European Journal of Environment and Public Health
2023, 7(4), em0144
e-ISSN: 2542-4904
https://www.ejeph.com

MODESTUM

Research Article

OPEN ACCESS

Evaluation of nutrition label reading habits and knowledge levels among Turkish consumers: Implications for healthier food choices

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Citation: Icer MA, Gezmen Karadag M. Evaluation of nutrition label reading habits and knowledge levels among Turkish consumers: Implications for healthier food choices. EUR J ENV PUBLIC HLT. 2023;7(4):em0144. https://doi.org/10.29333/ejeph/13392

ARTICLE INFO

Received: 03 Apr. 2023

Accepted: 30 May 2023

ABSTRACT

Objectives: Nutrition labels are increasingly seen as a crucial strategy to combat diet-related chronic diseases, especially obesity. This study, it is aimed to evaluate the nutrition label reading habits of Turkish consumers and their knowledge levels about nutrition labels and claims.

Method: The population of the research consists of 1,195 volunteers, 597 males and 598 females, aged between 18-65 years. The data of the study were collected using a face-to-face interview technique through a questionnaire. With the questionnaire form, descriptive information of individuals, reading habits of nutrition labels, information about nutrition label content, and preferred information and statements on nutrition labels were questioned.

Results: In the study, it was found that the rate of reading the packaging information, the need to research an ingredient in its composition after reading the nutrition label ($p<0.001$) and hearing some terms used frequently in the food industry (such as colorants, preservatives, sweeteners, etc.) ($p<0.05$) of those who find the label information important when purchasing food is higher than those who do not find it important in both genders and total participants. In addition, in the study, it was determined that those who knew the nutrition claims on the nutrition labels in all groups prefer more some nutrition claims such as "reduced energy" and "trans-fats free" among the most read nutrition claims ($p<0.001$).

Conclusions: These results suggest that instilling the importance of reading nutrition labels and teaching nutrition claims to individuals in the community may be a cost-effective intervention to encourage consumers to make healthier food choices and acquire healthier eating habits.

Keywords: nutrition labels, nutrition claims, nutrition information

INTRODUCTION

According to the World Obesity Atlas 2022 published by the World Obesity Federation, it is estimated that one billion people worldwide will live with obesity by 2030, one out of every five women and one out of seven men [1]. "Nutrition labels" are increasingly seen as an important component in comprehensive strategies to combat obesity caused by increased energy intake as a result of the widespread consumption of processed ready-to-eat foods [2, 3].

Nutrition labels are an important communication tool between food manufacturers and consumers [4]. Nutrition labels encourage consumers to make healthier food choices [5]. In a meta-analysis evaluating the effects of nutrition labels on consumers' eating habits; it has been determined that nutrition labels lead consumers to healthier food choices [6].

It is stated that nutrition labeling can contribute to the improvement of health with its effects on the food industry as well as the effects on the food choices of consumers [5, 6]. For example, the requirement to specify the trans-fat content on the labels of packaged foods necessitated the development of food technologies that will reduce the trans-fat content in the food industry [6]. It is important to the presence of nutritional labels in packaged foods as well as how the nutrition labels are designed is also very important [5]. It is reported that when well-designed, nutritional labels can potentially have a positive impact on the national diet [5, 7]. On the other hand, poorly designed nutrition labels and information confusion on nutrition labels adversely affect the level of consumers' benefit from these labels [8].

Nutrition claims describe the amount of a nutrient in a food (e.g., "low in sodium") and/or the health or disease-related properties of a food product or food ingredient (for example, a healthy diet low in saturated and trans fats may reduce the risk

of heart disease) [9-11]. The correct application of nutrition claims on nutrition labels can lead consumers to make healthier food choices [10].

Healthy diet and food choices are the main modifiable factors for healthy aging and the prevention of chronic diseases [12]. Therefore, investigating the factors that influence food choices and nutritional status is crucial to efforts to improve the health of populations. Nutrition labels have an important place among the factors that affect nutritional behavior and food preference [6]. Furthermore, learning the habits of consumers to read nutrition labels, their level of knowledge and expectations about these labels will contribute to better design of nutrition labels. In this study, it is aimed to evaluate the nutritional label reading habits of Turkish adults and their knowledge levels about nutrition labels and nutrition claims.

MATERIALS AND METHODS

Study Design and Participants

This study was conducted on 1,195 participants, 597 men and 598 women, aged between 18-65 years. Individuals with a diagnosis of neurological disease were excluded from the study due to the difficulty of establishing healthy communication and the concerns of not answering the questions correctly. In the study, a questionnaire form was applied to the individuals by the face-to-face interview method. With the questionnaire, the descriptive information of the participants (age, gender, marital status, education level, occupation, and number of households), nutrition label reading habits, information levels about nutrition labels and the information and claims they prefer to be on the food label were questioned.

Determination of Participants' Nutrition Label Reading Habits, Information Levels About Nutrition Labels, and Preferred Information and Claims to be on Nutrition Labels

Within the scope of the research, 11 questions were asked to the participants under the sub-title of "information on nutrition label reading habits" via a questionnaire, and the participants' nutritional label reading habits, the importance they attach to nutrition label reading and their level of knowledge about food packaging were questioned. In the survey, within the scope of the sub-title of "information on nutrition labels", seven questions were asked and the information about the nutrition claims on the nutrition labels, the most read nutrition claims, and health claims of the participants were questioned. In addition, participants were asked to fill in three tables within the scope of "preferred information and claims on nutrition labels" subheading in the survey; the frequency of paying attention to some phrases on nutrition labels, which of the statements on the packaging are more important, and the level of knowledge about food additives, probiotics, prebiotics, and symbiotics was determined.

Statistical Analyses

Statistical package for the social sciences (SPSS, version: 23.0) statistical package program was used for the statistical evaluation of the data obtained from the study. Number and percentage (%) values were calculated for the variables obtained from individuals. The correlation between categorical variables was examined by the chi-square test. Statistical significance rates were given in 99% and/or 95% confidence intervals in all analyses.

Table 1. Distribution of general characteristics of participants

Variable	Male		Female		χ^2	p
	n	%	n	%		
Age (years)						
18-24	120	20.1	118	19.6	0.05	0.999
25-34	120	20.1	120	20.1		
35-44	120	20.1	120	20.1		
45-54	120	20.1	120	20.1		
55-65	117	19.6	120	20.1		
Marital status						
Married	427	71.5	419	70.1	0.31	0.580
Single	170	28.5	179	29.9		
Educational status						
Literacy	8	1.3	12	1.9	17.72	0.001*
Primary school	38	6.4	74	12.4		
Middle school	73	12.2	55	9.2		
High school	265	44.4	276	46.2		
University	213	35.7	181	30.3		
Occupation						
Housewife	0	0.0	254	42.5	372.83	0.000*
Public servant	172	28.9	104	17.4		
Worker	70	11.7	30	5.0		
Self-employment	122	20.4	21	3.5		
Retired	88	14.7	54	9.0		
Part time worker	58	9.7	35	5.9		
Unemployed	16	2.7	19	3.2		
Student	71	11.9	81	13.5		
Number of household members						
1	15	2.5	16	2.7	9.39	0.226
2	76	12.7	86	14.4		
3	128	21.5	105	17.5		
4	248	41.6	248	41.5		
5	91	15.2	116	19.4		
6	27	4.5	22	3.7		
7	8	1.3	3	0.5		
8	4	0.7	2	0.3		
Number of individuals working in the household						
0	32	5.4	42	7.0	8.58	0.127
1	396	66.3	360	60.2		
2	141	23.6	175	29.3		
3	19	3.2	16	2.7		
4	7	1.2	3	0.5		
5	2	0.3	2	0.3		
The person doing the shopping in the household						
Myself	86	14.4	93	15.5	4.81	0.187
My partner	32	5.3	18	3.0		
My partner & myself	204	34.2	196	32.8		
Any of family members	275	46.1	291	48.7		

Note. n=597 for male & n=598 for female; *p<0.05; & Chi-square test

RESULTS

The distribution of the general characteristics of the participants in the study is given in **Table 1**.

Table 2. Distribution of information about nutrition label reading habits of participants

	Male (n=597)		Female (n=598)		Total participants (n=1,195)		χ^2	p
	n	%	n	%	n	%		
Whether participants attach importance to the nutrition labels while purchasing food products								
Yes	342	57.3	371	62.0	713	59.7	2.805	0.094
No	255	42.7	227	38.0	482	40.3		
Whether the participants found the packaging information in foods sufficient or not								
Yes	473	79.2	469	78.4	942	78.8	0.115	0.735
No	124	20.8	129	21.6	253	21.2		
Whether having a health problem affects the habit of reading nutrition labels								
Yes	395	66.2	394	65.9	789	66.0	0.010	0.919
No	202	33.8	204	34.1	406	34.0		
Whether trust in the trademark of food purchased affects label reading								
Yes	395	66.2	398	66.6	793	66.4	0.020	0.886
No	202	33.8	200	33.4	402	33.6		
Whether it is a food that is stopped buying a product after reading the nutrition label information								
Yes	141	23.6	178	29.8	319	26.7	5.770	0.016*
No	456	76.4	420	70.2	876	73.3		

Note. *p<0.05 & Chi-square test

Table 3. Evaluation of attitudes & knowledge levels of participants towards packaging & nutrition labels according to whether they find label information important when purchasing food

	Male (n=597)					Female (n=598)					Total participants (n=1,195)				
	Important (n=342)		Unimportant (n=255)		p	Important (n=371)		Unimportant (n=227)		p	Important (n=713)		Unimportant (n=482)		p
	n	%	n	%		n	%	n	%		n	%	n	%	
Reading packaging information															
I read at firstly purchase	75	21.9	26	10.2	0.000*	79	21.3	33	14.5	0.000*	154	21.6	59	12.2	0.000*
I read occasionally	199	58.2	208	81.6		210	56.6	176	77.6		409	57.4	384	79.7	
I read every time	68	19.9	21	8.2		82	22.1	18	7.9		150	21.0	39	8.1	
Buying unpackaged food															
Yes	303	88.6	208	81.6	0.016*	309	83.3	180	79.3	0.220	612	85.8	388	80.5	0.014*
No	39	11.4	47	18.4		62	16.7	47	20.7		101	14.2	94	19.5	
Need to research a substance in composition of that food after reading nutrition label															
Yes	109	31.9	38	14.9	0.000*	113	30.5	27	11.9	0.000*	222	31.1	65	13.5	0.000*
No	233	68.1	217	85.1		258	69.5	200	88.1		491	68.9	417	86.5	
Knowing nutrition claims on label															
Yes	188	55.0	134	52.5	0.557	230	62.0	127	55.9	0.143	418	58.6	261	54.1	0.125
No	154	45.0	121	47.5		141	38.0	100	44.1		295	41.4	221	45.9	
State of knowing health claims on label															
Yes	149	43.6	140	54.9	0.006*	175	47.2	112	49.3	0.606	324	45.4	252	52.3	0.020*
No	193	56.4	115	45.1		196	52.8	115	50.7		389	54.6	230	47.7	

Note. *p<0.05 & Chi-square test

There was no difference between the genders in terms of age groups (p>0.05). When the education level is evaluated, 19.9% of the male gender is pre-high school, 44.4% is high school and 35.7% is university or higher graduate, while respectively %23.5, %46.2, and %30.3 in female gender (p<0.05). When the occupational status was evaluated, it was determined that the highest rate of 28.9% was government employees in the male gender and a housewife with the rate of 42.5% in the female gender (p<0.05).

The distribution of information about the nutrition label reading habits of the participants is also shown in **Table 2**. While the status of being a food that is given up after reading the label information is 23.6% in the male gender, it is seen that this situation is 29.8% in the female gender (p<0.001). However, there is no significant difference between genders in terms of finding label information important when purchasing food (p>0.05).

It was determined that the rate of reading the packaging information, buying unpackaged food and the need to research a substance in the composition of that food after reading the nutrition label was higher in the male gender and in the total participants (male+female gender) who found the label information important when purchasing food than those who did not find it important (p<0.05), but the rate of knowing the health claims on the label was lower (p<0.05) (**Table 3**).

It was found that the rate of reading the packaging information and the need to research a substance in the composition of that food after reading the nutrition label was higher in the female gender who found the label information important when purchasing food than those who did not find it important (p<0.001).

The distribution of the most frequently read nutrition claims by the participants according to their knowledge of the nutrition claims on the nutrition labels is given in **Table 4**.

Table 4. Distribution of most frequently read nutrition claims by participants according to their knowledge of nutrition claims on nutrition labels

	Male (n=597)				p	Female (n=598)				p	Total participants (n=1,195)				p
	Knowing (n=322)		Unknowing (n=275)			Knowing (n=357)		Unknowing (n=241)			Knowing (n=679)		Unknowing (n=516)		
	n	%	n	%		n	%	n	%		n	%	n	%	
Reduced energy															
Yes	188	58.4	0	0.0	0.000*	208	58.3	1	0.4	0.000*	396	58.3	1	0.2	0.000*
No	134	41.6	275	100.0		149	41.7	240	99.6		283	41.7	515	99.8	
Low fat/fat free															
Yes	239	74.2	7	2.5	0.000*	279	78.2	1	0.4	0.000*	518	76.3	8	1.6	0.000*
No	83	25.8	268	97.5		78	21.8	240	99.6		161	23.7	508	98.4	
Saturated fats free															
Yes	64	19.9	6	2.2	0.000*	80	22.4	2	0.8	0.000*	144	21.2	8	1.6	0.000*
No	258	80.1	269	97.8		277	77.6	239	99.2		535	78.8	508	98.4	
Trans-fats free															
Yes	251	78.0	1	0.4	0.000*	280	78.4	1	0.4	0.000*	531	78.2	2	0.4	0.000*
No	71	22.0	274	99.6		77	21.6	240	99.6		148	21.8	514	99.6	
Omega-3 enriched															
Yes	16	5.0	0	0.0	0.000*	24	6.7	1	0.4	0.000*	40	5.9	1	0.2	0.000*
No	306	95.0	275	100.0		233	93.3	240	99.6		639	94.1	515	99.8	
Cholesterol free															
Yes	30	9.3	1	0.4	0.000*	29	8.1	0	0.0	0.000*	59	8.7	1	0.2	0.000*
No	292	90.7	274	99.6		328	91.9	241	100.0		620	91.3	515	99.8	
No salt/low salt															
Yes	42	13.0	6	2.2	0.000*	54	15.1	0	0.0	0.000*	96	14.1	6	1.2	0.000*
No	280	87.0	269	97.8		303	84.9	241	100.0		583	85.9	510	98.8	
High fiber															
Yes	35	10.9	1	0.4	0.000*	47	13.2	0	0.0	0.000*	82	12.1	1	0.2	0.000*
No	287	89.1	274	99.6		310	86.8	241	100.0		597	87.9	515	99.8	
Full of vitamins/minerals															
Yes	38	11.8	6	0.4	0.000*	49	13.7	0	0.0	0.000*	87	12.8	6	1.2	0.000*
No	284	88.2	269	99.6		308	86.3	241	100.0		592	87.2	510	98.8	

Note. *p<0.05 & Chi-square test

It was determined that those who know the nutrition claims on the nutrition labels in all groups prefer more "reduced energy", "low fat/fat free", "saturated fats free", "trans-fats free", "omega-3 enriched", "cholesterol free", "no salt/low salt", "high fiber", and "full of vitamins/minerals" among the most read nutrition claims compared to those who do not know (p<0.001).

The state of hearing some terms according to whether the participants find the label information important when purchasing food is shown in **Table 5**.

In men, the rate of hearing the term "E100-180, colorants", "E200-285, E330, preservatives", "E620-637, sweeteners, fragrances", and "E920-927, broad-purpose food additives" was found to be higher for those who find the label information important when purchasing food than those who do not find it important (p<0.05). In the female and the total participants, the rate of hearing the term "E100-180, colorants", "E200-285, E330, preservatives", "E300-321, antioxidant", "E500-578, acid-base providers", "E620-637, sweeteners, fragrances", "E920-927, broad-purpose food additives", "nitrite, nitrate, sorbic acid", "lecithin, calcium chloride", and "acetic acid, citric acid, lactic acid" was found to be higher for those who find the label information important when purchasing food (p<0.05).

DISCUSSION

Nutrition labels act as a bridge in the communication between food producers and consumers and are effective in shaping the food choices and dietary habits of consumers [13]. For this reason, it is very important to determine the factors that affect food label reading habits. Among the factors thought to be effective are socio-demographic characteristics [13-15]. It was determined that young, female, married, working, high-income and highly educated individuals are more likely to read and use nutrition labels when purchasing foods [14]. It was also found that the rate of reading habits on food labels is higher in highly educated, single, working individuals, physically active adults, and non-smokers [13]. In this study, it is seen that there is a significant difference between the genders (23.6% in the male gender, 29.8% in the female gender) in terms of being a food that is given up after reading the label information (p<0.001) (**Table 2**).

Although this result indicates that female individuals find the information on food labels more important, it should not be ignored that no significant difference was found between the sexes in terms of finding label information important when purchasing food (p>0.05) (**Table 2**).

Table 5. State of hearing some terms according to whether participants find label information important when purchasing food

	Male (n=597)				p	Female (n=598)				p	Total participants (n=1,195)				p
	Important (n=342)		Unimportant (n=255)			Important (n=371)		Unimportant (n=227)			Important (n=713)		Unimportant (n=482)		
	n	%	n	%		n	%	n	%		n	%	n	%	
E100-180, colorants															
Heard	226	66.1	132	51.8	0.000*	267	72.0	124	54.6	0.000*	493	69.1	256	53.1	0.000*
Unheard	116	33.9	123	48.2		104	28.0	103	45.4		220	30.9	226	46.9	
E200-285, E330, preservatives															
Heard	200	58.5	104	40.8	0.000*	238	64.2	86	37.9	0.000*	438	61.4	190	39.4	0.000*
Unheard	142	41.5	151	59.2		133	35.8	141	62.1		275	38.6	292	60.6	
E300-321, antioxidant															
Heard	170	49.7	109	42.7	0.092	190	51.2	95	41.9	0.026*	360	50.5	204	42.3	0.006*
Unheard	172	50.3	146	57.3		181	48.8	132	58.1		353	49.5	278	57.7	
E322-500, emulsifiers & stabilizers															
Heard	70	20.5	52	20.4	0.982	93	25.1	45	19.8	0.140	163	22.9	97	20.1	0.261
Unheard	272	79.5	203	79.6		278	74.9	182	80.2		550	77.1	385	79.9	
E500-578, acid-base providers															
Heard	94	27.5	58	22.7	0.188	118	31.8	53	23.3	0.026*	212	29.7	111	23.0	0.010*
Unheard	248	72.5	197	77.3		253	68.2	174	76.7		501	70.3	371	77.0	
E620-637, sweeteners, fragrances															
Heard	171	50.0	100	39.2	0.009*	208	56.1	92	40.5	0.000*	379	53.2	192	39.8	0.000*
Unheard	171	50.0	155	60.8		163	43.9	135	59.5		334	46.8	290	60.2	
E920-927, broad-purpose food additives															
Heard	161	47.1	92	36.1	0.007*	193	52.0	79	34.8	0.000*	354	49.6	171	35.5	0.000*
Unheard	181	52.9	163	63.9		178	48.0	148	65.2		359	50.4	311	64.5	
Nitrite, nitrate, sorbic acid															
Heard	102	29.8	72	28.2	0.673	121	32.6	48	21.1	0.003*	223	31.3	120	24.9	0.017*
Unheard	240	70.2	183	71.8		250	67.4	179	78.9		490	68.7	362	75.1	
Lecithin, calcium chloride															
Heard	99	28.9	60	23.5	0.139	118	31.8	44	19.4	0.001*	217	30.4	104	21.6	0.001*
Unheard	243	71.1	195	76.5		253	68.2	183	80.6		496	69.6	378	78.4	
Monosodium glutamate															
Heard	87	25.4	59	23.1	0.518	105	28.3	50	22.0	0.089	192	26.9	109	22.6	0.092
Unheard	255	74.6	196	76.9		266	71.7	177	78.0		521	73.1	373	77.4	
Acetic acid, citric acid, lactic acid															
Heard	131	38.3	83	32.5	0.147	151	40.7	70	30.8	0.015*	282	39.6	153	31.7	0.006*
Unheard	211	61.7	172	67.5		220	59.3	157	69.2		431	60.4	329	68.3	
Aspartame, sorbitol, acesulfame-K															
Heard	76	22.2	51	20.0	0.512	85	22.9	44	19.4	0.309	161	22.6	95	19.7	0.235
Unheard	266	77.8	204	80.0		286	77.1	183	80.6		552	77.4	387	80.3	
Prebiotic															
Heard	151	44.2	133	52.2	0.053	192	51.8	120	52.9	0.792	343	48.1	253	52.5	0.137
Unheard	191	55.8	122	47.8		179	48.2	107	47.1		370	51.9	229	47.5	
Symbiotic															
Heard	55	16.1	47	18.4	0.451	59	15.9	30	13.2	0.370	114	16.0	77	16.0	0.995
Unheard	287	83.9	208	81.6		312	84.1	197	86.8		599	84.0	405	84.0	

Note. *p<0.05 & Chi-square test

In addition, in the present study, it was determined that there was a difference between the genders in terms of education and occupational status (p<0.05 and p<0.001, respectively) (**Table 1**). However, the relationship between these sociodemographic characteristics and nutrition label reading habits was not evaluated in the study. For this reason, it is not possible to interpret the effects of education and occupation status on the habit of reading nutrition labels from the current study data. Investigating this relationship in future studies will help to better understand which sociodemographic characteristics are effective in gaining the habit of reading nutrition labels.

Globally, daily dietary energy (kcal) intake is increasing day by day, and processed ready-to-eat foods, whose consumption is becoming more widespread, are held responsible for this situation [2, 3]. Obesity, one of the consequences of unhealthy nutrition caused by these nutritional trends, has become a crucial public health problem today [16]. Nutrition labels are increasingly seen as a crucial strategy to combat diet-related chronic diseases, especially obesity [3]. Nutrition labels provide considerable information to the consumer regarding the content of the food, nutrition claims, and nutritional benefits [17]. Nutrition claims are also important tools used in the food industry to help consumers make healthy food choices [18]. In a meta-analysis, it was found that nutritional labels decreased the total energy and total fat intake of consumers and increased the consumption of vegetables [6]. Data obtained from another meta-analysis also suggest that

nutrition labels may lead consumers to choose healthier and less calorie-containing foods [3]. In addition, nutrition labels can contribute to a healthy diet by increasing the choice of some health-promoting foods (such as fiber-rich foods) and reducing the choice of some harmful foods (such as foods high in sugar, fat, and cholesterol) at purchase [19-21]. It is also stated that nutrition claims on nutrition labels have a positive effect on consumers' food purchase preferences [10, 18, 22]. It was found that most consumers are willing to pay for two nutrition claims, "high fiber" and "reduced in saturated fat", and that these nutrition claims on nutrition labels lead individuals to choose healthier foods [18]. In this study, it was determined that the rate of reading the packaging information and the need to research a substance in its composition after reading the nutrition label of those who found the label information important while purchasing food in all groups was higher ($p<0.001$) (**Table 3**). Additionally, the rate of buying unpackaged food in the male group and total participants who found the label information important was higher than in those who did not find it important ($p<0.05$), but the rate of knowing the health claims on the label was lower ($p<0.05$) (**Table 3**). These results suggest that finding nutritional label information important will lead individuals to choose healthier food by increasing the rate of reading the food label, the need for research on the content of nutrients, and the rate of buying unpackaged food. However, the fact that those who find the nutritional label information important have a lower rate of knowing the health claims on the label creates a contradiction. For this reason, this situation should be investigated again with new studies to be done. Another result of the study is that those who know the nutrition claims on the nutrition labels in all groups prefer more "reduced energy", "low fat/fat free", "saturated fats free", "trans-fats free", "omega-3 enriched", "cholesterol free", "no salt/low salt", "high fiber", and "full of vitamins/minerals" among the most read nutrition claims ($p<0.001$) (**Table 4**). Taking this data into consideration, it is thought that knowing the nutrition claims on the nutrition labels leads individuals to read more about the nutrition claims they attribute as healthier (such as "trans-fats free"). Furthermore, the habit of reading food labels is likely to contribute to awareness of these nutritional claims. The data obtained from the literature and this study suggest that explaining the importance of nutrition labels and nutrition claims at the societal level can lead consumers to make healthier food choices and gain eating habits.

Increasing the nutritional knowledge level of consumers and the rate of reading food labels are considered crucial tools to encourage their orientation towards healthier food choices [23]. It is stated that people are generally willing to improve their health and control their body weight by increasing their nutritional knowledge [21]. It is also reported that there is a relationship between the level of nutritional knowledge and the status of reading food labels [23]. It was found that individuals with high nutritional knowledge had a higher rate of reading the food label ($p<0.0001$) and the effect of the food label on purchase intention ($p<0.05$) [23]. Another result is that individuals with low nutritional knowledge do not or rarely look at nutrition labels to check whether their food is low in fat [23]. In this study, it was found that the rate of hearing some terms frequently used in the food industry (such as colorants and preservatives) of those who find the label information important when purchasing food is higher than those who do not find the label information important ($p<0.05$) (**Table 5**). Individuals who think that nutrition label information is important are more likely to have heard/know some terms frequently used in the food industry due to selective perception and the increasing need for research. These results suggest that the habit of reading nutrition labels can contribute to increasing the level of nutritional knowledge and healthy food choices.

Limitations

One of the important limitations of the study is that anthropometric measurements such as the body weight of the participants were not questioned in the current study. Moreover, the most important limitation of the study is that the relationship between the habit of reading nutrition labels and healthy-unhealthy food choices was not questioned. Taking anthropometric measurements and questioning the specified relationships in future studies will provide a clearer presentation of the effects of nutrition label reading habits on food selection.

CONCLUSIONS

In conclusion, it was found in the study that finding nutritional label information important can increase the rate of reading the food label, The need to research a substance in the composition of foods, and the rate of buying unpackaged food. Another result of the study is that knowing the nutrition claims encourages individuals to read some nutrition claims more (such as "trans-fats free"). Furthermore, the study found that finding nutritional label information important may increase the likelihood of hearing some terms used frequently in the food industry. In line with these results, it is suggested that instilling the importance of reading nutrition labels and teaching nutrition claims to individuals in the community may be a cost-effective intervention to encourage consumers to make healthier food choices and acquire healthier eating habits. In this context, it can be ensured that public service announcements emphasizing the importance of reading nutrition labels in the media are increased, education is given to students on nutrition labels and claims in schools, and the information and claims on nutrition labels can be made more visible.

Author contributions: All co-authors have been involved in all stages of this study while preparing the final version. They all agree with the results and conclusions.

Funding: No funding source is reported for this study.

Declaration of interest: No conflict of interest is declared by the authors.

Ethical statement: Ethics committee approval of the study was obtained from Amasya University Non-Interventional Clinical Research Ethics Committee with decision number 2023/06 dated 19 January 2023. Signed informed consent was obtained from all participants and the study was conducted in accordance with the Declaration of Helsinki.

Data sharing statement: Data supporting the findings and conclusions are available upon request from corresponding author.

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