, information on probiotic species, a specific strain-therapeutic application, and sufficient dosages, is not sufficiently studied to allow practical and rational consumption. Moreover, prebiotic oligosaccharides although provided curative and nutritional values, they are poorly understood in regard to their origin, the processes employed to generate them, their fermentation profiles, and dosages required for health effects (Saad et al., 2013). Economic and cultural factors may also negatively affect the consumption of probiotic dairy products, since most are fermented foods. Thus, the development of non-dairy probiotic products, including food matrices from fruit, vegetables and cereals has a promising future (Peres et al., 2012).

Materials and Methods

This questionnaire study was done in order to identify the level of probiotic products consumption of university students with the help of randomly chosen 315 female and 275 male students – totally 590 students – who are studying at Namik Kemal University in 2011-2012 spring terms. The stu-

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dents completed the questionnaire in the classroom and they are picked up by the teachers. 61.1% of these students are between the ages of 18 and 20, 35.0% of them are between 21 and 24, and 3.9% of the students is over 25 years old. 27.6% of the participants are faculty students, 68.8% of them are vocational school students, and 3.6% of them are college students. The clearness and validity of the questions were tested by making the necessary corrections with the help of 10 participants (Badrie et al., 2004). The questionnaire results were analyzed in Chi-square ($\chi 2$) importance test statistical analysis method with the help of SPSS V.18 Statistical Packet Program.

Results and Discussion

The answers for the questions directed to find out whether the participants have knowledge on probiotic products are presented in Table 1. 61.7% of the participants stated that they had knowledge on probiotic products. However, it was seen that female students had statistically much more knowledge than male students. In the same way, it was detected that female students had much more knowledge on the benefits of probiotic products. The rate of the students who don't consume probiotic products is high (58.8%). It was understood that male students fell considerably left behind the female students in terms of probiotic product consumption habits.

Aydin et al. (2010) detected that the 54.8% of the participants at Isparta Suleyman Demirel University didn't have knowledge on probiotic products in a research which was done in order to identify the consumption of probiotic products and the recognition level of the term "probiotic". This rate is higher in the research done by us. In Aydin and coworkers (2010)'s research, 21.5% of the male students and 27.3% of the female students stated that they consumed probiotic products. In the research which was done by Yabanci and Simsek (2007) about the consumption of probiotic products of university students, it was stated that 40% of the male students and 69.2 % of the female students had knowledge on probiotic products; 29.2% of the male students and 42.5% of the female students consumed probiotic products. The rates obtained in this study were higher than the other two studies. Consistent with other studies (Verbeke, 2005), gender and age were not significantly associated with the degree of knowledge and frequencies of FF consumption (Annunzıata and Vecchio, 2011).The majority of the students who expressed that they knew something about probiotic products said that they got the information from all kinds of broadcast sources (45.6%). Television and radio channels follow it (25.1%). It was seen that there was no difference between female and male students on this subject. The number of students who consume these products a few times a week is the highest with a rate of 38.2%. The rate of students who say "I consume these products whenever I remember." is quite high, too (22.0%). There was no important difference between female and male students in terms of consumption frequency. 43.6% of the participants stated that they had consumed probiotic products for a long time (5 years or more). There was no big difference between male and female students. Moreover, an important rate of students expressed that they liked eating probiotic products (82.2%). The number of students who say that advertisements have impact on the consumption of probiotic products is quite high (67.1%). It was seen that advertisements affected female students more. Yabanci and Simsek (2007) pointed out that 79.1% of the participating students were affected by the advertisements. The rate of the participants consuming probiotic products alone is 42.5%.

Table 1
Knowledge of the Students on Probiotic Products and Their Consumption Habits

	Total, %	Female, %	Male, %	χ^2	df
Do you have information about probiotic products?					
Yes	61.7	71.4	50.5	27.09*	1
No	38.3	29.6	49.5		
Do you know the benefits of probiotic products?					
Yes	46.6	56.2	35.6	24.93*	1
No	53.4	43.8	64.4		
Do you consume probiotic products?					
Yes	42.2	47.3	36.1	7.52*	1
No	58.8	52.7	73.9		

* Significant in P<0.05 level

Table 2
Questionnaire Findings about the Students who Have Knowledge on Probiotic Products

	Total, %	Female, %	Male, %	χ^2	df
What is the source of information?					
Book	7.3	9.3	4.6	6.68	4
Magazine	2.7	2.6	2.8		
Television and radio channels	25.1	25.2	25.0		
Internet	19.3	14.6	25.9		
All	45.6	48.3	41.7		
What is the frequency of consumption?					
a few times a week	38.2	40.4	35.2	4.03	4
Weekly	34.0	36.4	30.6		
Fortnightly	3.9	3.3	4.6		
whenever I remember	22.0	18.5	26.9		
Monthly	1.9	1.3	2.8		
Start time consumption					
Over the past year	26.6	30.5	21.3	2.9	2
The last two years	29.7	29.1	30.6		
The last five years	43.6	40.4	48.1		
Do you willingly consume?					
Yes	82.2	83.4	80.6	0.36	1
No	17.8	16.6	19.4		
Are you influenced by advertising in consumption?					
Yes	67.1	74.8	56.1	9.98*	1
No	32.9	25.2	43.9		
What is the way you consume?					
Alone	42.5	46.4	37.0	2.24	1
With other foods	57.5	53.6	63.0		
Which product do you consume?					
Yoghurt	90.7	90.7	90.7	0.00	1
Kephir	9.3	9.3	9.3		
What is the preferred type of?					
Only	45.6	41.7	50.9	2.15	1
Fruity	54.4	58.3	49.1		
Reason to consume products?					
Healty	60.2	53.6	69.4	9.13*	2
Helps digestion	35.5	43.0	25.0		
For treatment	4.2	3.3	5.6		
How you receive a positive impact?					
Useful for gastro-intestinal system,	61.8	66.9	54.6	4.01	1
Strengthens the immune system	38.2	33.1	45.4		
Prices of appropriate?					
Yes	48.6	50.3	46.3	0.41	1
No	51.4	49.7	53.7		

* Significant in P<0.05 level

There was no considerable difference between the answers of male and female students for this question. A great majority of the students (90.7%) stated that they consumed yoghurt as a probiotic product. It is quite normal for yoghurt, which is a traditional product – to be consumed. The consumption rate of kephir, which has recently started to be consumed, is quite low. There was no important difference between the preferences of males and females. The rate of the participants who prefer probiotic products plain or with fruits are close to each other. In this sense, no difference between male and female students was found. The number of students who consume probiotic products because they find them healthy is quite high (60.2%). The number of male students because of health reasons is much more than the number of female students. However, the number of female students who consume probiotic products because they support digestion is quite higher than the male students. This situation may mean that women have more digestion problems. Gursoy and Kinik (2006) state that yoghurts – one of the probiotic products in which women show interest because of constipation problems have a 5% marketshare in total dairy products market in our country. Around 60% or more of Americans either somewhat or strongly believe that certain foods and beverages can provide multiple health benefits and more than 80% say they are currently consuming or would be interested in consuming these foods and/or beverages (Ada, 2009).

The rate of students who stated that the consumption of probiotic products had positive impacts more on stomach and intestine systems is 61.8%. The remaining students stated that they strengthened the immune system. There was no considerable difference between the answers of male and female students for this question. 51.4% of the students stated that probiotic products were not expensive whereas 48.6% of them found the prices high (Table 2).

38.5% of the participants expressed that they didn't consume probiotic products because they didn't believe that they were healthy, 32.1% of the participants found them tasteless, 11.2% of the participants believed that they were more harmful than they were healthy, and 18.2% of the participants found them healthy but expensive. A reasonable price for probiotic products may increase the consumption level. Yabanci and Simsek (2007) stated in their research that 43.5% of the students didn't know probiotic products, 19.5% of them thought they were unnatural, 14.9% of them didn't need it, 12.9% of the participants found them expensive, and 8.5% of them found them tasteless. Aydin et al. (2010) pointed out in their research that 54.7% of the students didn't know probiotic products, 24.7% of them didn't need it, 10.4% of them thought they were unnatural, 5.8% of them found them tasteless, and 4.4% of the participants found them.

Conclusions

Although the consumption of probiotics and prebiotics as a functional food additives is very common around the world, it is not common in our country (Turkey). The consumption of these products many functional effects of which are known should be extended in the dairy products such as yoghurt, which appeals to the taste bud of our people (Sagdic et al., 2004).

According to the results of this research, it is possible to say that more than half of the university students know probiotic products but the consumption rate is much lower. Female students have more knowledge on probiotic products and they consume these products more than male students. The fact that female students have more digestion problems, directions of parents, and the fact that they are influenced more by advertisements may influence this situation. The fact that more than half of the participants say that they don't know the benefits of probiotic products is a sign of insufficient advertising activities. More informing activities should be done especially for university students. It is a must to support it with reasonable price policies. Consumers should also be aware of many of the promoted or implied benefits of these foods, and must realize that there is no consistent regulation or enforcement of existing regulations in the probiotic foods area (Alm, 2009).

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