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EVALUATION OF THE HABIT OF READING NUTRITION LABELS IN CONSUMERS: CASE OF ELAZIĞ CITY

Tüketicilerde besin etiketi okuma alışkanlığının değerlendirilmesi: Elazığ ili örneği

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Abstract

This study, it was aimed to evaluate the nutrition label reading habits of adult consumers aged 18 and over, in Elazığ city center. This cross-sectional study consists of consumers who shop from the shopping malls in Elazığ city center. 300 people were reached in the study. Evaluating the "always" response as 2 points, "sometimes" as 1 point, and the "never" as 0 points, the "Nutrition Label Reading Habit Score" was obtained. The score that can be obtained varies between 0 and 56. While 28% of the participants "always" read the nutrition label, 62% "sometimes", and 10% "never" read it. The mean score for the nutrition label reading habit of women was significantly higher than that of men ($p=0.002$). Among the age groups, the highest score was significantly in the 35-44 age group ($p=0.004$). As the education level increased, the score also increased considerably ($p<0.001$). The score was found to be notably higher in consumers who are working, married, and have children ($p<0.05$). The scores of those who received nutrition training than those who did not receive such education ($p<0.001$), and scores of those who read the nutrition label while using the product instead of reading it at home were significantly higher ($p=0.002$). It has been observed that there are deficiencies in reading the nutrition labels on packaged products, at the same time; women, those with a high level of education, those who are married, have children, and those who have received nutritional education have a higher habit of reading nutrition labels.

Keywords: Consumer, nutrition label, consumer behaviour.

Özet

Çalışmada Elazığ il merkezinde bulunan 18 yaş ve üzeri yetişkin tüketicilerin besin etiketi okuma alışkanlıklarının değerlendirilmesi amaçlanmıştır. Kesitsel tipteki bu araştırma Elazığ il merkezindeki alışveriş merkezlerinden alışveriş yapan tüketicilerden oluşmaktadır. Çalışmada 300 kişiye ulaşılmıştır. Besin etiketi okuma alışkanlığı ile alakalı sorulan 28 soruya verilen "her zaman" yanıtı 2 puan, "bazen" yanıtı 1 puan ve "hiçbir zaman" yanıtı ise 0 puan olarak değerlendirilmiş olup "Besin Etiketi Okuma Alışkanlığı Puanı" elde edilmiştir. Elde edilebilecek puan 0-56 arasında değişmektedir. Katılımcıların %28'i ambalajlı besin etiketini her zaman, %62'si bazen okumakta iken %10'u hiç okumamaktadır. Kadınların etiket okuma alışkanlığı puan ortalaması erkeklerinkinden anlamlı şekilde yüksek çıkmıştır ($p=0,002$). Yaş grupları arasında en fazla puanın anlamlı şekilde 35-44 yaş grubunda olduğu görülmüştür ($p=0,004$). Eğitim düzeyi yükseldikçe puanın anlamlı şekilde arttığı görülmüştür ($p<0,001$). Çalışanların, evli olanların ve çocuğu olanların etiket okuma alışkanlığı puanı anlamlı şekilde yüksek bulunmuştur ($p<0,05$). Beslenme eğitimi alanların etiket okuma alışkanlığı puanı almayanlardan ($p<0,001$) ve besin etiketini ürünü kullanırken okuyanların puanı evde okuyanların puanından ($p=0,002$) anlamlı şekilde yüksek bulunmuştur. Ambalajlı ürünlerdeki besin etiketlerini okuma konusunda eksikliklerin olduğu bununla beraber kadınların, eğitim düzeyi yüksek olanların, evli olanların, çocuğu olanların ve beslenme eğitimi almış olanların etiket okuma alışkanlığının daha fazla olduğu görülmüştür.

Anahtar kelimeler: Tüketici, besin etiketi, tüketici davranışı.

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Introduction

The most important tool for consumers to control the food they purchase is the label. In general, the main objectives of labelling are to provide adequate and accurate information on health, safety and economic concerns, to protect consumers and manufacturers from dishonest and misleading packaging and advertisements, and to support fair competition, and marketing of the products (1, 2). The importance of label information as much as packaging has increased with legal regulations, the efforts of companies on food packaging and consumer awareness (3). The labels called nutrition labels on some food provide information required for a healthy diet, as well as the content of the product (4). Nutrition labels are a type of labelling of the packaged foods, on which the amount of nutrients (protein, fat, vitamin, mineral, etc.) determined by the laboratory analysis, in addition to the amount of nutrients that the consumer needs to take daily, are stated as a percentage (5). While regulating the nutritional information on nutrition labels, generally, first the total and one serving amounts of the product, then detailed nutritional information is given (6). Nutrition labels are effective in adequate and balanced diets of consumers, in special dietary practices (celiac, diabetes, food allergies, etc.), and in selecting the healthy foods during their purchases (7).

For the first time in the world, the Federal Drug Administration has created a comprehensive law in which nutrition labels include fat, saturated fat, cholesterol, calorie, carbohydrate, protein, vitamin, and portion information of the product (8). In Turkey, Türk Gıda Kodeksi (Turkish Food Codex) which was first held in 2011, became Labeling Regulator with law number “28157” and finally took its final form with law number “28201” published on public newspaper (9, 10). In recent years, the increase in the prevalence of nutrition-related diseases, especially obesity, has increased the importance of adequate and balanced nutrition diet. One of the strategies developed in order to ensure that individuals select the right products for an adequate and balanced nutrition is the efforts to increase the effective use of nutrition label information. An effective nutrition labelling system has been shown to have the potential to reduce the prevalence of obesity and its associated diseases by encouraging healthier purchasing choices (11). It is stated that reading the labels is the most important behaviour type that the consumers can do for conscious purchasing and healthy eating (12). Reading the nutrition label and the understanding of the label affects the behaviour of consumers. Raising awareness is important to ease the purchasing behaviour of consumers and to increase the level of nutrition label literacy (7). Although food and nutritional literacy play an important role in the development of healthy eating behaviours, there are various factors that facilitate or complicate this situation. Nutrition labels are one of them. Using information such as energy value and nutritional content on nutrition labels and interpreting written and visual messages on food and nutrition guides will facilitate this situation (13).

This study was planned to evaluate the nutrition label reading habits of adults aged 18 and over in Elazığ city center.

Material-Method

The focus of this cross-sectional study consists of consumers who shop from the shopping malls located in the central district of Elazığ city. The n=[DEFF*Np(1-p)]/[(d2/Z21-α/2*(N-1)+p*(1-p)] (n: sample size, DEFF: desing effect, N: population size, p: the

estimated proportion, d: desired absolute precision) formula was used to decide on the sample size of the study. The frequency of reading the nutrition label was accepted as p=76.5%, t=1.96, and d=0.05 (95% confidence interval). In this direction, it was aimed to reach at least 277 consumers aged 18 and over in Elazığ city center. The study reached 300 people. In the study, a questionnaire form prepared by the researchers based on the literature review was used in order to collect data (14, 15). The questionnaire application was conducted by face-to-face interview method, after informing the participants and obtaining a voluntary consent form. In the first part of the questionnaire; there was sociodemographic information and in the second part of the questionnaire; there were questions about nutrition label reading. A pre-application was implied among 10 consumers in order to observe the applicability of the questionnaire and make necessary changes. Since the questionnaire form is not a scale study, its validity and reliability study has not been conducted. While the questionnaire form was filled, the height and weight of the individuals were not measured, but filled according to the information provided by the participants. Body Mass Index (BMI) was used in the obesity assessment of the participants. In the evaluation of BMI, the evaluation of World Health Organization (WHO) was taken as a criterion. BMI<18.5: underweight, 18.5-24.9: normal, 25.0-29.9: overweight, ≥30: obese (16). Evaluating the “always” response as 2 points, “sometimes” as 1 point and the “never” as 0 points to 28 questions about the habit of reading nutrition labels, the “Nutrition Label Reading Habit Score” was obtained. The score that can be obtained varies between 0 and 56. The higher the score is, the higher the reading habit.

Ethics committee approval was obtained from Fırat University Faculty of Medicine Ethics Committee for the study (Date:2019/01/24, No:18).

The analysis was evaluated in the SPSS (Statistical Package for Social Sciences; SPSS Inc., Chicago, IL) v.22 package program. Descriptive data in the study were shown as n, % values in categorical data, and mean± standard deviation (Mean±SD) values in continuous data. Chi-Squared analysis (Pearson Chi-Squared) was used to compare categorical variables between groups. The suitability of continuous variables to normal distribution was evaluated with the Kolmogorov-Smirnov test. It was observed that the data showed a normal distribution. Student t-test was used for comparison of paired groups. One Way ANOVA test was used to compare variables with more than two groups. Pearson correlation test was used to examine the relationship between continuous variables. The statistical significance level in the analysis was accepted as p<0.05.

Results

The average age was 36.6±12.2 (min=18-max=72) and 169 (56.3%) of the participants were women. The BMI average of the participants was found to be 25.2±4.4 (min=16.8-max=40.4). 180 (60%) of the participants have children. 70 of the participants (23.3%) stated that they received training on nutrition. While 84 (28%) of the participants always read the packaged nutrition label, 186 of them (62%) sometimes read it, and 30 of them (10%) did not read it at all. While 236 (87.4%) of those who read the product buy the nutrition label, 34 (12.6%) of them study at home (Table 1).

Table 1: Sociodemographic and nutrition label reading status of the participants.

	Number	%
Age, Mean±SD	36.6±12.2	
BMI, Mean±SD	25.2±4.4	
Gender		
Female	169	56.3
Male	131	43.7
Education Level		
Primary education and lower	33	11.0
High school	45	15.0
University and higher	222	74.0
Employment Status		
Employed	204	68.0
Not working	96	32.0
Marital Status		
Married	188	62.7
Single	112	37.3
Income Level*		
501-1000	5	2.8
1001-1500	10	5.5
1501-2000	7	3.9
2001-3000	31	17.1
3001-5000	78	43.1
5000 and above	50	27.6
Nutrition Training		
Yes	70	23.3
No	230	76.7
Status of Reading the Packaged Nutrition Label		
Always	84	28.0
Sometimes	186	62.0
Never	30	10.0
Does the Information on the Packaged Product Affect Your Decision to Buy or not?		
Always	87	29.0
Sometimes	183	61.0
Never	30	10.0
Where Do You Mostly Read the Information on the Nutrition Label?		
When buying the product	236	87.4
At home	34	12.6
Total	300	100.0

**Those who do not respond are excluded.*

It was observed that the participants in the study mostly benefited from social media (53.3%) and then TV/radio (49%) regarding nutrition. It was seen that the participants (70%) read the food label when purchasing the product for the first time, paid the most attention to the price (68.7%) and brand (68%) when purchasing food, and the reason for not reading the food label was to buy the same brands at most (Figure 1).

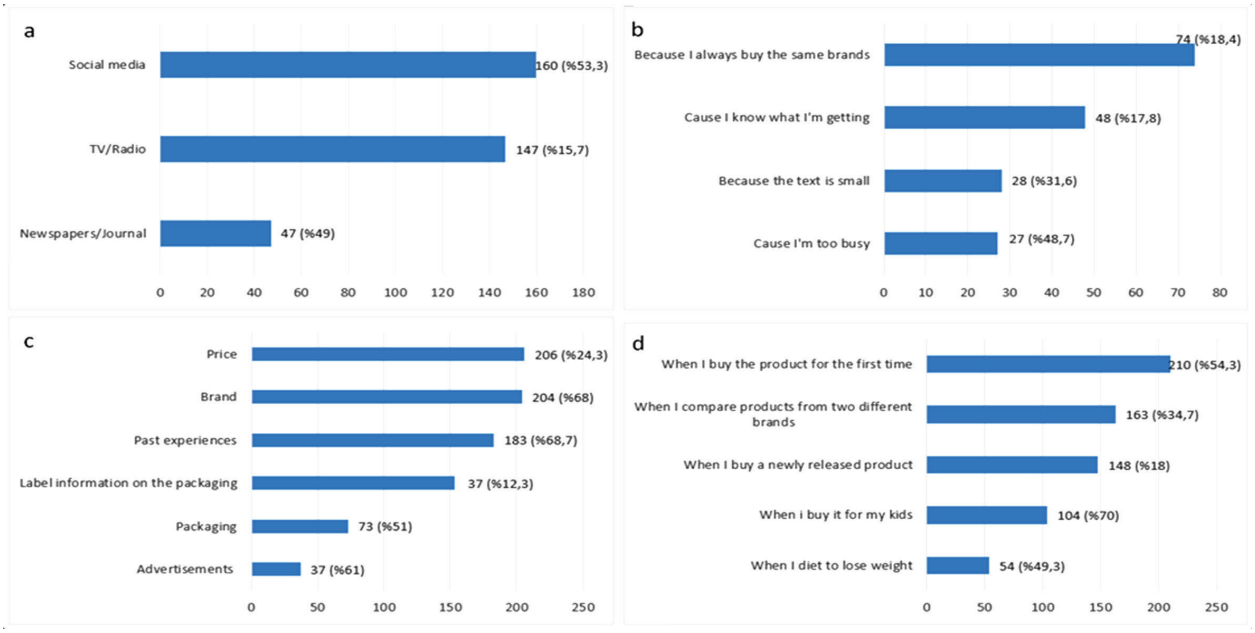

Figure 1: a. Information sources about nutrition, b. Nutrition label reading state, c. The most important thing when purchasing food, d. Reasons for not reading packaged nutrition label, n(%) (there are multiple answers).

The total mean score of the nutrition label reading habit of participants in the study was found 28.3±13.3. The mean score for the nutrition label reading habit of women was significantly higher than that of men (p=0.002) (Figure 2). There was a significant difference between the age groups in terms of nutrition label reading habit mean score (p=0.004). It was seen that this difference was due to the difference between the 35-44 age group and the 55 and above age group. Likewise, there was a significant difference between education background levels in average score for nutrition label reading habits (p<0.001) (Figure 2). It has been observed that this difference is due to the difference between the university and higher and the other two groups. The score was found to be notably higher in consumers who are working, married and have children (p<0.001, p=0.023, p=0.002, respectively). The scores of those who received nutrition training than those who did not receive such education (p<0.001), and scores of those who read the nutrition label while using the product instead of reading it at home were significantly higher (p=0.002). There was a significant difference between the habit of reading the packaged food label in terms of the food label reading habit score, and this difference was due to the difference between all groups (p<0.001). Significant differences were detected in terms of nutrition label reading habit among the answers responded to the question of "Does the information on the packaged product affect your decision to buy or not" (p<0.001). It was seen that this difference was due to the difference between all groups (Table 2).

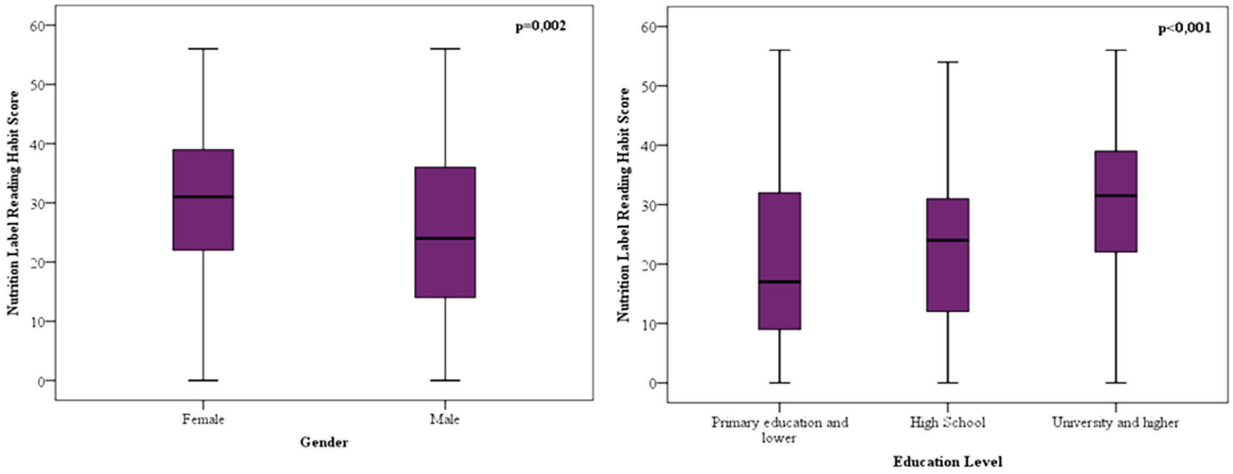

Figure 2: Comparison of Nutrition Label Reading Habit Score by gender and education level.

Table 2: Comparison of nutrition label reading habit score according to sociodemographic and nutrition label reading status of the participant.

Variables	Nutrition Label Reading Habit Score Mean ± SD	p
Gender		
Female	30.4±11.7	**0.002***
Male	25.6±14.7	
Age Group		
18-24	26.3±10.9[a,b]	**0.004****
25-34	28.0±12.4 [a,b]	
35-44	32.4±13.3[a]	
45-54	28.8±14.7 [a,b]	
55 and above	21.7±14.7[b]	
BMI		
Underweight	31.3±9.4	0.727**
Normal	28.7±12.8	
Overweight	27.9±13.6	
Obese	27.0±15.3	
Education Level		
Primary education and lower	20.2±14.9[a]	**<0.001****
High school	22.8±12.1[a]	
University and higher	30.6±12.5[b]	
Employment Status		
Employed	30.3±13.4	**<0.001***
Not working	24.1±12.0	
Marital Status		
Married	29.6±13.7	**0.023***
Single	26.1±12.2	
Income Level		
501-1000	18.2±10.2	0.300
1001-1500	23.3±10.6	
1501-2000	27.1±11.9	
2001-3000	28.1±15.9	
3001-5000	28.9±13.5	
5000 and above	30.6±11.2	

Have Children		
Yes	30.3±13.5	**0.002***
No	25.4±12.4	
Nutrition Training		
Yes	35.2±11.3	**<0.001***
No	26.2±13.1	
Status of Reading the Packaged Nutrition Label		
Always	40.4±9.9[a]	**<0.001****
Sometimes	25.9±9.9[b]	
Never	9.6±9.5[c]	
Does the Information on the Packaged Product Affect Your Decision to Buy or not?		
Always	38.3±10.4[a]	**<0.001****
Sometimes	26.4±11.0[b]	
Never	10.9±10.0[c]	
Where Do You Mostly Read the Information on the Nutrition Label?		
Employed	30.3±13.4	**<0.001***
Not working	24.1±12.0	
Marital Status		
Wen buying the product	31.2±11.9	**0.002***
At home	24.6±10.1	

**Independent groups t test, **One Way ANOVA was used. a, b, c different letters indicate a significant difference.*

In the correlation analysis, a significant, low level positive relationship was found between income level and nutrition label reading habit score (r=0.176; p=0.018) (Figure 3). There was no significant relationship between age and BMI and food nutrition reading habit score (p>0.05).

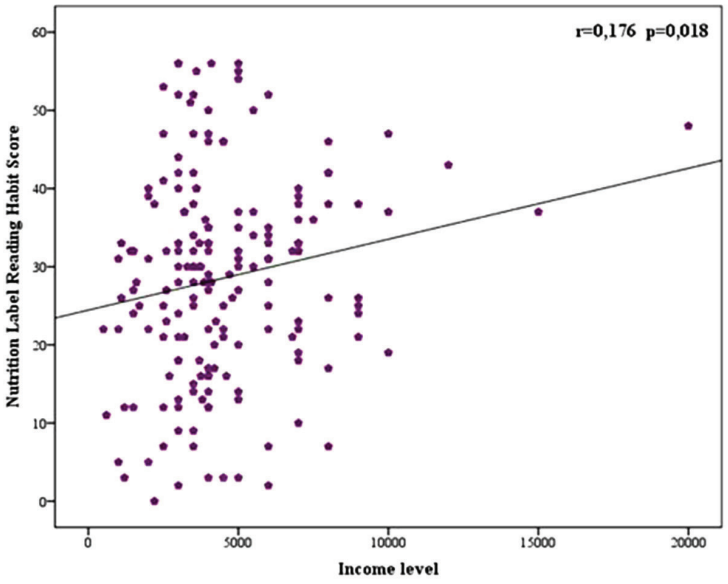

Figure 3: Scatfer-dot diagram of correlation between income level and nutrition label reading habit score.

Discussion

Recently, consumers are more interested in production methods, the ingredients of the food they consume and the effects of these foods on their health (17). Consumers believe that they can easily distinguish healthy foods from unhealthy foods, and some authors even claim that consumers are conscious of making the distinction (18). In Aygen's study, it was found that 20% of consumers always, 33% generally, 38% sometimes and 9% rarely read the nutrition label (14). In this study, it is aimed to evaluate the nutritional label reading habits of consumers.

According to the study of Gorton et al. (19), it was observed that 82% of the participants in total (always, usually, sometimes) read the nutrition labels. In the study conducted by Grunert et al. (20), 52% of consumers in England, 65% in Ireland, 50% in Sweden, 63% in France, 44% in Portugal and 31% in Italy stated that they read nutrition labels all the time. In our study, it was observed that 28% of the participants always and 62% of the participants sometimes read the nutrition label. The frequency of reading nutrition labels may vary from country to country or even from region to region. This situation may be related to the welfare levels of the countries (21). In addition to the frequency of people's nutrition label reading, it is important to investigate effective readings and the behavioural readings.

Technological developments in communication have a very important place in increasing the awareness of the society and the individual. In societies whose basic education level is low, compared to newspapers, books and magazines, the role of radio and television in informing the public is greater. The visual quality of television is even more effective in this regard, as vision has a greater effect on people than hearing (22). Marquis et al. (23) found that consumers learned their nutritional information from magazines, books, the internet, nutrition labels, television, newspapers and radio, respectively. In our study, the participants get the most information about nutrition from TV/ radio after social media. Due to the fact that technology and social media channels have been at the centre of life in recent years, the channels for obtaining information in consumers have turned to these channels as well. It is not surprising that consumers claimed to receive the most information from social media in our study.

Many factors are effective in purchasing behaviour while consuming food. These are factors such as price, brand, packaging, nutrition label, past experiences, advertisements and visual impression of the food. According to the study by Kolodinsky et al. it was determined that the price was the most effective in purchasing (24). According to Sağlam et al. (25), the rate of those who pay attention to the brand while purchasing a product was found to be 79.3%. According to Yılmaz et al. (26), it was seen that 49.6% of the participants paid attention to the price tag and 42.7% to the brand label. In our study, it was seen that the most importance was given to the price and brand while purchasing the product. This may be related to the consumers' perception of price and brand as an indicator of quality. At the same time, the reason for paying attention to price may indicate that consumers have economic concerns.

In the study conducted by Texeira and Badrie (27), it was stated that 61.2% of consumers read the labels only when they first purchased a product. Again, in the study conducted by Anderson and Calingeart (28), it was stated that most of the consumers read the labels at least when they first bought the product. Similarly, in our study, it was stated that the participants mostly read the nutrition label when they first purchased the product. It is seen that the results of our study in this sense are compatible with the literature. These results are not surprising, as consumers are curious about the product that they bought for the first time and want to have an idea about it, which will help them for their next shopping.

According to Gorton et al. (19), the participants mostly do not read the products because they already know the products. In our study, it was found that the most common reason for the participants to not read the nutrition label was because they always bought the same brands. This situation may be related to conservativism of the customers in turning to different brands and accepting their own knowledge as more secure.

In our study, the participants were asked 28 questions prepared by the researchers to measure the habit. While the scores that could be obtained ranged from 0 to 56, the average score obtained by the participants was found to be 28.3±13.3. Considering the mean of the participants, it is seen that the reading habit is not very good and there are deficiencies.

The habit of reading nutrition labels may differ according to gender. In a study by Coşkun and Kayışoğlu (29), it was found that women pay more attention to tag information and have a higher habit of reading labels compared to men. In the study conducted by Rodolfo and Nayga (30), it was stated that men read less nutrition label information than women, and men pay less attention to food and health issues than women. In the study conducted by Demir and Pala (31), the habit of reading nutrition labels in women was found to be higher than men. According to the study by Byrd-Bredbenner et al. (32), it was stated that women are generally better at the use of nutrition value labels. In our study, the habit of reading the nutrition label in women was found to be significantly higher than the score of men. This may be related to the fact that women attach more importance to their nutrition, health and home health than men.

The habit of reading nutrition labels is affected by the level of education (20). Trandafilović et al. (33) conducted a research among 598 participants from 10 cities in the Republic of Serbia on the knowledge of the importance and content of nutrients. In this study, it was stated that the education level affects the reading frequency and that individuals who receive nutrition education have a higher frequency of reading labels. In our study, as the level of education increases, the score for reading nutrition labels increases. At the same time, the score of the nutrition label reading habit of those who have received some type of training on nutrition was found to be significantly higher than those who did not receive training. This situation can be related to the positive effects of education on nutritional literacy and the positive health effects of nutrition.

Studies have found a significant relationship between being married and reading nutrition labels (20, 34). According to the study by Besler et al. (35), the rate of reading the nutrition label of married individuals was found to be higher than singles. Similarly, in our study, the score for the habit of reading nutrition labels was found to be significantly higher in married individuals than singles. This may be related to the fact that married people are more sensitive to nutrition issue both for their partners and for their children while buying food. As a matter of fact, in our study, the nutrition label reading habits of those with children were found to be significantly higher than those of those who did not have children.

Wang et al. (36) conducted a research using data from the 1987-1988 National Food Consumption Survey, to determine how nutrition labels affect consumer behaviour. It has been found that high-income consumers use the nutrition label more as a source of information. In our study, it was observed that there was a significant, low level positive relationship between income level and nutrition label reading habit score.

Conclusion

As a result, it was observed that there were deficiencies in the habit of reading nutrition labels. It has been found that women, married people and those who have children have a high habit of reading nutrition labels. In order to overcome these deficiencies, frequent use of mass tools such as social media and TV by ministries may be beneficial. At the same time, it may be beneficial to organize various trainings in the field of nutrition and nutrition labelling.

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