

ISMC 2022  
17<sup>th</sup> International Strategic Management Conference**EVALUATION OF HEALTH PROFESSIONALS' APPROACHES IN  
STRATEGIC MARKETING OF FUNCTIONAL FOODS**Fatma Pelin Erel (a)\*, Yasemin Oraman (b)  
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**Abstract**

The functional food market is a promising and an unexplored sector in Turkey and throughout the world. The aim of this study is to evaluate the approaches of health professionals to products, recommended as functional foods, that are introduced to be a part of healthy nutrition. In addition, with the findings obtained, it is aimed to obtain indicators that can contribute to better strategic and tactical marketing decisions. The study mainly focuses on the purchasing behaviours of healthcare professionals living in Turkey. Inferential research design was used in the study. The hypotheses were tested with the help of descriptive and inferential statistics, exploratory factor analysis (PCA) and binary regression analysis using data collected through questionnaires from 218 healthcare professionals. We hypothesized that there is a difference between men and women in terms of functional food consumption, the health sector professionals with a higher amount of info about the relevant functional food are more likely to use them, the professionals who have the desire to recommend a functional food is more likely to consume that product, the desire to recommend the relevant product to the patients increases the probability of the health professional to consume that product. As a result, it was determined that the interest in functional foods is high in women and having information about the related products affects the consumption. The findings of this study are also relevant for government agencies and the food industry interested in designing public health programs.

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*Keywords:* Consumer behaviour, functional foods, foods with health claim, healthcare professionals

## 1. Introduction

Functional foods, although not having a single official definition agreed upon by everyone, are generally defined as foods that positively affect the body and reduce the risk of disease, resemble traditional food in appearance, and are enriched with additional additives (Aggett et al., 1999; Boudreau et al., 2000; Poulsen, 1999). International Food Information Council (IFIC) defined functional foods as foods that provide health benefits beyond basic nutrition (Katan & de Roos, 2004), while American Dietetic Association (ADA) also includes unprocessed foods such as vegetables, fruits, low-fat cheeses and other snacks that are beneficial to health, within the definition of functional foods. As reported by The Institute of Medicine of the US National Academy of Sciences defines functional foods as foods whose one or more of their ingredients have been modified in order to increase the contribution to a healthy diet (Lee & Foo, 2014; Special Committee of Food and Nutrition Board of the Institute of Medicine, 1994). The European Commission Concerted Action on Functional Food Science in Europe (FUFOSE) determines functional foods as foods which have beneficial effects that reduce the risk of developing a disease or improve general and physical condition, as well as the basic nutritional effect (Siró et al., 2008). The functional foods should also be in the form of normal food, not in the form of capsules or pills (Siró et al., 2008). On the other hand, the products, which are expressed as Foods for Specific Health Use (FOSHU) in Japan, have been in the form of pills or capsules, although most of them are in food form since 2001 (Ohama et al., 2006; Siró et al., 2008). It is seen that functional foods, which have different definitions and different groupings around the world, do not have a single product grouping and product definition accepted by everyone. While some countries include natural foods with their own functional properties in the concept of functional food, some countries include products in pill or capsule form in the functional food concept. These different definitions pose a challenge when determining the size of the functional food market. The functional food market tends to grow in the world. This study is about the factors influencing the consumption of 6 functional foods by health professionals in Turkey. The pattern of consumption of functional foods differs according to the country. The Finnish consumers have a more positive attitude against functional foods than American and Danish consumers (Bech-Larsen & Grunert, 2003). There also exists differences between the Danish and the English regarding the attitude against functional foods. The Danish regards functional foods as unnatural and impure whereas the English reveals a positive attitude against it (Sune et al., 1998). Also, Danish consumers are skeptical about the functional food concept but have a positive attitude when considered on product basis (Poulsen, 1999). So, the study conducted in every country and about each different functional food product will help enlighten the functional food market.

The functional food market is a promising market in Turkey and in the world. For this reason, the research carried out in order to have more detailed information about this market are important. The functional food sector in Turkey is a sector that has not yet been fully explored. Turkey is not yet among the top 10 countries in the world functional food market (Gok & Ulu, 2019). In 2017, Turkey functional food sales reached 461.7 million dollars (Sezgin, 2020). World functional food sales in 2020 were realized as 161.99 billion dollars. It is expected to reach 171.25 billion dollars in 2021 with an increase of 5.7% (The Business Research Company, 2021). According to a different source, functional food sales, which were 212.09 billion dollars in 2013, reached 247.89 billion dollars in 2012 and expected to reach

319.93 billion dollars by the end of 2022 (Agriculture & Agri-food Canada, 2019). One of the main reasons of this discrepancy is the lack of a single generally-agreed-upon-definition and product group regarding the content of the concept of functional food, which was mentioned in the beginning. However, the main point valid for both sources of information is that the functional food market is growing day by day and is expected to grow in the coming years. Every study to be made in order to better understand this growing market is of importance. This research aims to determine the approaches of health professionals to functional foods and functional food consumption and the factors affecting consumption in six different functional food products.

The approach of healthcare professionals to functional foods is important in terms of both being consumers of these products and directing their clients/patients. (Martirosyan et al., 2021) have listed 15 steps for developing functional foods and for bringing them to market. Among these 15 steps, marketing the functional food product to educate people is one of the steps. In educating the people about the functional food products, health professionals take an important place. People trust the public health officials more than the food producers (Poulsen, 1999). In strategic marketing of the functional foods, integrating the science into brand positioning takes an important role (Hilton, 2017). Science oriented consumer seminars and having health care practitioners to speak on behalf of the product are two of the factors of integrating science into brand positioning. In educating people about the functional foods, health professionals have an important role. Since there isn't numerous research in the world that includes the approach of healthcare professionals to functional foods, this study conducted in Turkey aims to shed some light on this area. This study was conducted on 6 different functional food products. Approaches of functional food consumers in different countries may differ. American, European and Danish consumers have differences in terms of approach to functional foods (Bech-Larsen & Grunert, 2003). In this sense, the research on this market in Turkey are important in terms of supporting the better definition of the Turkish functional food market. It is also important that the researches include different product groups as both the fortifier and the product type affect the consumer attitude towards functional foods (Poulsen, 1999). It is important to determine the consumer profile and approaches of consumers in different countries to different functional product groups in order to better define the functional food market. Considering that consumer approaches will change in different product groups, every study conducted about different functional products in this field will shed light on the functional food market and is therefore important.

The hypothesis of this study is below:

H1: There is a difference between men and women in terms of functional food consumption.

H2: The health sector professionals with a higher amount of info about the relevant functional food are more likely to use them

H3: The professionals who have the desire to recommend a functional food is more likely to consume that product

H4: The desire to recommend the relevant product to the patients increases the probability of the health professional to consume that product.

The approaches of health professionals to functional foods have effects on consumer behaviors as they are trusted by the consumers. The consumer confidence in functional foods varies according to the

source of information. The studies show that the trust in public health authorities is greater than trust in food manufacturers and that the consumer confidence in functional foods varies according to the source of information (Annunziata & Vecchio, 2011; Poulsen, 1999; Siró et al., 2008). There is high level of trust in the information received from public institutions and doctors whereas the trust in the information received from manufacturers is low (Urala & Liisa, 2003).

## **2. Research Methods**

### **2.1. Participants**

Questionnaire was applied to 218 health professionals living in Turkey; 46.1% nurses, 21.5% doctors, 18.7% other health personnel, 7.3% dietitians, 4.6% pharmacists and 1,8 % dentists. The surveys were conducted in pre-covid. In the study, a questionnaire scale, which was previously applied in Sweden, was used (Landström, 2008). This questionnaire scale was created by making use of the scales developed by (Landström, 2008; Roininen & Tuorila, 1999; Urala & Lähteenmäki, 2007) as reported by (Landström, 2008). There are 2 different scales (functional food scale and health scale) in the questionnaires applied to healthcare professionals. The questions in these scales were prepared in the form of a 5-point Likert scale, where "1 means totally agree" and "5 means totally disagree". In the first part of the questionnaire, the questions about the knowledge and consumption about the functional foods and Likert scale questions were asked, in the last part of the questionnaire socio-economic/demographic (e.g. age, family size etc.) questions were asked.

In this study, consumers were asked about vitamin and mineral added bread, probiotic yogurt, margarine that helps to reduce cholesterol, relax and 7-herb tea, breakfast cereals with vitamin/mineral fortification, and selenium or omega-3 added eggs.

### **2.2. Factor analysis**

Factor analysis is a multivariate statistical method that aims to find fewer conceptually significant variables by bringing together a large number of interrelated variables (Çokluk et al., 2012; Doğan et al., 2017). Exploratory factor analysis is defined as showing the data consisting of many variables with fewer variables by performing an exploratory study on the collected data. In this study, exploratory factor analysis was applied. There are 2 separate scales in the questionnaire, namely the functional food scale and the health scale. The questionnaire was administered in two different ways, on-line and in print. In addition to the six factors obtained as a result of the factor analysis, the effects of gender, marital status, age, presence of children in the household, recommending products to their patients/clients, finding it appropriate to recommend products to their patients/clients, willingness to recommend the relevant functional food, and the knowledge about the relevant functional product variables on 6 different functional food consumption were aimed to be studied. Attitudes of health professionals towards functional foods were evaluated on the ordinal scale (Likert scale), and demographic data of the respondents on the nominal scale.

Functional food products were determined in a way that there are different products from different food groups. These are; bread with vitamin-mineral addition, yogurt with probiotic addition, margarine

that helps to reduce the cholesterol ratio, relax, form etc. tea, vitamin-mineral fortified breakfast cereal and selenium/omega 3 added egg. In the reliability analysis, the statements that increased the reliability when removed from the analysis were removed and a reliability analysis was performed again. Factor analysis was applied again. The factor loadings of the expressions were examined. Factor analysis was applied again by removing the factors with factor loads less than 0.1 in different factors. Cronbach-Alpha value is 0,867; KMO test value is 0,882 and Bartlett test is significant ( $p=0,000$ ). If the KMO sample adequacy criterion is between 0.8 and 0.9, it is considered very good (İslamoğlu & Almiaçık, 2014). In the Bartlett test,  $p<0.05$  should be used to understand whether the test is significant or not. Accordingly, the result of the test is significant and there are relations between the variables suitable for factor analysis. Reliability analysis was applied to each factor group separately as if they were a separate scale (İslamoğlu & Almiaçık, 2014). Cronbach-alpha values of each factor were found to be greater than 0.6 as also can be seen in Table 1.

The rotation method in this factor analysis was Varimax.

Since the expressions indicated with “R” are expressions with negative meaning, they are re-coded in order to look in the same direction as the other expressions and to provide ease of evaluation.

Factor analysis was applied to the functional food scale. Accordingly, three factors were derived. 15 statements were reduced to three factors as shown in Table 1. Factors in functional food scale were named as the personal reward for using functional foods, interest in functional foods and confidence in functional foods. Explanation rate of variance with three factors was 56.532 %.

**Table 1.** Functional Food Scale Factor Loadings and Variances

	<b>Factor Loadings</b>	<b>Average</b>	<b>Standard Deviation</b>
<b>Factor 1: Personal Reward for Using Functional Foods</b>			
I find it positive that modern technology enables the development of foods with health claims.	0,805	2,7799	1,13907
Foods with health claims make it easier to live a healthy life.	0,770	3,0191	1,05594
I feel better if I eat foods that have a health claim.	0,718	3,07766	1,06242
I'd buy a food with a health claim recommended by a doctor/dietician/health professional.	0,664	2,6746	1,17644
I think that products with health claims increase my overall health.	0,647	3,1770	1,03415
There is no benefit for healthy people to use food products with health claims.	0,621	3,0048	1,36754
It is completely safe to consume foods with health claims.	0,508	3,3062	0,91041
Factor 1 Cronbach Alpha=0,842 Percentage of Variance Explained=25,386			
<b>Factor 2: Interest in Functional Foods</b>			
I make a serious effort to have information about foods with health claims.	0,750	3,4545	1,15986
I like to consume foods with drug-like effects.	0,729	3,7129	1,12398
The thought of being able to take care of my health by consuming foods with health claims makes me happy.	0,621	3,0909	1,11215
I think the safety of products with health claims has been carefully researched.	0,495	3,2536	1,04596
When I consume a product with a health claim, my performance improves.	0,490	3,1244	1,01613

Factor 2 Cronbach Alpha=0,731  
 Percentage of Variance Explained=16,039

Factor 3: Confidence in Functional Foods			
New features of foods with health claims mean unpredictable risk.	0,794	3,2967	0,93441
The health effects information on the package of foods with health claims is often exaggerated.	0,769	3,1770	1,04801
I find it wrong that foods with health claims are constantly increasing on the market shelves.	0,663	3,0718	1,19277
Factor 3 Cronbach Alpha=0,704 Percentage of Variance Explained =15,107			

The same procedures step by step are also applied to the health scale. Accordingly, three factors were obtained. Factor loads were controlled. The factor analysis was repeated by removing the expressions with loads less than 0.1 in different factors. Cronbach's Alpha value was found to be 0.797. Reliability analysis was performed separately for each factor group. Cronbach Alpha values of each factor were found to be greater than 0.6. KMO and Bartlett tests were applied to check the convenience of the data for factor analysis. KMO values is 0.833 and Bartlett test is  $p=0,000$ . If the KMO sample adequacy criterion is between 0.8 and 0.9, it is considered very good. So the sample adequacy is very good. The result of the Bartlett test is significant and there are relations between the variables suitable for factor analysis.

As a result of the factor analysis applied to the health scale, three factors were reached. 13 statements were reduced to three factors as also shown in Table 2. Variance explained with three factors was 63,610%. The factors obtained in the health scale are; general interest in health, interest in diet products, interest in natural products.

**Table 2.** Health Scale Factor Loadings and Variances

	Factor Loadings	Average	Standard Deviation
Factor 1: General Interest in Health			
When choosing food, I pay attention that the foods are healthy.	0,804	2,2196	0,97547
I always eat a healthy and balanced diet	0,759	2,5140	0,94312
It is important for me that the foods I eat daily have a low fat content.	0,749	2,3551	1,01401
It is very important for me that the snacks I eat are healthy.	0,743	2,3551	1,01863
It is important for me that the foods I eat daily contain many vitamins and minerals.	0,739	2,2664	0,98776
I am very particular about the health of the food I eat.	0,668	2,2243	0,94256
I eat what I want, I rarely care about the health of the food I eat.	0,472	2,4579	1,14474
Factor 1 Cronbach Alpha=0,850 Percentage of Variance Explained=29,905			
Factor 2: Interest in Diet Products			
I believe that diet products have an effect on keeping my cholesterol level low.	0,910	2,8692	1,17951
I think diet products support my health.	0,881	2,7757	1,12428

I think I can keep my cholesterol under control by consuming diet products	0,828	2,7523	1,14628
Factor 2 Cronbach Alpha=0,849 Percentage of Variance Explained=18,511			
<b>Factor 3: Interest in Natural Products</b>			
I think that foods sweetened with sweeteners are harmful to my health.	0,825	2,2243	1,17332
I stay away from highly processed products because I don't know their ingredients.	0,762	2,1402	0,98770
I try to consume products without additives.	0,637	2,2290	1,00183
Factor 3 Cronbach Alpha=0,719 Percentage of Variance Explained=15,194			

### 2.3. Binary logistic regression analysis

The other analysis applied to the survey results is binary logistic regression analysis. The purpose of logistic regression analysis is to establish an acceptable model that defines the relationship between dependent and independent variables in a way that has the best fit with the least variable (Çokluk, 2010). Logistic regression analysis does not require normal distribution of independent variables (Çokluk, 2010; Tabachnick & Fidell, 1996). Apart from this, there are some prerequisites in logistic regression analysis in order to avoid errors in the interpretation of the data. In order to avoid misinterpretations in the analysis, it should be investigated whether there is a multicollinearity problem between the independent variables (Çokluk, 2010). In this analysis, VIF values were controlled in order to control the multicollinearity problem among the independent variables analysed. It was observed that all of the VIF values were below 5 and therefore there was no multicollinearity problem.

Logistic regression analysis is called binary logistic regression analysis when the dependent variable is categorical and has two options. Logistic regression uses the maximum likelihood method due to its nonlinear nature, which requires logistic transformation. Logistic regression is based on probability, odds and logarithm of odds. Odds is defined as the probability of an event occurring divided by the probability of not happening (equation 1) (Çokluk, 2010).

$$\text{Odds} = \frac{p(y)}{1 - p(y)}$$

p(y): probability of an event occurring

1-p(y): The probability that an event will not occur

Odds ratio, on the other hand, is defined as the ratio of two separate odds to each other (Özdamar 2013). Logit is obtained by taking the natural logarithm of the asymmetric odds ratio and converting it to a symmetrical one (Özdamar, 2013).

The estimation equation created as a result of the logistic regression analysis is as follows;

$$L_i = \log \frac{p(y)}{1 - p(y)} = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + \dots$$

In the equation;

p(y): The probability of occurrence of the state of interest in the dependent variable

b<sub>0</sub>: Constant term

X: Arguments

B: beta coefficients in log odd units

L<sub>i</sub>: Logit (Y Dependent Variable)

The basic assumption of this research is that the respondents answered the questionnaire correctly and sincerely and that the respondents perceived all the questions correctly. The data obtained by the survey application were analysed in the SPSS 24.0 program. Within the scope of the analysis, factor analysis and binary logistic regression analyses were performed. For the model fit, Hosmer–Lemeshow test was used. The level of significance was accepted as P < 0,05 for all statistical analyses. When p<0,1, it is particularly stated.

When the results of the surveys applied to healthcare professionals in general were evaluated, it was seen that the results of the binary logistic regression analysis applied to the survey results in all product groups and general functional food product results were significant and the variance explanation rates of the model established with independent variables were between 36% and 64%.

### 3. Findings

218 health professionals answered the questionnaire; 46.1% nurse, 21.5% doctors, 18.7% other health professionals, 7.3% dieticians, 4.6% pharmacist, 1.8% dentist. 152 of them were females and 66 of them were males. Table 3 shows details of demographic details of the respondents. When the age ranges of healthcare professionals are evaluated, 34.4% are younger than 29 years old, 34.4% are between the ages of 30-39, 22% are between the ages of 40-49, and 9.2% are between the ages of 50-89. 69.7% of consumers are women and 30.3% are men. 58.7% are married, 40.8% are single, and 1% are in the other group. 50.5% have children at home, 49.5% do not. According to the results of the questionnaire applied to healthcare professionals, it was seen that 60.6% of healthcare professionals had heard of functional foods before, while 39.4% had not. When asked from where they heard about functional foods; 26% from the ads on television, 18.3% saw on food products, 17.6% have knowledge due to their education, 12.2% from newspaper ads, 9.2% from brochures, 7.6% from their friends, 3.1% from the internet, 2.3% from their doctors, 1.5% from their dieticians. When asked whether they have consumed any functional food product before, 68.7% of them stated that they have consumed it and 31.3% of them have not. Top 5 functional food consumed other than 6 functional food products on the questionnaire were; kefir (23.8%), fish oil capsule (19%), omega 3 (9.5%), food supplement (9.5%) and light food products (9.5%). It was observed that omega 3 and fish oil capsules and capsules expressed as food supplements are also evaluated as functional food in the group of healthcare professionals.



**Table 3.** Healthcare Professionals' Demographic Data

Variables	n	%
<b>Gender</b>		
Female	152	69,7
Male	66	30,3
<b>Age</b>		
18-29	75	34,4
30-39	75	34,4
40-49	48	22
50-89	20	9,2
<b>Marital Status</b>		
Married	128	58,7
Bachelor	89	40,8
Other	1	0,5

The chi-square analysis shows that there is no significant relationship between having knowledge about functional foods and gender ( $p=0.117$ ). However, it can be stated that there is a significant relationship between gender and having consumed a functional food product ( $p=0.000$ ).

When it is examined whether health professionals have knowledge about functional foods according to their occupational groups and whether they have tried these products, 38.8% of those who have knowledge about functional foods are nurses, 28.7% are doctors, 14% are other health personnel. 12.4% are dietitians, 5.4% are pharmacists, 0.8% are dentists.

The health professionals who have consumed any functional food product according to their profession; 39.6% are nurses, 23.5% are doctors, 20.8% are other health personnel, 10.7% are dietitians, 4,7% of them are pharmacists and 0.7% are dentists.

Among the 6 functional food products included in the survey, probiotic yogurt was the only product that was consumed at least once by more than half of the consumers, with 50.7% answering "yes" when asked whether they had ever consumed it before. The percentage of other products are; bread with vitamin and mineral supplement 32.3%, margarine that helps to reduce cholesterol rate 15.2%, relax, form etc tea 46.3%, breakfast cereal with vitamin and mineral addition 37.8%, eggs with selenium or omega 3 addition 20.4%.

The independent variables of the study are listed in the first column of Table 4, the dependent variable is the functional food usage. The first row of Table 4 shows the listed functional food groups (dependent variables). The probability of buying one of the six pre-determined functional foods (vitamin-mineral added bread, probiotic added yogurt, margarine helping to reduce cholesterol, relax & 7-herb tea, vitamin-mineral added breakfast cereal, selenium-omega 3 added eggs) and any functional food were used as dependent variables and personal reward for using functional foods, interest in functional foods, confidence in functional foods, general interest in health, interest in diet products, interest in natural products, gender, age, not having children, making product recommendation to the patients, finding or not finding it appropriate to recommend therapeutic products to patients, willing to recommend the related functional foods to the patients, having information about the related functional food are the independent variables.

When the answers about the consumption of functional products are examined, as shown in Table 4, in general, the probability of consuming any functional food is higher for the healthcare professionals who give nutritional advice and recommend products to their patients/clients. When analysed on the product basis, it was seen that the probability of consuming functional bread, functional margarine and breakfast cereal is higher if the health pro gives advice or recommends products to their patients.

Those who stated that they did not find it appropriate to recommend products for treatment to patients/clients were more likely to consume functional tea products, functional cereal products.

Regarding cereal with added vitamins and minerals and functional eggs; it was observed that the probability of using these products is lower among the health professionals who stated that they were not willing to recommend patients the related product.

The respondents with no, little or moderate knowledge of functional bread, functional tea, functional yogurt, functional breakfast cereal and functional egg are less likely to consume these products. It was observed that healthcare professionals with moderate knowledge of functional margarine are 8.05 times more likely to consume this product. The respondents who do not have above-average knowledge about the products are less likely to consume them.

Female healthcare professionals are more likely to use bread products with vitamin-mineral addition, functional tea, functional cereals, functional eggs and any functional food.

In functional bread and functional yogurt products, it was seen that the health professionals' desire to recommend the product also affects consumption.

It was seen that the age variable has a significant effect only on the consumption of probiotic yogurt at the 90% confidence interval. Accordingly, healthcare professionals aged 30-49 are more likely to consume probiotic yogurt.

The respondents who have expressed their confidence in the foods with health claims have higher probability of consuming functional margarine product.

Health professionals who respond positively to statements such as the fact that modern technology allows the development of foods with health claims is positive, that foods with health claims make it easier to live a healthy life, and that they feel better when foods with health claims are consumed are more likely to consume functional tea.

Those who are interested in diet products are less likely to consume functional tea. Considering the general functional food approaches regardless of the product, it was seen that the health professionals who had a positive attitude towards diet products were less likely to consume any functional food product and functional eggs. The people with a high interest in health are less likely to consume functional egg products. In functional yogurt, it was seen that general attention to health increases the likelihood of consumption. The respondents who do not have children at home are more likely to consume functional tea.

**Table 4.** Healthcare Professionals' Functional Product Usage Odds Rates

<b>Variables</b>	<b>Vit.- Min. Added Bread</b>	<b>Probiotic Added Yogurt</b>	<b>Margarine Helping to Reduce Cholesterol</b>	<b>Relax, 7 Herb Tea</b>	<b>Vit.-Min. Added Breakfast Cereal</b>	<b>Selenium/ Omega-3 Added Egg</b>	<b>Any Functional Food</b>
Personal reward for using FF (agree/totally agree)	1,173	1,002	1,414	2,828 <sup>b</sup>	1,629	1,902	1,692
Interest in FF (agree/totally agree)	1,256	1,575	2,377	1,805	1,879	2,561	1,559
Confidence in FF (agree/totally agree)	1,241	1,212	3,097 <sup>c</sup>	0,794	1,390	0,693	0,971
General interest in health	2,238	4,048 <sup>c</sup>	497798119,951	1,297	0,384	0,217 <sup>c</sup>	1,197
Interest in diet products	0,750	0,909	0,864	0,296 <sup>b</sup>	0,521	0,400 <sup>c</sup>	0,384 <sup>b</sup>
Interest in natural products	0,782	1,915	0,900	3,588	1,418	1,223	1,019
<b>Gender</b>							
Female	3,622 <sup>b</sup>	0,955	1,794	2,746 <sup>c</sup>	3,295 <sup>b</sup>	3,177 <sup>c</sup>	3,588 <sup>a</sup>
<b>Age</b>							
18- 29	1,600	4,049	236388257,496	1,298	1,366	0,389	1,163
30-39	2,582	6,065 <sup>c</sup>	453387026,993	1,555	1,115	0,809	1,569
40-49	0,751	4,861 <sup>c</sup>	218728440,719	3,736	1,873	2,426	2,815
Not having children	0,772	1,484	2,558	3,144 <sup>b</sup>	0,777	0,967	1,241
Recommending product to patients	4,102 <sup>c</sup>	3,440	8,075 <sup>c</sup>	0,282	3,462 <sup>c</sup>	1,095	19,093 <sup>a</sup>
Not recommending product to patients	2,427	0,609	4,453	0,446	0,970	1,240	1,269
Finding it appropriate to recommend therapeutic products to patients	1,006	3,038	0,885	2,999	1,207	0,878	1,249
Not finding it appropriate to recommend therapeutic products to patients	1,741	1,467	0,893	2,844 <sup>c</sup>	2,404 <sup>c</sup>	1,800	2,667 <sup>b</sup>

Willing to recommend the relevant product	10,539 <sup>a</sup>	2,638 <sup>c</sup>	2,125	2,898	0,611	1,488	-
Not willing to recommend the relevant product	1,148	0,806	0,566	0,424	0,373 <sup>b</sup>	0,162 <sup>a</sup>	-
No info about the relevant product	0,211 <sup>c</sup>	0,000	0,818	0,021 <sup>a</sup>	0,301	0,037 <sup>a</sup>	-
Little info about the relevant product	0,681	0,038 <sup>a</sup>	1,407	0,169 <sup>b</sup>	0,281 <sup>c</sup>	0,099 <sup>a</sup>	-
Moderate info about the relevant product	1,350	0,135 <sup>c</sup>	8,049 <sup>b</sup>	0,225	0,202 <sup>b</sup>	0,191 <sup>c</sup>	-
Having info about the relevant product	0,792	0,254	2,248	0,713	0,815	0,324	-

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$a=p<0,01$        $b=p<0,05$        $c=p<0,1$

#### 4. Discussion and Conclusion

Among the results of this study, we have seen that the respondents who do not have above-average knowledge about the products are less likely to consume them. It was seen that the lack of knowledge about functional food also reduces the possibility of consumption. Having knowledge about the nutritional effects of foods affects thoughts about functional foods (Bech-Larsen & Grunert, 2003; Bhaskaran & Hardley, 2002; Landström et al., 2007; Verbeke, 2005; Wansink et al., 2005). Too detailed health claim and little knowledge about the physiological effects of functional food cause consumers to be more skeptical about the product (Urala et al., 2003). In this study, the results show that the health professionals who have less than average knowledge about the product are less likely to consume it.

Female healthcare professionals are more likely to use bread products with vitamin-mineral addition, functional tea, functional cereals, functional eggs and any functional food. In the studies conducted in the world on the subject, it has been stated that functional food consumers are mostly women (Bower et al., 2003; Poulsen, 1999; Siró et al., 2008). In other studies, it was also stated that women are more willing to accept novel foods than men (Beardsworth et al., 2002; Charles & Kerr, 1988; McIntosh & Zey, 1989; Murcott, 1982). The findings of this study are also alike. In functional bread and functional yogurt products, it was seen that the health professionals' desire to recommend the product also affects consumption. In order to recommend the product and to have confidence in the product, it is important that the health effects of the product have been scientifically proven. Scientific evaluation of the effects of products and sharing this information with healthcare professionals may make the products more preferable for them. In order to recommend and trust the product, it is important that the health effects of the product have been scientifically proven (Landström, Sidenvall, et al., 2007). The scientific evaluation of the functional food is important for the dietitians and doctors to have confidence in them (de Jong et al., 2022; Schmidt & Pitman, 1999). Since different results have been achieved in different

product groups, it is important to consider functional foods as separate products within various product categories, not as a homogeneous group.

The results of this study shows that the healthcare professionals aged 30-49 are more likely to consume probiotic yogurt. There are different findings regarding the age of functional food consumers. (Poulsen, 1999) stated in his study that older individuals approach functional foods more positively and have a tendency to consume functional foods, while (Dölekoğlu et al., 2015) stated in their study that 67% of functional food consumers are under the age of 40 and that 88.6% of the 20-40 age group consumes functional food. Considering the preference of different products by different age groups, it is recommended to conduct research on the products preferred by younger age group and advanced age group consumers in future studies.

Limitations of this study are; as this study was conducted before the pandemic, it would be better to conduct other studies to understand the approaches of the healthcare professionals to functional foods, after the pandemic. This study was realised with the participation of 218 respondents, this limits generalizability. For future studies, with the participation of more respondents, more generalizable results may be achieved. As the study was conducted before the pandemic, it doesn't include questions regarding the pandemic. Future studies about the relevant subject will be useful to compare the results as pre-pandemic and post-pandemic approaches of the health professionals to functional foods.

Functional foods, when taken as part of a balanced diet and healthy lifestyle, can offer great potential to improve health and/or help prevent certain diseases. Health professionals, in particular, are also critical in communicating health benefits to consumers and having the knowledge to make informed choices about the foods they eat and enjoy. Based on the results of this study, which was planned from this point of view; consumers and practitioners must be able to make informed decisions concerning when and if to use new food products. Valid, complete information that is easily accessible must thus be provided by companies and regulatory bodies. Companies must consider the medical needs and financial constraints of consumers, practitioners, and hospitals in order to develop and market products successfully. Monitoring consumer and physician response from the time a product is under development until long after it has been launched may be the best way for companies to produce beneficial, safe products while prolonging the life cycle of these products.

The results of the findings were that the group of health professionals had different levels of functional food experience and therefore their perceptions of this type of food were expressed in significantly different ways. Levels of trust and interest in functional foods, perceived need for functional foods and greater willingness to recommend these products can be explained by different understandings and training in nutrition and different professional focus.

Considering the general functional food approaches regardless of the product, it was seen that the health professionals who have a positive attitude towards diet products are less likely to consume any functional food products.

This study was conducted on 6 different functional food products. Detailed researches for different functional food product groups, not considering the functional food market as a homogeneous market, and conducting researches for different product groups in the future will provide more detailed information about this market.

For future studies, studies comprising a broader number of health professionals will help have a broader look to the subject.

A limited number of studies have been found in the literature on the approaches of healthcare professionals to functional food products in the world and in Turkey. Conducting research on the approaches of health professionals in Turkey to functional food, including more functional product types, will help to eliminate the deficiency in this area.

## Acknowledgments

This article was derived from PhD thesis of the first author Fatma Pelin Erel. Prof. Dr. Yasemin Oraman is the doctoral advisor of the thesis.

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