

Evaluation of Food Label Reading Awareness, Healthy and Halal Nutrition Attitudes in Adults

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Abstract

Background: The aim of this study is to evaluate the relationship between food label reading awareness and healthy and halal nutrition attitudes in adults aged 18-65.

Method: It was conducted digitally between March-August 2024 with 403 volunteers aged 18-65. The individuals' sociodemographic characteristics, food label reading habits, and healthy and halal nutrition attitudes were investigated. The survey included a total of 53 questions. Individuals participating in the study were randomly selected.

Results: A significant difference was found in label reading awareness, healthy and halal nutrition status according to age, marital status and income level ($p < 0,05$). Accordingly, individuals over the age of 30, singles and individuals with high income levels were found to have higher food label reading awareness and healthy and halal nutrition attitudes. A positive correlation was obtained between label reading awareness, healthy nutrition attitude and halal nutrition attitude.

Conclusion: Food label reading awareness is a tool that strengthens both healthy and halal nutrition attitudes of individuals, allowing them to make conscious food choices and thus adopt a lifestyle that is compatible with both their health goals and religious beliefs.

Keywords: Label reading, healthy nutrition, halal nutrition

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1. Introduction

Nutrition labels are used as a tool that supports product sales and is usually found in processed packaged foods, consisting of text or graphics related to the energy and content of foods to consumers. Nutrition labels provide consumers with nutritional information about the product, helping them make healthy food choices and adopt healthy eating habits (Cannoosamy et al., 2014). The habit of reading food labels helps individuals control their daily calorie intake and avoid products that contain high fat, sugar and sodium. Research shows that people who read food labels regularly make more conscious food choices and develop healthier eating habits (Campos et al., 2011; Cowburn & Stockley, 2005; Drichoutis et al., 2006).

Health is a state of being well in terms of mental and physical social aspects. Nutrition forms the basis of health. Nutrition is necessary for a person to continue their life in a healthy way during their growth and development. Nutrition, which provides physical and behavioral integrity, starts in the womb and continues until the end of life. Nutritional habits, which are shaped by the socio-economic status, culture and education of the society at the beginning of life, may differ from person to person (Erge, 2003; Misselbrook, 2014; Özdenk & Özcebe, 2018). Healthy eating attitudes include a series of behaviors, beliefs and motivations that shape the eating habits of individuals. These attitudes help individuals choose the right foods, control portion sizes, and maintain a balanced diet in order to protect and improve their health. Research shows that healthy eating attitudes play an important role in preventing chronic diseases such as heart disease, diabetes, and obesity (Contento, 2007; Fila & Smith, 2006).

In Islamic law, "halal" means permitted, while "haram" means prohibited. Halal nutrition allows the consumption of certain foods in line with these religious principles, while prohibiting the consumption of substances considered haram, such as alcohol and pork (Bonne & Verbeke, 2008). Muslims take into account the criteria of halal and haram in their food choices, as in all kinds of products and services (Ab Talib & Mohd Johan, 2012). Halal is a vital feature of Islamic culture. For this reason, some technical regulations and certification studies to be carried out according to these technical regulations have gained importance in the halal food sector (Güzel & Kartal, 2017). Halal eating attitude is an attitude based on the concepts of halal and haram in Islam, which includes individuals acting in accordance with their religious beliefs in their food and beverage choices. This attitude is not limited to the halal nature of foods, but also includes healthy, clean, and ethical production processes. In addition to being a religious obligation for Muslims, it is increasingly accepted as an important consumer behavior in the global food market.

Awareness of reading food labels allows healthy and halal eating attitudes to come together. For example, a halal certificate does not guarantee that a product is also suitable for health. However, individuals who can read food labels correctly can choose both halal and healthy products. This is of increasing importance, especially in the halal food sector, because consumers care not only about their religious beliefs but also about their health. While the relationship between food label reading and healthy eating has been explored in previous studies, the integration of halal eating attitudes remains underexplored, particularly in the context of combined health and religious considerations. This study aims to examine the intersection of food label reading habits, healthy eating attitudes, and halal eating principles in adults, providing insights into how these factors collectively influence dietary choices.

2. Method

The study was conducted online between March and August 2024 with 403 volunteers aged 18-65. Ethics committee with approval numbered 2024/410 was received for the study from ***** University Local Ethics Committee. This cross-sectional study investigated the sociodemographic characteristics of individuals, their food label reading habits, healthy eating and halal eating attitudes. The survey included 14 questions about food label reading awareness, 19 questions about healthy eating habits and 20 questions about halal eating attitudes. The scales used in this study were selected based on similar studies in the literature and developed considering specific psychometric properties. The questions related to food label reading awareness, healthy eating habits, and halal eating attitudes were designed with the contributions of field experts and subjected to validity and reliability tests. Each scale was adapted in accordance with references from the relevant literature to fit the target population of the study (Demir & Cicioğlu, 2019; İçer &

Karadağ, 2023). Responses were recorded on a 5-point Likert Scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The individuals participating in the study were randomly selected.

2.1. Number of Participants to be Included in the Study

It was decided that at least 384 participants would be required for the study to estimate the frequency of ethical reading awareness, healthy and halal eating attitudes with a 95% confidence level and a 5% margin of error, and that at least 400 people would participate in the study considering the 10% data loss.

2.2. Statistical Analyses

Statistical analyses will be conducted using SPSS version 21 software. Before the analyses, the normality of the data will be checked with the help of Shapiro-Wilk's normality test. Relationships between scale/sub-dimension scores and participants' sociodemographic characteristics will be analyzed using independent sample t-tests and One-Way ANOVA. A significance level of $p < 0.05$ will be used for all statistical tests.

3. Results

The results of the statistical analysis conducted with the obtained data are given below.

Information showing the distribution of participants' age, gender, marital status, education level and income level is shown in Table 1. Descriptive statistics (mean, median, standard deviation, minimum, and maximum) for LRA, HNA, and HALNA scores are presented in Table 2.

Table 1. Sociodemographic characteristics of the participants (n=403)

		n	%
Age	Age under 30	212	% 52.6
	30 and over	191	% 47.4
Gender	Male	169	% 41.9
	Female	234	% 58.1
Marital Status	Married	193	% 47.9
	Single	210	% 52.1
Level of Education	Primary/ High School/ Associate Degree	124	% 30.8
	Undergraduate/Graduate	279	% 69.3
Income Level	10.000 TL and below	130	% 32.3
	10.000-25.000 TL	76	% 18.9
	25.000-50.000 TL	139	% 34.5
	50.000 TL and above	58	% 14.4

Table 2. Mean, median, standard deviation, minimum and maximum values of the data.

	n	Average	Median	Standart Deviation	Min.	Max.
LRA	403	3.815	3.857	0.654	1.429	5.000
HNA	403	3.396	3.389	0.429	1.500	4.611
HALNA	403	3.882	3.900	0.592	1.000	4.900

*LRA: Label Reading Awareness, HNA: Healthy Nutrition Attitude, HALNA: Halal Nutrition Attitude

In the analysis conducted with the independent sample T-Test, it was observed that there was a significant difference in label reading awareness, healthy eating attitudes and halal eating attitudes of individuals under 30 and over 30. Accordingly, it was determined that individuals over 30 had higher label reading awareness and healthy and halal

eating attitudes compared to individuals under 30. The relevant data is given in Table 3.

Table 3. Label reading awareness, healthy and halal eating attitudes by age.

	Group	n	Average	p value
LRA	Age under 30	212	3.73	< 0.05
	30 and over	191	3.91	
HNA	Age under 30	212	3.38	< 0.05
	30 and over	191	3.42	
HALNA	Age under 30	212	3.79	< 0.05
	30 and over	191	3.98	

*LRA: Label Reading Awareness, HNA: Healthy Nutrition Attitude, HALNA: Halal Nutrition Attitude

No significant differences in LRA, HNA, and HALNA scores were observed based on gender or education level, suggesting these factors do not influence these attitudes within the studied sample. A significant difference was found in label reading awareness, healthy and halal nutrition attitudes according to marital status difference (Table 4.).

Table 4. Label reading awareness, healthy and halal nutrition attitudes according to marital status.

	Group	n	Average	p value
LRA	Married	193	3.91	< 0.05
	Single	210	3.73	
HNA	Married	193	3.42	< 0.05
	Single	210	3.38	
HALNA	Married	193	4.01	< 0.05
	Single	210	3.77	

*LRA: Label Reading Awareness, HNA: Healthy Nutrition Attitude, HALNA: Halal Nutrition Attitude

No significant difference was found between label reading awareness and healthy eating attitudes with different income levels, but a significant difference was found between income levels and halal eating attitudes (One Way ANOVA). (Table 5.) The Tukey Post-Hoc Test results for the relevant data are given in Table 6. A strong positive correlation was observed between LRA, HNA, and HALNA scores, with all relationships being statistically significant ($p < 0.001$, Table 7).

Table 5. Label reading awareness, healthy and halal eating attitudes according to different income levels.

	Group	n	Average	p value
LRA	10.000 TL and below	130	3.69	>0.05
	10.000-25.000 TL	76	3.80	
	25.000-50.000 TL	139	3.91	
	50.000 TL and above	58	3.87	
HNA	10.000 TL and below	130	3.34	>0.05
	10.000-25.000 TL	76	3.44	
	25.000-50.000 TL	139	3.44	
	50.000 TL and above	58	3.36	
HALNA	10.000 TL and below	130	3.74	< 0.05
	10.000-25.000 TL	76	3.90	
	25.000-50.000 TL	139	3.89	
	50.000 TL and above	58	4.14	

*LRA:Label Reading Awareness, HNA: Healthy Nutrition Attitude, HALNA: Halal Nutrition Attitude

Table 6. Halal nutrition attitudes according to different income levels (Tukey Post-Hoc Test)

		10.000 TL and below	10.000-25.000 TL	25.000-50.000 TL	50.000 TL and above
10.000 TL and below	<i>p</i> value	-	0.506	0.832	0.015*
10.000-25.000 TL	<i>p</i> value		-	0.915	0.372
25.000-50.000 TL	<i>p</i> value			-	0.091
50.000 TL and above	<i>p</i> value				-

Notes. * $p < .05$, ** $p < .01$, *** $p < .001$

According to Table 6, a statistically significant difference was observed in halal nutrition attitudes between individuals with an income level of 10.000 TL and below and those with an income level of 50.000 TL and above.

Table 7. Correlation between label reading awareness and healthy and halal nutrition attitudes.

		LRA	HNA	HALNA
LRA	<i>p</i> value	-		
HNA	<i>p</i> value	< .001***	-	
HALNA	<i>p</i> value	< .001***	< .001***	-

Notes. * $p < .05$, ** $p < .01$, *** $p < .001$

In this study, a positive correlation was found between healthy nutrition attitude, halal nutrition attitude, and food label reading awareness. This result indicates that as individuals' awareness of reading food labels increases, their healthy and halal nutrition attitudes also strengthen. In other words, it can be said that the habit of reading food labels contributes to more conscious dietary choices and healthier, halal nutrition behaviors.

4. Discussion

The purpose of this study was planned and conducted to investigate the relationship between adult individuals' awareness of reading food labels and healthy and halal nutrition attitudes.

According to the results of a study conducted in 2023 on consumers' knowledge, attitudes, and preferences towards halal food, it was found that the correct understanding of the definition of halal food affects the level of knowledge about halal food. Additionally, among the factors determining purchasing preferences, the concept of "halal food" was found to be more important for men (İçer & Karadağ, 2023). However, in our study, no significant difference was found based on gender.

According to the study conducted by Kurtoğlu et al., the perceptions, attitudes, and expectations of consumers regarding halal products were determined. It was reported that the statements in the scale prepared for this purpose could be grouped into eight dimensions. The study found that consumers' perceptions, attitudes, and expectations varied according to gender, education level, profession, and income. However, no significant differences were observed based on age and marital status (Kurtoğlu & Çiçek, 2013).

In another study investigating the effect of gender on label reading habits, it was found that women paid more attention to label information, and written expressions were more effective for them (Coşkun & Kayışoğlu, 2018).

A study conducted in 2023 aimed to evaluate university students' attitudes towards reading food label information and their level of food literacy. According to the results, improving food literacy levels may help improve food choices. These findings suggest that increasing the attitude towards reading food labels is an important step in creating healthy food choices (Baş & Kayak, 2023).

Studies have revealed health-related differences between people who report frequently reading nutrition labels on food packages and those who do not. Some of these differences are attitudinal (for example, individuals who frequently read labels tend to perceive health and healthy eating as more important than those who do not); other

differences are behavioral (individuals who frequently read labels tend to eat healthier than those who rarely or never read labels). Young adulthood is a period when individuals who have recently left the family home begin to make more independent choices about food, and many individuals adopt unhealthy eating behaviors and gain excessive weight. In this age group, it is important not only to better understand the use of nutrition labels, but also to what extent it will affect attitudes towards healthy foods and dietary outcomes (Graham & Laska, 2012).

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According to our results;

The vast majority of individuals under 30 years old are students. We think that we obtained a significant difference because students make more independent choices about nutrition, consume more fast food, and have more on-the-go eating habits.

Singles have higher awareness of reading labels and more healthy and halal eating attitudes than marrieds.

While income level did not significantly impact nutrition label reading awareness or healthy eating attitudes, higher income groups exhibited stronger halal nutrition attitudes, likely due to increased access to halal-certified products and broader food options. However, a significant difference was found between halal eating attitudes with different income levels. Accordingly, individuals with an income level of 50,000 TL and above have a higher halal nutrition attitude than individuals with an income level of 10,000 TL and below. Individuals with higher income levels have a more developed halal nutrition attitude due to the increase in access to food as income levels increase.

A positive correlation was obtained between label reading awareness, healthy nutrition attitude and halal nutrition attitude. Individuals with increased label reading awareness also increase their healthy and halal nutrition attitude.

In conclusion, nutrition label reading awareness serves as a critical tool for enhancing both healthy and halal eating attitudes, enabling individuals to make informed food choices aligned with their health objectives and religious values.

5. Conclusion

According to the results obtained, a significant difference was found in label reading awareness, healthy and halal nutrition status according to age, marital status, and income level. Increasing label reading awareness also improves healthy and halal nutrition attitudes. 403 adults participated in this study we conducted to increase awareness on this issue. Our recommendations in line with these results are as follows: Healthy nutrition education, food literacy education, and support practices that will enable individuals to make healthy choices at certain periods should be carried out by the necessary health institutions and organizations. Such practices should be increased, and training aimed at providing these skills to all age groups should be provided by experts in the field in educational institutions. We believe that food label reading awareness will also develop with improvements in clear and concise labeling that provides more understandable, practical healthy nutrition tips and encourages them to make the right food choices.

This study contributes to the existing literature by exploring the relationship between food label reading awareness and healthy and halal nutrition attitudes, especially in adults. The findings highlight the influence of sociodemographic factors such as age, marital status, and income level on individuals' food label reading habits and their nutrition attitudes. Additionally, the positive correlation between label reading awareness and improved nutrition attitudes offers valuable insights for designing interventions aimed at enhancing food literacy in various

demographic groups.

5.1. Limitations

However, there are certain limitations to this study. The sample size, while substantial, may not fully represent the broader population, especially in terms of regional and cultural diversity. Furthermore, the study relies on self-reported data, which can be subject to bias. Future research should aim to include a more diverse sample and incorporate objective measures of food label reading behavior. Additionally, longitudinal studies would provide a better understanding of how changes in label reading awareness over time influence long-term nutrition attitudes and behaviors.

6. Funding Information

There was no source of funding for the study.

7. Conflict of Interest Statement

The authors declare no conflict of interest.

8. Ethics Declarations

Ethics committee approval numbered 2024/410 was received for the study from ***** University Local Ethics Committee.

9. Authors Contributions

FO: Conceptualization, Data Curation, Formal Analysis, Investigation, Methodology, Project Administration, Resources, Validation, Software, Visualization, Writing-original draft, Writing-review&editing.

HV: Supervision, Conceptualization, Project Administration, Resources, Validation, Writing-review&editing.

10. Key Points

- Change in food label reading habits according to age, gender, education level, marital status and income level,
- Change in healthy eating habits according to age, gender, education level, marital status and income level,
- Change in halal eating attitude according to age, gender, education level, marital status and income level.

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